# Power Management Solutions

## Selector Guide

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# CONTENT OF THE SELECTOR GUIDE

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## CPU Core (Controllers) — Maximum Operating Input Voltage < 55V

| Part Number | $V_{CC}$ (Min) (V) | $V_{CC}$ (Max) (V) | $I_Q$ (Typ) (mA) | Shutdown Current (Typ) (mA) | $f_{SW}$ (MHz) | Soft Start | Regulated Output Phase | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP2953B** | 4.75 | 5.25 | 18 | 1 | 0.2 to 1 | Int | 6 | QFN-40 (5x5) | PMBus interface, VR12.5 |
| **MP2935** | 4.5 | 5.25 | 8 | 0.05 | 0.2 to 2 | Int | 4 | QFN-40 (6x6) | VR12.5 |
| N **MP2965** | 3 | 3.6 | 30 | 0.15 | 0.2 to 3 | Int | 7 | QFN-48 (6x6) | VR13.HC/AVSBUS |
| N **MP2888A** | 3 | 3.6 | 30 | 0.15 | 0.2 to 5 | Int | 10 | QFN-40 (5x5) | NVIDIA OpenVReg |
| N **MP2853** | 3 | 3.6 | 34 | 0.11 | 0.2 to 3 | Int | 4 | QFN-40 (5x5) | AMD SVI 2.0 compliant, supports 3-bit PVID mode, PMBus/I²C compliant |

## CPU Core Power (Intelli-Phase™)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_{SW}$ Limit (Typ) (A) | Shutdown Current (Typ) (mA) | $f_{SW}$ (MHz) | PWM Logic (V) | Package |
|---|---|---|---|---|---|---|---|---|
| **MP86905** | 4.5 | 16 | 50 | 75 | 0.08 | 0.1 to 2 | 3.3 | QFN-23 (4x4) |
| N **MP86945A** | 4.5 | 16 | 60 | 90 | 0.01 | 0.1 to 2 | 3.3 | TQFN-25 (4x5) |
| N **MP86934** | 4.5 | 16 | 25 | 60 | 0.03 | 0.1 to 2 | 3.3 | TQFN-21 (3x4) |
| N **MP86933** | 4.5 | 16 | 12 | 25 | - | 0.1 to 2 | 3.3 | TQFN-13 (3x3) |

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage 1.5V ≤ $V_{IN}$ ≤ 6V

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | 100% Duty Cycle | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP28200** | 2 | 5.5 | 0.2 | 0.5 | - | 1.5 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-12 (2x2) | Ultra-low $I_Q$ |
| S **MP28310** | 2 | 5.5 | 0.3 | 0.5 | - | 1.5 | ✓ | - | ✓ | ✓ | ✓ | - | CSP-12 (1.2x1.6) | Ultra-low 500nA $I_Q$, ultra-small package, 300mA buck + 100mA LDO, prog. $V_{OUT}$ by CTRL, COT, PG, functionally equivalent to TPS62743 |
| **MP21600** | 2.3 | 5.5 | 0.6 | 11 | 0.6 | 2.4 | - | - | ✓ | ✓ | ✓ | - | QFN-6 (1x1.5) | High switching freq., ultra-small package |
| **MP28301** | 2 | 5.5 | 0.7 | 0.5 | 0.6 | 1.5 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-12 (2x2) | Ultra-low 500nA $I_Q$, 700mA buck + 100mA LDO, prog. $V_{OUT}$ by CTRL, COT, PG |
| S **MP28210** | 2 | 5.5 | 1 | 0.5 | - | 1.5 | ✓ | - | ✓ | ✓ | ✓ | - | CSP-12 (1.2x1.6) | Ultra-low 500nA $I_Q$, ultra-small package, prog. $V_{OUT}$ by CTRL, COT, PG |
| **MP2141N** | 2.3 | 5.5 | 1 | 11 | 0.6 | 2.2 | ✓ | - | ✓ | ✓ | ✓ | - | SOT563 (1.6x1.6) | Output discharge, power good only for fixed $V_{OUT}$ version |
| **MP2148** | 2.3 | 5.5 | 1 | 10 | 0.6 | 2.2 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-6 (1x1.5) | High switching freq., ultra-small package |

N - New Product  S - Sampling Product

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage 1.5V ≤ $V_{IN}$ ≤ 6V

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | 100% Duty Cycle | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MP21148** | 2.3 | 5.5 | 1 | 500 | 0.6 | 2.4 | ✓ | - | - | ✓ | ✓ | - | QFN-6 (1x1.5) | Forced CCM, low ripple across entire load range |
| | **MP2149** | 2.7 | 6 | 1 (2x) | 45 | 0.608 | 1 | - | - | ✓ | - | - | - | TSOT23-8 | Dual-channel |
| | **MP2151** | 2.5 | 5.5 | 1 | 25 | 0.6 | 1.1 | ✓ | - | ✓ | ✓ | ✓ | - | SOT563 (1.6x1.6), UTQFN (1.2x1.6) | 1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions |
| N | **MP2181** | 2.5 | 5.5 | 1 | 21 | 0.6 | 1.2 | ✓ | - | ✓ | ✓ | ✓ | - | SOT583 (1.6x2.1) | 1% $V_{FB}$ accuracy, output discharge, ext. soft start |
| | **MP2141Q** | 2.3 | 5.5 | 1.5 | 20 | - | 2.2 | - | - | ✓ | ✓ | ✓ | - | SOT563 (1.6x1.6) | Fixed 0.61V/1.8V output voltage, output discharge, VSEL for PFM/PWM |
| | **MP2152** | 2.5 | 5.5 | 2 | 25 | 0.6 | 1.1 | ✓ | - | ✓ | ✓ | ✓ | - | SOT563 (1.6x1.6), UTQFN (1.2x1.6) | 1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions |
| N | **MP2172C** | 2.38 | 5.5 | 2 | 450 | 0.6 | 1.1 | - | - | - | ✓ | ✓ | - | UTQFN (1.2x1.6) | Forced CCM, 1% $V_{FB}$ accuracy, output discharge |
| N | **MP2182** | 2.5 | 5.5 | 2 | 21 | 0.6 | 1.2 | ✓ | - | ✓ | ✓ | ✓ | - | SOT583 (1.6x2.1) | 1% $V_{FB}$ accuracy, output discharge, ext. soft start |
| S | **MP2192C** | 2.5 | 5.5 | 2 | 25 | 0.6 | 1.1 | - | - | - | ✓ | ✓ | - | WLCSP-6 (1.23x0.86) | Forced CCM, 1% $V_{FB}$ accuracy, fast output discharge, P2P with the MP2193 |
| | **MP2122** | 2.7 | 6 | 2 (2x) | 45 | 0.608 | 1 | - | - | ✓ | - | ✓ | ✓ | TSOT23-8 | Dual-channel |
| | **MP2166 MPQ2166** | 2.7 | 6 | 2 (2x) | 60 | 0.6 | 3 | ✓ | - | ✓ | - | ✓ | ✓ | QFN-18 (2x3), QFN-18 (2.5x3.5) | Dual-channel, external soft start |
| | **MP2153** | 2.5 | 5.5 | 3 | 25 | 0.6 | 1.1 | ✓ | - | ✓ | ✓ | ✓ | - | SOT563 (1.6x1.6), UTQFN (1.2x1.6) | 1% $V_{FB}$ accuracy, output discharge, adjustable and fixed $V_{OUT}$ versions |
| S | **MP2193** | 2.5 | 5.5 | 3 | 25 | 0.6 | 1.1 | ✓ | - | ✓ | ✓ | ✓ | - | WLCSP-6 (1.23x0.86) | |
| N | **MP2164** | 2.5 | 5.5 | 3 | 50 | 0.6 | 2.3 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-12 (2x2) | Forced PWM and auto-PFM option, stable with low-ESR output ceramic capacitors |
| | **MP8843** | 2.6 | 6 | 3 | 60 | 0.6 | 1 to 2 | ✓ | - | ✓ | ✓ | - | - | QFN-12 (2x2) | I²C interface, prog. $V_{OUT}$, power-save mode |
| N | **MP2183** | 2.5 | 5.5 | 3 | 21 | 0.6 | 1.2 | ✓ | ✓ | ✓ | ✓ | ✓ | - | SOT583 (1.6x2.1) | 1% $V_{FB}$ accuracy, output discharge |
| | **MP2188** | 2.5 | 5.5 | 3 (2x) | 80 | 0.6 | 1.2 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-16 (2.2x2.6) | Dual-output, output discharge |
| | **MP2131** | 2.7 | 5.5 | 4 | 19 | 0.6 | 1.2 | ✓ | - | ✓ | ✓ | ✓ | - | QFN-12 (2x2) | Output discharge, high efficiency |
| N | **MP2184** | 2.5 | 5.5 | 4 | 21 | 0.6 | 1.2 | ✓ | ✓ | ✓ | ✓ | ✓ | - | SOT583 (1.6x2.1) | 1% $V_{FB}$ accuracy, output discharge |
| | **MP2145** | 2.8 | 5.5 | 6 | 40 | 0.6 | 1.2 | ✓ | - | ✓ | ✓ | - | - | QFN-12 (2x3) | Output discharge, PWM/PFM mode, and dynamic voltage scaling |
| | **MPQ8616-6** | 1.5 | 6 | 6 | 1050 | 0.61 | Prog | ✓ | ✓ | - | ✓ | - | ✓ | QFN-14 (3x4) | CCM, non-latch OVP, and OCP |
| | **MP8847** | 2.7 | 6 | 6 | 300 | 0.6 | 0.85 to 2.2 | ✓ | - | ✓ | - | - | - | QFN-14 (2x3) | I²C interface, prog. $V_{OUT}$, power-save mode |
| N | **MP8770C** | 3 | 17 | 8 | 100 | 0.6 | 0.7 | ✓ | ✓ | - | ✓ | - | - | QFN-16 (3x3) | Forced CCM, wide $V_{IN}$ range, fast load transient response |
| | **MP8771** | 3 | 17 | 10 | 100 | 0.6 | 0.7 | ✓ | ✓ | ✓ | ✓ | - | - | QFN-16 (3x3) | Fast load transient response, SCP, UVP, OCP, and hiccup mode |

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage 1.5V ≤ $V_{IN}$ ≤ 6V

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (μA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | 100% Duty Cycle | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ8616-12** | 1.5 | 6 | 12 | 1050 | 0.61 | Prog | ✓ | ✓ | - | ✓ | - | ✓ | QFN-14 (3x4) | CCM, non-latch OVP, OCP |
| **MP8774** | 3 | 18 | 12 | 100 | 0.6 | 0.7 | ✓ | ✓ | ✓ | ✓ | - | - | QFN-16 (3x3) | Wide $V_{IN}$ range, fast load transient response, SCP, UVP, OCP, hiccup |
| N **MP8774H** | 3 | 18 | 12 | 100 | 0.6 | 1.4 | ✓ | ✓ | ✓ | ✓ | - | - | QFN-16 (3x3) | |
| **MPQ8612-16** | 1.5 | 6 | 16 | 1000 | 0.61 | Prog | ✓ | ✓ | ✓ | ✓ | - | ✓ | QFN-17 (4x4) | DCM, non-latch OVP, OCP |
| **MPQ8612-20** | 1.5 | 6 | 20 | 1000 | 0.61 | Prog | ✓ | ✓ | ✓ | ✓ | - | ✓ | QFN-17 (4x4) | |

## Step-Down Converters (Buck) — Maximum Operating Input Voltage ≤ 28V

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP1479** | 4.2 | 18 | 1 | 0.19 | 0.805 | 0.8 | - | - | ✓ | ✓ | SOT563 (1.6x1.6) | Low UVLO |
| **MP2313** | 4.5 | 24 | 1 | 0.2 | 0.8 | 2 | - | - | ✓ | - | TSOT23-8 | High frequency, light-load mode (AAM pin) |
| **MP2388** | 4.5 | 21 | 1 | 0.2 | 0.798 | 2 | - | - | ✓ | - | QFN-8 (1.5x2.5) | Small package, ultra-thin profile option |
| **MP2317** | 7.5 | 26 | 1 | 0.15 | 0.791 | 0.6 | - | - | ✓ | - | TSOT23-6 | Low current limit version of MP2314, optimized EMI |
| **MP2322** | 3 | 22 | 1 | 0.005 | 0.6 | 1.25 | ✓ | - | ✓ | ✓ | QFN-8 (1.5x2) | Ultra-low $I_Q$, small package, output discharge |
| **MP1476** | 4.2 | 18 | 2 | 0.19 | 0.805 | 0.8 | - | - | ✓ | ✓ | SOT563 (1.6x1.6) | Fast load transient response, OCP, and hiccup |
| **MP2318** | 4.5 | 24 | 2 | 0.2 | 0.8 | 2 | - | - | ✓ | - | TSOT23-8 | High frequency, light-load mode (AAM pin) |
| **MPQ2314** | 4.5 | 24 | 2 | 0.18 | 0.791 | 0.5 | - | - | ✓ | ✓ | TSOT23-8 | AAM power-save mode, industrial grade |
| N **MP2332H** | 4.2 | 18 | 2 | 0.2 | 0.805 | 1.2 | ✓ | ✓ | - | ✓ | SOT583 (1.6x2.1) | High frequency, forced CCM, good regulation, SCP/OVP/UVP function |
| **MP2321** | 4 | 19 | 2 | 0.04 | 0.6 | Prog | ✓ | ✓ | ✓ | - | QFN-14 (2x3) | Forced PWM or auto-PFM/PWM mode selectable, 100% duty cycle |
| **MP2392** | 4.2 | 24 | 2 | 0.2 | 0.805 | 0.65 | ✓ | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | Good regulation, SCP/OVP/UVP function |
| N **MP2331H** | 4.2 | 24 | 2 | 0.2 | 0.805 | 1.2 | ✓ | ✓ | - | ✓ | SOT583 (1.6x2.1) | High frequency, forced CCM, good regulation, SCP/OVP/UVP function |
| N **MP2344** | 7.5 | 26 | 2 | 0.17 | 0.791 | 0.6 | - | - | ✓ | - | TSOT23-6 | P2P with MP2317/MP2345, optimized EMI |
| N **MP2345** | 7.5 | 26 | 2.5 | 0.17 | 0.791 | 0.6 | - | - | ✓ | - | TSOT23-6 | P2P with MP2317/MP2344, optimized EMI |
| **MP2393** | 4.2 | 24 | 3 | 0.2 | 0.805 | 0.65 | ✓ | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | Good regulation, SCP/OVP/UVP function |
| N **MP2333H** | 4.2 | 18 | 3 | 0.2 | 0.805 | 1.2 | ✓ | ✓ | - | ✓ | SOT583 (1.6x2.1) | High frequency, forced CCM, good regulation, SCP/OVP/UVP function |
| **MP2330H** | 4.2 | 24 | 3 | 0.2 | 0.805 | 1.2 | ✓ | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | High frequency, good regulation, SCP/OVP/UVP function |
| **MP1477** | 4.2 | 17 | 3 | 0.2 | 0.805 | 0.8 | - | - | ✓ | ✓ | SOT-563 (1.6x1.6) | Fast load transient response, OCP, and hiccup |
| **MP1477H** | 4.2 | 17 | 3 | 0.2 | 0.805 | 1.2 | - | - | ✓ | ✓ | SOT563 (1.6x1.6) | High frequency |



N - New Product S - Sampling Product

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage ≤ 28V

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MP2223** | 4.5 | 18 | 3/2 | 1 | 0.8 | 0.54 | - | - | ✓ | - | TSOT23-8 | Dual 3A/2A buck, 180° out-of-phase operation |
| N | **MP2348** | 4.2 | 24 | 4 | 0.2 | 0.802 | 0.65 | - | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | Forced PWM, auto-PFM/PWM and ultrasonic mode selectable |
| N | **MP8854** | 2.85 | 18 | 4 | 0.42 | 0.72 | 0.5 to 1.25 | ✓ | ✓ | ✓ | ✓ | QFN-14 (3x4) | I²C prog. FB range, integrated telemetry, accurate output voltage/current, readback via I²C |
| | **MP8864** | 4.5 | 21 | 4 | 0.5 | 0.6 | 1.6 | ✓ | ✓ | ✓ | - | QFN-15 (3x3) | I²C interface, prog. $V_{OUT}$, power-save mode |
| N | **MPQ8626** | 4 | 16 | 6 | 0.65 | 0.6 | 0.6/1.1/2.2 | ✓ | - | ✓ | ✓ | QFN-14 (2x3) | Prog. current limit, proprietary switching loss reduction, pre-biased start-up, stable with zero-ESR output capacitor, excellent load regulation |
| S | **MP2349** | 4.5 | 24 | 6.5 | 0.105 | 0.6 | 0.7 | - | - | ✓ | ✓ | QFN-11 (2X2) | 7.5A peak, DC auto-tune loop, proprietary switching loss reduction technique, forced PWM, auto-PFM/PWM and ultrasonic mode selectable |
| N | **MPQ8633A** | 4 | 16 | 16 | 0.65 | 0.6 | 0.6/0.8/1 | ✓ | - | ✓ | ✓ | QFN-21 (3x 4) | Prog. current limit, programmable frequency, voltage tracking, proprietary switching loss reduction, pre-biased start-up, stable with zero-ESR output capacitor, excellent load regulation |
| N | **MPQ8633B** | 4 | 16 | 20 | 0.65 | 0.6 | 0.6/0.8/1 | ✓ | - | ✓ | ✓ | QFN-21 (3x 4) | |
| N | **MPQ8634A** | 4 | 16 | 12 | 0.65 | 0.9 | 0.6/0.8/1 | ✓ | - | ✓ | ✓ | QFN-21 (3x 4) | |
| N | **MPQ8634B** | 4 | 16 | 20 | 0.65 | 0.9 | 0.6/0.8/1 | ✓ | - | ✓ | ✓ | QFN-21 (3x 4) | |
| N | **MPQ8645P** | 4 | 16 | 30 | 2.5 | 0.6 | 0.4/0.6/0.8/1 | ✓ | - | ✓ | ✓ | TQFN-25 (4x5) | Scalable multi-phase operation, output voltage, true remote sense, programmable output voltage, programmable current limit, programmable frequency, PMBus interface |
| S | **MP2328** | 4.2 | 28 | 2 | 0.16 | 0.5 | 0.43 | ✓ | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | High-efficiency, for white goods |
| S | **MP2338** | 4.2 | 28 | 3 | 0.16 | 0.5 | 0.43 | ✓ | ✓ | ✓ | ✓ | SOT583 (1.6x2.1) | |
| | **MP2316** | 4 | 19 | 3 | 0.04 | 0.6 | Prog | ✓ | ✓ | ✓ | ✓ | QFN-14 (2x3) | High efficiency, 100% duty cycle |
| | **MP2326** | 3.9 | 19 | 4 | 0.04 | 0.6 | Prog | ✓ | ✓ | ✓ | ✓ | QFN-14 (2x3) | Selectable PFM/PWM mode, 100% duty cycle |
| | **MP8715** | 4.5 | 21 | 4 | 0.66 | 0.805 | 0.5 | ✓ | ✓ | - | - | QFN-14 (3x4), SOIC-8E | 100% duty cycle, ext. frequency sync |
| | **MP1499** | 4.5 | 16 | 4 | 0.6 | 0.807 | 0.5 | - | ✓ | ✓ | - | QFN-10 (2x3) | Ext. frequency sync |
| | **MP2384** | 4.5 | 24 | 4 | 0.105 | 0.6 | 0.7 | ✓ | - | ✓ | ✓ | QFN-11 (2x2) | Output discharge, OCP, OVP, UVP, ther. shutdown with auto-retry, P2P with MP2329/MP2386 |
| | **MP2225** | 4.5 | 18 | 5 | 0.32 | 0.6 | 0.5 | - | - | ✓ | - | TSOT23-8 | High-efficiency, 5A peak, ext. frequency sync |
| | **MPQ8623** | 4 | 16 | 6 | 0.65 | 0.9 | 0.6/1.1/2.2 | ✓ | - | ✓ | ✓ | QFN-14 (2x3) | Prog. current limit, prop switching loss reduction, pre-biased start-up, stable w/ zero-ESR output cap, excellent load regulation |
| | **MP8861** | 2.85 | 18 | 6 | 0.42 | 0.72 | 0.5 to 1.25 | ✓ | ✓ | ✓ | ✓ | QFN-14 (3x4) | I²C prog. FB range, integrated telemetry, accurate output voltage/current, readback via I²C |
| | **MP2236** | 3 | 18 | 6 | 0.15 | 0.6 | 0.6 | - | - | ✓ | ✓ | TSOT23-8 | Pin-to-pin with MP2225 |
| | **MP2229** | 4.5 | 21 | 6 | 0.4 | 0.6 | Prog | - | ✓ | ✓ | - | QFN-14 (3x3) | Current mode, external frequency sync |
| | **MP8865** | 4.5 | 21 | 6 | 0.5 | 0.6 | 1.6 | ✓ | ✓ | ✓ | - | QFN-15 (3x3) | I²C interface, prog. $V_{OUT}$, power-save mode |
| | **MP2329** | 4.5 | 24 | 6.5 | 0.105 | 0.6 | 0.7 | ✓ | - | ✓ | ✓ | QFN-11 (2x2) | Output dis., OCP, OVP, UVP, thermal shutdown with auto-retry, P2P with MP2384/MP2386 |

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage ≤ 28V

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Constant-On-Time (COT) | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ8636-4** | 4.5 | 18 | 4 | 0.86 | 0.611 | Prog | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | CCM, non-latch OVP, prop. switching loss red., pre-biased start-up, stable w/ zero-ESR output capacitor |
| **MP2329C** | 4.5 | 24 | 6.5 | 0.105 | 0.6 | 0.7 | ✓ | - | | ✓ | - | QFN-11 (2x2) | Forced CCM version of MP2329 |
| **MP2386** | 4.5 | 24 | 8 | 0.105 | 0.6 | 0.7 | ✓ | - | ✓ | ✓ | - | QFN-11 (2x2) | Output dis., OCP, OVP, UVP, thermal shutdown with auto-retry, P2P with MP2384/MP2329 |
| **MP2276** | 2.7 | 16 | 8 | 0.6 | 0.8 | 0.6/1.1/2 | ✓ | ✓ | ✓ | ✓ | - | QFN-14 (2x3) | Prog. current limit, selectable mode of op. forced CCM or pulse-skip op. at light load |
| **MP8770** | 4.5 | 17 | 8 | 0.1 | 0.6 | 0.7 | ✓ | ✓ | ✓ | ✓ | - | QFN-16 (3x3) | Fast load transient response, SCP, UVP, OCP, and hiccup |
| N **MP8770C** | 3 | 17 | 8 | 0.1 | 0.6 | 0.7 | ✓ | ✓ | - | ✓ | - | QFN-16 (3x3) | Forced CCM, wide $V_{IN}$ range, fast load transient response |
| **MP8867** | 4.5 | 17 | 8 | 0.56 | 0.6 | 1.5 | ✓ | ✓ | ✓ | - | - | QFN-14 (3x4) | $I^2C$ interface, prog. $V_{OUT}$, power-save mode |
| **MP8759** | 4.5 | 26 | 8 | 0.117 | 0.6 | 0.7 | ✓ | - | ✓ | ✓ | - | QFN-12 (2x3) | USM, PFM/PWM selection, hiccup mode OCP and UVP, output discharge |
| N **MP2238** | 4.2 | 18 | 8 | 0.15 | 0.6 | 0.6 | - | - | ✓ | ✓ | - | QFN-12 (2x3) | 1% $V_{FB}$ accuracy, hiccup OCP |
| **MP8771** | 4.5 | 17 | 10 | 0.1 | 0.6 | 0.7 | ✓ | ✓ | ✓ | ✓ | - | QFN-16 (3x3) | Fast load transient response, SCP, UVP, OCP, and hiccup |
| **MPQ8636A-10** | 4.5 | 18 | 10 | 0.86 | 0.611 | Prog | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | CCM, latch-off OVP/OCP |
| **MP8758H** | 4.5 | 22 | 10 | 0.19 | 0.604 | 0.5 | ✓ | - | ✓ | ✓ | - | QFN-21 (3x4) | Thermal auto-retry, hiccup mode OCP and UVP, PFM/PWM mode |
| **MP8714** | 4.5 | 17 | 10 | 0.56 | 0.6 | Prog | ✓ | ✓ | ✓ | - | - | QFN-14 (3x4) | External frequency sync, current mode |
| **MP8868** | 4.5 | 17 | 10 | 0.56 | 0.6 | 1.5 | ✓ | ✓ | ✓ | - | - | QFN-14 (3x4) | $I^2C$ interface, prog., $V_{OUT}$, power-save mode |
| **MP8720** | 4.5 | 26 | 10 | 0.14 | 0.6 | 0.7 | ✓ | - | ✓ | ✓ | - | QFN-16 (3x3) | Output discharge, adjustable current limit, forced CCM or PSM selection, over-current limit, latch-off reset |
| **MP8774** | 3 | 18 | 12 | 0.1 | 0.6 | 0.7 | ✓ | ✓ | ✓ | ✓ | - | QFN-16 (3x3) | Wide VIN range, fast load transient response, SCP, UVP, OCP, and hiccup |
| N **MP8774H** | 3 | 18 | 12 | 0.1 | 0.6 | 1.4 | ✓ | ✓ | ✓ | ✓ | - | QFN-16 (3x3) | |
| **MP8869S** | 2.85 | 18 | 12 | 0.42 | 0.72 | 0.5 to 1.25 | ✓ | ✓ | ✓ | ✓ | - | QFN-14 (3x4) | $V_{OUT}$ adjustable up to 5.5V with FB pin, integrated telemetry, accurate output voltage/ current, readback via $I^2C$ |
| **MP8719** | 4.5 | 26 | 12 | 0.85 | 0.6 | 0.5/0.7 | ✓ | - | - | ✓ | - | QFN-16 (3x3) | Output discharge, USM, buck converter with ±1A LDO and buffered reference |
| **MPQ8636H-20** | 4.5 | 18 | 20 | 1 | 0.611 | Prog | ✓ | ✓ | - | - | ✓ | QFN-29 (5x4) | CCM, hiccup OVP |
| S **MP8796** | 4 | 16 | 30 | 0.7 | 0.6 | Prog | ✓ | ✓ | ✓ | ✓ | - | TQFN-25 (4x5) | Prog. current limit, scalable multi-phase operation, remote sense, selection of hiccup or latch-off for OCP, OVP, and OTP |
| S **MP8796B** | 4 | 16 | 30 | 2.5 | 0.6 | Prog | ✓ | - | - | ✓ | - | TQFN-25 (4x5) | Digital with PMBus |



N - New Product S - Sampling Product

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage < 55V

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Sync Rectifier | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MP4410** | 4.5 | 36 | **0.1** | 0.02 | 1 | Prog | ✓ | - | - | ✓ | - | QFN-10 (3x3) | Low $I_Q$ |
| | **MP4568** | 4.5 | 45 | **0.1** | 0.02 | 1 | Prog | - | ✓ | - | ✓ | ✓ | QFN-10 (3x3) | Programmable peak-current limit |
| | **MPQ2459** | 4.5 | 55 | **0.5** | 0.73 | 0.812 | 480 | - | - | - | - | ✓ | TSOT23-6 | Built-in power MOSFET |
| | **MPQ2456** | 4.5 | 50 | **0.5** | 0.73 | 0.85 | 1200 | - | - | ✓ | - | ✓ | TSOT23-6 | OCP |
| | **MP4566** | 4.5 | 36 | **0.6** | 0.035 | 1 | 1000 | - | - | ✓ | - | - | QFN-8 (2x3) | - |
| | **MPQ2451** | 3.3 | 36 | **0.6** | 0.13 | 0.794 | 2000 | - | - | ✓ | - | ✓ | TSOT23-6L, QFN-6L | - |
| | **MP2454** | 3.3 | 36 | **0.6** | 0.06 | 0.8 | 2300 | ✓ | ✓ | - | - | ✓ | QFN-10 (3x3) | Ext. frequency sync |
| N | **MP2457** | 5 | 36 | **0.6** | 0.065 | 0.8 | 2000 | - | - | ✓ | - | ✓ | TSOT23-6 | Power meters only |
| | **MPQ4458** | 3.8 | 36 | **1** | 0.12 | 0.8 | Prog | - | - | ✓ | - | - | TQFN-10 (3x3) | Integrated high-side MOSFET |
| | **MPQ4558** | 3.8 | 55 | **1** | 0.14 | 0.8 | Prog | - | | ✓ | - | ✓ | QFN-10 (3x3), SOIC-8E | Current-mode control |
| N | **MP4431 MPQ4431** | 3.3 | 36 | **1** | 0.01 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-16 (3x4) | Selectable forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode |
| | **MP2269** | 3.3 | 30 | **1** | 0.012 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | - | QFN-15 (2x3) | Current-mode control, low $I_Q$, forced PWM and auto-PFM/PWM selection, low-dropout mode |
| | **MPQ4459** | 3.8 | 36 | **1.5** | 0.12 | 0.8 | Prog | - | - | ✓ | - | ✓ | TQFN-10 (3x3) | Current-mode control |
| | **MPQ2490** | 4.5 | 36 | **1.5** | 0.5 | 0.805 | 700 | ✓ | ✓ | - | - | ✓ | SOIC-8 | Prog. output-current limit |
| | **MPQ4561** | 3.8 | 55 | **1.5** | 0.14 | 0.795 | Prog | - | ✓ | ✓ | - | - | QFN-10 (3x3) | Internal high-side MOSFET |
| N | **MP4425M MPQ4425M** | 4 | 36 | **1.5** | 0.6 | 0.2 | 2200 | - | - | - | - | ✓ | QFN-13 (2.5x3) | PWM dimming and OCP/SCP protection, external frequency sync |
| | **MP9942 MP9942A** | 4 | 36 | **2** | 0.5 | 0.792 | 410 | ✓ | - | ✓ | ✓ | - | TSOT23-8 | Forced CCM, consumer grade, external frequency sync |
| | **MP4420H MPQ4420H** | 4 | 36 | **2** | 0.5 | 0.792 | 410 | ✓ | - | - | ✓ | ✓ | TSOT23-8 | External frequency sync |
| | **MPQ4560** | 3.8 | 55 | **2** | 0.14 | 0.797 | Prog | - | - | ✓ | - | ✓ | QFN-10 (3x3), SOIC-8E | AEC-Q100 qualified |
| | **MP2499** | 4.5 | 55 | **2** | 0.5 | 0.8 | 100 | - | ✓ | - | - | - | SOIC-16 | Programmable output current |
| N | **MP4432 MPQ4432** | 3.3 | 36 | **2.2** | 0.01 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-16 (3x4) | Selectable forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode |
| | **MPQ4460** | 3.8 | 36 | **2.5** | 0.12 | 0.8 | Prog | - | - | ✓ | - | - | QFN-10 (3x3) | Prog. output current |
| | **MP2560** | 4.5 | 42 | **2.5** | 0.12 | 0.8 | Prog | - | - | ✓ | - | - | QFN-10 (3x3), SOIC-8E | Current-mode control |
| | **MP2565** | 4.5 | 50 | **2.5** | 0.12 | 0.8 | Prog | - | - | ✓ | - | - | QFN-10 (3x3), SOIC-8E | Integrated internal high-side |
| | **MP2496** | 7 | 36 | **2.5** | 1.6 | - | 350/250/150 | - | - | - | - | - | QFN-26 (4x4) | Integrated smart USB charging port, auto-detect, cable compensation |
| | **MP2499A** | 5 | 36 | **3** | 0.7 | 0.792 | Prog | - | - | ✓ | ✓ | - | QFN-13 (2.5x3) | Current-mode control, ext. frequency sync, output line drop compensation |

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Converters (Buck) — Maximum Operating Input Voltage < 55V

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (kHz) | Power Good | External Soft Start | Light-Load Efficiency | Sync Rectifier | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MP4423H MPQ4423H** | 4 | 36 | 3 | 0.5 | 0.79 | 410 | ✓ | - | - | ✓ | ✓ | QFN-8 (3x3) | External frequency sync |
| | **MP9943/A** | 4 | 36 | 3 | 0.5 | 0.79 | 410 | ✓ | - | ✓ | ✓ | - | QFN-8 (3x3) | Consumer grade, 36V max, ext. frequency sync |
| N | **MP4433 MPQ4433** | 3.3 | 36 | 3 | 0.01 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-16 (3x4) | Sel. forced CCM or AAM, prog. soft-start time, good EMI, and low-dropout mode |
| | **MP4570 MPQ4570** | 4.5 | 55 | 3 | 0.45 | 1 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | TSSOP-20EP | External frequency sync |
| | **MP2263** | 3.3 | 30 | 3 | 0.012 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | - | QFN-15 (2x3) | Current mode control, low $I_Q$, forced PWM & auto-PFM/PWM selection, low-dropout mode |
| S | **MP8883 MPQ8883** | 3.5 | 45 | 3 | 0.6 | - | Prog | ✓ | - | ✓ | ✓ | ✓ | QFN-16 (3x3) | Current mode, $I^2C$ interface, OTP, external frequency sync |
| | **MP4462 MPQ4462** | 3.8 | 36 | 3.5 | 0.12 | 0.792 | Prog | - | - | - | ✓ | ✓ | QFN-10 (3x3), SOIC-8E | AEC-Q100 qualified |
| | **MP4473** | 4.5 | 36 | 3.5 | 0.5 | 0.815 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-20 (3x4) | High frequency |
| | **MP4430 MPQ4430** | 3.3 | 36 | 3.5 | 0.01 | 0.8 | Prog | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-16 (3x4) | Selectable forced CCM or AAM, programmable soft-start time, good EMI, low-dropout mode |
| N | **MP2491C** | 4 | 32 | 6 | 0.45 | 0.5 | 490 | ✓ | - | ✓ | ✓ | - | QFN-13 (2.5x3) | Adjustable current limit, $V_{OUT}$ scaling control |
| | **MP8675** | 4.5 | 42 | 6 | 0.9 | 0.808 | 420 | - | - | - | ✓ | - | SOIC-8E | Synchronizable gate driver, ext. frequency sync |
| S | **MPQ8886 MP8886** | 4 | 45 | 3 x 2 | 0.012 | 0.6 | 600 | ✓ | - | - | ✓ | - | QFN-26 (5x5) | Dual 3A/single 6A digital prog. synchronous buck regulator, AEC-Q100 qualified |

## Step-Down Converters (Buck) — Maximum Operating Input Voltage < 100V

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (kHz) | Power Good | External Soft Start | Light-Load Efficiency | Sync Rectifier | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MP4569** | 4.5 | 75 | 0.3 | 0.02 | 1 | 1000 | ✓ | ✓ | - | ✓ | ✓ | QFN-10 (3x3), SOIC-8E | Integrated high-side/low-side |
| | **MP2420** | 4.5 | 75 | 0.3 | 0.02 | 1 | Prog | ✓ | ✓ | - | ✓ | ✓ | TSSOP-16 | Watchdog |
| S | **MP4541** | 10 | 80 | 0.8 | 0.015 | 1 | Prog | - | - | ✓ | ✓ | - | SOIC8-EP | High efficiency at light load |
| S | **MP5423** | 25 | 100 | 0.3 | - | - | 200 | - | - | ✓ | ✓ | - | SOIC8-EP | 650mA current limit, 5V LDO, 3.3V LDO |
| S | **MP4581** | 10 | 100 | 0.8 | 0.015 | 1 | Prog | - | - | ✓ | ✓ | - | SOIC-8EP | High efficiency at light load |
| S | **MPQ8880 MP8880** | 3.5 | 60 | 4 | - | - | 200 to 2500 | ✓ | - | - | ✓ | - | QFN (4x5) | Digital prog. sync, AEC-Q100 qualified |



N - New Product S - Sampling Product

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Down Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_Q$ (Typ) (mA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Soft Start | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP2910** | 5 | 12 | 0.6 | 0.8 | 300 | Int | SOIC-14, SOIC-8E | Synchronous PWM DC/DC linear, specific power good indicator for Intel, Grantsdale FSB_VTT power sequence |
| **MP2905** | 3 | 28 | 0.6 | 0.6 | Adj 200 to 500 | Ext | MSOP-10 | Ideal for applications greater than 15A |
| **MP2908A** | 4 | 60 | 0.75 | 0.8 | Adj 100 to 1000 | Ext | TSSOP-20EP, QFN-20 (3x4) | Industrial grade, power good, programmable CCM, AAM, pulse-skipping mode |

## Step-Up Charge Pumps

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | Industrial | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP9361** | 2.8 | 5 | 0.11 | 2 | 1350 | ✓ | TSOT23-6 | Fixed $5V_{OUT}$, high performance, regulated, internal soft start, OCP, SCP, inrush current limit |
| **MP9218** | 2.8 | 5 | 0.11 | 2 | 1350 | - | QFN-6 (2x2) | Fixed $5V_{OUT}$, high performance, regulated |

## Step-Up Contollers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (A) | $f_{SW}$ (kHz) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | Soft Start | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP3910** | 5 | 35 | 1 | Adj 30 to 400 | 0.288 | 1.237 | Ext | MSOP-10 | Supports pulse-skipping mode at light-load, 0.95 max duty cycle |
| **MP3910A** | 9 | 14 | 1 | Adj 30 to 400 | 0.288 | 1.237 | Ext | SOIC-8E | |
| **MP6002** | 10 | 100 | 3 | 550 | 1 | 1.21 | Int | SOIC-8E | Flyback/forward DC/DC converter, 30W, integrated 150V power switch |
| **MP6001** | 10 | 100 | 2 | 550 | 1 | 1.21 | Int | SOIC-8E | Flyback/forward DC/DC converter, 15W, integrated 150V power switch |
| **MP6003** | 10 | 100 | - | 550 | 1 | 1.21 | Int | SOIC-8E | Monolithic flyback/sepic DC/DC converter |

## Step-Up Converters (Boost)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (mA) | $V_{OUT}$ Range (V) | $f_{SW}$ (kHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP3209** | 2.5 | 6 | **0.35** | 0.64 | 3 to 22 | 1400 | TSOT23-5, UTQFN-8 (2x2) | Int. compensation, tiny inductors and capacitors (+J168:J192) can be used |
| **MP3217** | 2.5 | 6 | **0.5** | 0.46 | $V_{IN}$ to 36 | 670 | TSOT23-6 | Cycle-by-cycle OCP, UVLO, thermal shutdown, P2P with MAX5025-5028 |
| **MP1400** | 2.7 | 7 | **0.6** | 0.2 | -0.9 to -6 | 1500 | CSP-8 (0.8x1.6) | Output adj. from -0.9V to -6V, very small size |
| **MP5418** | 2.3 | 5 | **0.2** | 0.22 | 0V to $-V_{IN}$ | 30 to 550 | QFN-10 (1.8x1.4) | Dual output, negative charge pump, adjustable regulator |
| **MP3416** | 0.8 | 5.5 | **1** | 0.009 | 1.8 to 5.5 | 1500 | TSOT23-8, QFN-8 (1.5x2.2) | Output disconnect, down mode, sync |
| **MP3120** | 0.8 | 5 | **1.2** | 0.47 | 2.5 to 5 | 1100 | TSOT23-6 | Output disconnect, LDO mode, sync |
| **MP3430** | 2.7 | 5.5 | **1.2** | 0.3 | 2.7 to 90 | 1300 | QFN-16 (3x3) | APD current monitoring (1:10 or 1:2 ratio) with 5% accuracy and 50ns response time, prog. APD current limit and protection, int. comp. and soft start |

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Up Converters (Boost)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (mA) | $V_{OUT}$ Range (V) | $f_{SW}$ (kHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP3410** | 1.8 | 6 | **1.3** | 0.36 | 2.5 to 6 | 550 | TSOT23-5 | Output disconnect, sync |
| **MP3414** | 0.6 | 4 | **1.8** | 0.035 | 1.8 to 4 | 1000 | TSOT23-8 | Output disconnect, sync |
| **MP1541** | 2.5 | 6 | **1.9** | 0.64 | 3 to 22 | 1300 | TSOT23-5 | Internal current limit |
| **MP1542** | 2.5 | 22 | **2.6** | 0.7 | 3 to 22 | 700/1300 | MSOP-8 | Prog. soft start |
| **MP3414A** | 1.8 | 5.5 | **3** | 0.022 | 1.908 to 5.5 | 1000 | TSOT23-8 | Wider input version of MP3414, sync |
| **MP3213** | 2.5 | 22 | **3.5** | 0.7 | 3 to 22 | 700/1300 | MSOP-8E | Prog. soft start |
| **MP1530** | 2.7 | 5.5 | **3.6** | 1.3 | 2.7 to 22 | 1400 | QFN-16 (3x3), TSSOP-16 | Triple output charge pump, LDO for TFT bias |
| **MPQ1530** | 2.7 | 5.5 | **3.6** | 1.3 | 2.7 to 22 | 1400 | QFN-16 (3x3) | Triple output charge pump, LDO for TFT bias, industrial grade |
| **MP3415** | 1.8 | 5.5 | **4.2** | 0.022 | 1.98 to 5.5 | 1000 | QFN-12 (2x2) | Output disconnect, sync |
| **MP3425** | 3.1 | 22 | **5** | 0.65 | 3.1 to 55 | Prog 300 to 2000 | QFN-14 (3x4) | Prog. UVLO and EN hysteresis, industrial grade |
| **MP3421** | 1.9 | 5.5 | **5.5** | 0.043 | 2.5 to 5.5 | 600 | QFN-14 (2x2) | Output disconnect, sync |
| **MP3422** | 1.9 | 5.5 | **6.5** | 0.043 | 2.5 to 5.5 | 600 | QFN-14 (3x4) | Output disconnect, sync |
| **MP3426** | 3.2 | 22 | **8.5** | 0.65 | 3.2 to 35 | Prog 300 to 2000 | QFN-14 (3x4) | Prog. UVLO, soft start, UVLO hysteresis, industrial grade |
| **MP3423** | 1.9 | 5.5 | **9** | 0.043 | 2.5 to 5.5 | 600 | QFN-14 (2x2) | Output disconnect, sync |
| **MP3424** | 2 | 5.5 | **9.5** | 0.32 | 3 to 5.5 | 580 | QFN-14 (2x2) | Current prog., output disconnect, sync |
| S **MP3437** | 2.7 | 16 | **9.5** | 0.38 | $V_{IN}$ to 16 | 600 | TSOT23-8, QFN-10 (2x2.5) | Selectable PSCM/USM/FCCM, prog. UVLO and hysteresis, auto pass-through mode in PSM |
| S **MP3434** | 0.8 | 22 | **3** | 0.15 | $V_{IN}$ to 22V | 1200 | SOT583 | High efficiency, fully integrated sync boost, prog. UVLO and hysteresis |
| N **MP3432** | 2.7 | 13 | **10** | 0.51 | $V_{IN}$ to 16 | 600 | QFN-13 (3x4) | Selectable PSM/USM/FCCM, prog. switch peak current limit, auto pass-through mode in PSM when $V_{IN}$ > $V_{OUT}$, sync |
| **MP3429** | 0.8 | 13 | **21.5** | 0.45 | 1 to 16 | 600 | QFN-13 (3x4) | Selectable PSM/USM/FCCM, prog. UVLO and hysteresis, sync |
| **MP3431** | 2.7 | 13 | **21.5** | 0.45 | 1 to 16 | 600 | QFN-13 (3x4) | Selectable PSM/USM/FCCM, prog. input current limit, prog. UVLO and hysteresis, sync |
| **MP3428A** | 3 | 20 | **25** | 0.65 | 3 to 22 | 600 | QFN-22 (3x4) | Input disconnect function, ext. soft start, prog. UVLO and hysteresis, sync |



N - New Product S - Sampling Product

# SWITCHING REGULATORS | DC/DC POWER CONVERSION

## Step-Up Energy Storage (Dying Gasp)/Power Backup Manager PMICs

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{STRG}$ (Max) (V) | $I_{LIMIT}$ Charging (A) | $I_{LIMIT}$ Dumping (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (V) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| N | **MP5505E** | 2.7 | 7 | 30 | 0.54 | 6 | 2 (Max) | 0.801/0.795 | QFN-20 (3x4) | Input current limit, adjustable dV/dt slew rate, reverse-current protection |
| | **MP5455** | 2.7 | 7 | 30 | 0.5 | 5 | 2 (Max) | 0.79 | QFN-20 (3x4) | For USB Type-C HDMI interface reference design |
| | **MP5507E** | 2.7 | 7 | 30 | 0.5 | 5 | 2 (Max) | 0.79 | QFN-16 (2.5x3.2) | Bus power good indicator, adj. dV/dt slew rate for VB start-up, 1.2MHz buck release mode switching frequency, smaller package version of MP5505A |
| | **MP5512** | 4 | 18 | 40 | 0.96 | 5 | 1 | 0.8 | QFN-28 (4x5) | Prog. storage and release voltage, hot-swap management unit for PCIe |
| | **MP5515** | 2.8 | 18 | 32 | 0.5 to 2 | 6.5 | 3 (Max) | 0.8 | QFN-30 (5x5) | Prog. high-efficiency, lossless energy storage and power backup management unit for SSD and HDD applications |

## Step-Up LNBs

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Standard | $I_{OUT}$ (Max) (A) | 22kHz Tone Signal Generated | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| | **MP8124** | 8 | 14 | DiSEqC 1.x | 0.5 | Int | QFN-14 (2x3) | Boost converter with internal switch, low-noise LDO output, line drop compensation, selectable $V_{OUT}$ compensation, adjustable output SS |
| S | **MP8128** | 8 | 14 | DiSEqC 1.x and DiSEqC 2.x | 1 | Selectable Int or Ext | QFN-20 (3x3) | With $I^2C$ interface, low-noise LDO output, selectable output voltage |

## Buck-Boost

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Sync | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| N | **MP8860** | 2.8 | 22 | 1 | 1 | - | 500 | ✓ | QFN-16 (3x3) | 1A $I_{OUT}$, 4-switch buck-boost converter with $I^2C$ interface |
| N | **MP8862** | 2.8 | 22 | 2 | 1 | - | 500 | ✓ | QFN-16 (3x3) | 2A $I_{OUT}$, 4-switch buck-boost converter with $I^2C$ interface |
| | **MP2155** | 2 | 5.5 | 2.2 | 0.08 | 0.496 | 1000 | ✓ | QFN-10 (3x3) | Power-save mode, load disconnect |
| N | **MP28160** | 2.5 | 5.5 | 2.5 | 0.22 | - | 1800 | ✓ | CSP-12 (1.4x1.8) | 0.5A $I_{OUT}$, buck-boost converter, 3.3V fixed output voltage |
| | **MP28163** | 2 | 5.5 | 2.9 | 0.07 | 0.496 | 1100 | ✓ | QFN-10 (3x3) | Power-save mode, load disconnect |
| N | **MP28167-A** | 2.8 | 22 | 3 | 1 | 1 | Selectable: 500/750 | ✓ | QFN-16 (3x3) | 3A $I_{OUT}$, 4-switch, integrated buck-boost converter with FB pin, $I^2C$ interface |
| N | **MP28167** | 2.8 | 22 | 3 | 1 | - | 500 | ✓ | QFN-16 (3x3) | 3A $I_{OUT}$, 4-switch buck-boost converter, fixed output voltage options available |
| N | **MP8859** | 2.8 | 22 | 3 | 1 | - | 500 | ✓ | QFN-16 (3x3) | 3A $I_{OUT}$, 4-switch buck-boost converter with $I^2C$ interface |
| | **MP28164** | 1.2 | 5.5 | 4.2 | 0.025 | 0.5 | 2000 | ✓ | QFN-11 (2x3) | Power-save mode, load disconnect |
| S | **MP4245** | 4 | 36 | 6 | 0.3 | 0.1/0.4/ 0.72/1.6 | Selectable: 250/350/420 | ✓ | QFN-21(4x5) | 4-switch USB PD solution buck-boost converter, spread spec. sel., $I^2C$ interface and 2-time prog. MTP |
| S | **MP2980** | 5 | 36 | Prog | 0.07/ 0.055 | Prog | Selectable: 200/300/400/600 | ✓ | QFN-32 (4x4) | 4-switch buck-boost controller with $I^2C$ interface |
| S | **MP2984** | 5 | 36 | Prog | 0.07/ 0.055 | Prog | Selectable: 200/300/400/600 | ✓ | QFN-32 (4x4) | USB Type-C PD buck-boost controller with $I^2C$ int., <50mA steps cur. limit adj. through IPWM pin |

# LDO | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (mA) | $I_Q$ (Typ) (µA) | Load Regulation (%/mA) | PSRR @ 1kHz (dB) | $V_{FB}$ (V) | Dropout Voltage (mV) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **MP2000** | 1.35 | 6 | **150** | 65 | 0.001 | 50 | 0.5 | 250: (IO: 100mA)<br>300 (IO: 150mA) | TSOT23-5 | Low-voltage input (1.35V to 6V) |
| **MP8801** | 2.7 | 6.5 | **150** | 125 | 0.001 | 70 | 1.22 | 150 (IO: 150mA) | TSOT23-5 | Low noise, excellent for RF app, lower cost |
| **MP8802** | 2.7 | 6.5 | **250** | 125 | 0.001 | 70 | 1.22 | 230 (IO: 250mA) | TSOT23-5 | Excellent for RF applications, lower cost |
| **MP20056** | 2.5 | 5.5 | **250** | 150 | 0.003 | 63 | 0.8 | 100 (IO: 250mA) | QFN-8 (2x2),<br>TSOT23-5 | Fixed output, current limiting and thermal protection |
| **MP20041** | 2.5 | 6 | **300 (2x)** | 114 | 0.003 | 65 | - | 75 (IO: 100mA)<br>220 (IO: 300mA) | QFN-8 (2x2) | Dual fixed output, P2P with RT9012 |
| **MP2002** | 1.35 | 6.5 | **500** | 100 | 0.001 | 26 | 0.5 | 290 (IO: 500mA) | QFN-8 (2x3) | Low-voltage input, power good |
| **MP8904** | 2.5 | 6.5 | **500** | 100 | 0.001 | 26 | 0.496 | 300 (IO: 500mA) | QFN-8 (2x3) | Power good output, industrial grade |
| **MP20045** | 2.5 | 5.5 | **1000** | 110 | 0.000 | 56 | 1.5 | 140 (IO: 1000mA) | QFN-8 (3x3),<br>SOIC-8E | High input/output current with fast response, fixed and adj. +0252 output voltages |
| **MP20051** | 2.5 | 5.5 | **1000** | 110 | 0.000 | 63 | 0.8 | 140 (IO: 1000mA) | QFN-8 (3x3) | Industrial grade |
| **MP20046** | 2.7 | 5.5 | **2000** | 75 | 0.000 | 70 | - | 210 (IO: 2000mA) | SOIC-8E,<br>QFN-10 (3x3) | High input/output current with fast response |
| **MP20073** | 1.3 | 6 | **2000** | - | - | - | - | - | MSOP-8E | DDR2/3 termination regulator |
| **MP20075** | 1.3 | 3.6 | **3000** | - | - | - | - | - | MSOP-8E | DDR2/3/3L/4 termination regulator, VDRV = 3.3V |
| **High-Performance, Low-Dropout Linear Regulators** | | | | | | | | | | |
| **MP2016** | 4 | 42 | **30** | 12 | 0.003 | 50 | 1.23 | 700 (IO: 30mA) | QFN-8 (2x3),<br>TSOT23-5 | Ideal for automotive |
| **MP2015A** | 2.5 | 24 | **150** | 3.3 | 0.005 | 41 | 1.215 | 700 (IO: 150mA) | TSOT23-4,<br>QFN-6 (2x2),<br>QFN-8 (3x3) | EN pin |
| **MP2019** | 3 | 40 | **300** | 10 | 0.04 | 45 | 1.25 | 420 (IO: 300mA) | SOIC-8EP | Industrial grade |
| **MP2014** | 3 | 40 | **500** | 10 | 0.03 | 45 | - | 750 (IO: 500mA) | TO252-5 | Low $I_Q$ |
| **MP2018** | 3 | 16 | **500** | 10 | 0.03 | 45 | - | 750 (IO: 500mA) | TO252-5 | Low $I_Q$, fixed output voltage, power good |
| **MP2005** | 1 | 5.5 | **800** | 100 | 0.001 | 65 | 0.5 | 70 (IO: 800mA) | QFN-8 (2x3) | Fast transient, 48dB PSRR at 1MHz |
| **MP2030** | 1.1 | 5 | **3000** | 220 | 0.001 | 32 | 0.5 | 150 (IO: 3000mA) | QFN-10 (3x3),<br>QFN-32 (5x5) | Dual supply, fast transient, bias supply, power good, current limit, int. thermal protection |



N - New Product S - Sampling Product

## SUPERVISORY | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_Q$ (Typ) (µA) | Threshold Accuracy (%) | Reset Threshold Accuracy (%) | Delay Time (ms) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP6400** | 1.8 | 6 | 1.6 | 1 | 1 | 2.1 to 10000 | QFN-10 (3x3) | Power-save mode, load disconnect |
| **MPQ6411** | 4.8 | 5.2 | - | - | - | - | QFN-10 (3x3) | Power-save mode, load disconnect |
| N **MP6420** | 3.6 | 18 | 3 | 0.5 | - | 3000 to 4600 | TSOT23-8 | Battery protection IC for 2-3 series cell Li-ion with integrated protective MOSFET and PTC interface |
| N **MP6412** | 2.2 | 12 | 1 | - | - | - | QFN-10 (1.4x1.8) | Ultra-low $I_Q$ load switch controller with reset timer |

## MOSFET DRIVERS | DC/DC POWER CONVERSION

### Half-Bridge Gate Drivers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Bootstrap Supply (Max) (V) | Peak Pull-Up Current (A) | Peak Pull-Down Current (A) | Rise Time (ns) | Fall Time (ns) | Turn-On Delay (ns) | Turn-Off Delay (ns) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP18024** | 9 | 16 | 100 | 3 | 4.5 | 15 | 9 | 20 | 20 | SOIC-8E | 4A, high frequency |
| **MP1906** | 10 | 16 | 80 | 0.35 | 1 | 50 | 30 | 80 | 80 | SOIC-8 | High performance |
| **MP1907** | 4.5 | 18 | 100 | 1.5 | 2.5 | 12 | 9 | 18 | 20 | QFN-10 (3x3) | 2.5A, high frequency |
| **MP18021A** | 9 | 18 | 100 | 1.5 | 2.5 | 12 | 9 | 16 | 16 | SOIC-8E, QFN-8 (3x3) | 2.5A, high frequency, industrial grade |
| **MP18021** | 9 | 18 | 100 | 1.5 | 2.5 | 12 | 9 | 16 | 16 | SOIC-8EP, QFN-8 (3x3) | High frequency, N-channel MOSFET with 1ns matching delay |
| S **MP1909** | 4.5 | 12 | 50 | 2 | 4 | 10 | 6 | 110 | 30 | SOT583 | Low $I_Q$, support 100% duty, 30V, high frequency |
| **MP1917** | 8 | 17 | 115 | 2.6 | 4.5 | 15 | 15 | 20 | 20 | QFN-8 (4x4) | 105V, 4A, high frequency |
| **MP1917A** | 8 | 15 | 115 | 2.6 | 4.5 | 15 | 15 | 20 | 20 | QFN-10 (4x4) | 100V, 4A, high frequency |

## PMICS & MULTIPLE OUTPUTS | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (V) | $V_{FB}$ (V) | $I_{SW}$ Limit (Typ) (A) | $f_{SW}$ (kHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP28300** | 2 | 5.5 | Buck: 0.8/1.0/1.2/ 1.5/1.8/2.5/3.3 LDO: 1.3/1.8/3.3 | | 0.6 | 1500 | QFN-12 (2x2) | Ultra-low 500nA $I_Q$, 300mA buck + 100mA LDO, programmable $V_{OUT}$ by CTRL, COT, PG |
| S **MP28310** | 2 | 5.5 | Buck: 1.2/1.5/1.8/ 2.5/2.8/3.0/3.3 LDO: 1.8/2.8/3.0 | | 0.6 | 1500 | CSP-12 (1.2x1.6) | Ultra-low 500nA $I_Q$, ultra-small package, 300mA buck + 100mA LDO, programmable $V_{OUT}$ by CTRL, COT, PG |
| **MP28301** | 2 | 5.5 | Buck: 0.8/1.0/1.2/ 1.5/1.8/2.5/3.3 LDO: 1.2/2.5/3.0 | | 1.2 | 1500 | QFN-12 (2x2) | Ultra-low 500nA $I_Q$, 700mA buck + 100mA LDO, programmable $V_{OUT}$ by CTRL, COT, PG |
| **MP5408** | 6 | 36 | 5.1/5.17/5.3 | - | Converter: 13 USB SW1: 3.45 USB SW2: 2.75 | Prog | QFN-26 (5x5) | Integrated, smart, dual USB charging ports, auto-detect, supports USB type-C 5V at 3A DFP mode |

# PMICS & MULTIPLE OUTPUTS | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (V) | $V_{FB}$ (V) | $I_{SW}$ Limit (Typ) (A) | $f_{SW}$ (MHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP5403** | 2.7 | 6 | Ch 1: 0.9/1.1/2.5/2.85<br>Ch 2: 0.9/1.2/1.8/2.5 | 0.6 | Ch 1: 5.6<br>Ch 2: 4.7 | 1500 | UTQFN-20 (2.5x3) | Configurable mini PMIC, two buck converters (2.5A/3.5A) + one load switch (3A) |
| **MP5403B** | 2.7 | 6 | 0.6V to 6V | 0.6 | Ch 1: 8.5<br>Ch 2: 7 | 1500 | UTQFN-20 (2.5x3) | Mini PMIC, dual peak buck (4A/5A) + one load switch (2A) |
| **MP5416** | 2.8 | 5.5 | Prog | Prog | Prog | Prog | QFN-28 (4x4) | $I^2C$ bus and one-time programmable (OTP) function, programmable $V_{OUT}/f_{SW}/I_{SW}$ via $I^2C$/OTP, configurable mini PMIC, four buck converters (4.5A/4A/2.5A/2A) + four 300mA LDOs and one 10mA RTC LDO |
| N **MP5418** | 2.3 | 5 | $V_{OUT}1$: 0 to $-V_{IN}$<br>$V_{OUT}2$: 0V to -CTL | - | 1 | 30 to 550 | QFN-10 (1.4x1.8) | Negative charge pump + an adjustable negative regulator |
| N **MP5470** | 4 | 16 | 0.55 to 7 | Prog | Prog | 800 | QFN-22 (3x4) | $I^2C$ interface, four buck converters, parallel mode for higher current, one GPIO pin |
| S **MP5417** | 2.8 | 5.5 | Prog | Prog | Ch 1/3: 4<br>Ch 2/4: 2 | Prog | QFN-28 (4x4) | $I^2C$ bus and one-time programmable (OTP) function, programmable $V_{OUT}/f_{SW}/I_{SW}$ via $I^2C$/OTP, four buck converters + two LDOs + two GPIO pins |
| S **MP5413** | 2.7 | 5.5 | Prog | Prog | Prog | Prog | WLCSP-38 (2.7x3.1) | Ultra-small package, sleep mode control, $I^2C$ bus and one-time programmable (OTP) function, programmable $V_{OUT}/f_{SW}/I_{SW}$ via $I^2C$/OTP, four buck converters + two LDOs + two GPIO pins |
| N **MP5461** | $V_{IN}1$: 4.2V<br>$V_{IN}2$: 2.5V | $V_{IN}1$: 22V<br>$V_{IN}2$: 5.5V | 3.3 | - | 2.5 | 1800 | CSP-12 (1.4x1.8) | Dual-input O-ring switches, power path selection input/indication, fast SCP on $OR_{OUT}$, fast reverse block within 2µs on $OR_{OUT}$, output OVP for buck-boost converter |
| N **MP5423** | 25 | 100 | 14/5/3.3 | - | 0.65 | 200 | SOIC8-EP | One 300mA buck converter + two LDOs (100mA/40mA) |
| S **MP5424** | 2.7 | 5.5 | 2.7 to 5.5 | Prog | LDO: 0.43/ 0.8<br>Ch 1/3: 4.5<br>Ch 2/4: 4.4 | 1100 | QFN-26 (3.5x4.5) | $I^2C$ bus and mutiple-time programmable (MTP) function, programmable $V_{OUT}$ via $I^2C$/MTP, configurable mini PMIC, four buck converters (2A/2.5A/4.5A/4.5A) + three LDOs (0.3A) + one load switch (3A), power-on reset output |
| N **MP5415** | 3.6 | 5.5 | 0.6 to 2.18 ($V_{OUT}$ 1/3)<br>0.8 to 3.9 ($V_{OUT}$ 2/4) | $V_{FB}1$: 1.4<br>$V_{FB}2$: 1.5<br>$V_{FB}4$: 3.3 | Ch 1/2/3: 1<br>Ch 2: 2 | Prog | QFN-28 (4x4) | Four bucks (1A, 1A, 1A, 2A), + four 300mA LDOs, one 10mA RTC LDO, $I^2C$ interface, OTP, flexible system programming features |
| S **MP8855** | 2.7 | 22 | Buck-Boost: 0.6 to 22<br>Buck: 0.6 to $V_{IN}$<br>Boost (3x3) 3.7 to 22<br>Boost (3x4) 2.7 to 22 | Prog | 7.5 | 1000 | QFN-21 (4x4) | Five-topology selection by PSEL pin, (1 buck-boost, 2 bucks, 1 interleaving buck, 1 interleaving boost, 1 buck + 1 boost), MTP-programmable parameters |
| S **MPQ7920-AEC1** | 2.7 | 5.5 | 0.4 to 3.5875 or $V_{IN}$ | $V_{FB}1$:1.375<br>$V_{FB}2$: 1.35<br>$V_{FB}3$: 1.375<br>$V_{FB}4$: 0.675 | Ch 1: 4.5<br>Ch 2: 2.5<br>Ch 3: 4.5<br>Ch 4: 2 | Adj | QFN-26 (3.5x4.5) | Buck converters, RTC dedicated LDO, four low-noise LDOs, $I^2C$ interface, 2-time programmable MTP |
| S **MP5479** | 2.7 | 5.5 | 0.4V to 3.5875V or $V_{IN}$ | $V_{FB}1$:1.375<br>$V_{FB}2$: 1.35<br>$V_{FB}3$: 1.375<br>$V_{FB}4$: 0.675 | Ch 1: 4.5<br>Ch 2: 2.5<br>Ch 3: 4.5<br>Ch 4: 2 | Adj | QFN-26 (3.5x4.5) | Four buck and five LDO, flexible system settings via $I^2C$ and MTP |



N - New Product S - Sampling Product

## **FLYBACK** | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (V) | $f_{SW}$ (MHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP6004** | 14 | 80 | 2.05 | 0.38 | 1.99 | 10 to 200 | QFN-14 (3x3) | 13W, integrated 180V power switch |
| S **MP6005** | 8 | 80 | 0.8V x 160mV / $R_{SENSE}$ | 0.45 | 2 | 250 | MSOP-10 | Flyback/forward controller with PSR or SSR, 2A gate and 0.8A sync drivers |
| **MP6001** | 10 | 100 | 2 | 1 | 1.21 | - | SOIC-8E | 15W, integrated 150V power switch |
| **MP6002** | 10 | 100 | 4 | 1 | 1.21 | - | SOIC-8E | 30W, integrated 150V power switch |

## **FULLY INTEGRATED POE PD SOLUTIONS** | DC/DC POWER CONVERSION

| Part Number | Pass Device | Current Limit (mA) | Thermal Protection | IEEE Detection & Classification | Package | Notes |
|---|---|---|---|---|---|---|
| **MP8004** | 100V, 1Ω DrMOS | 420 | ✓ | 802.3af | QFN-20 (4x6) | 13W PoE PD interface and PWM converter |
| **MP8007** | 100V, 0.48Ω DrMOS | 840 | ✓ | 802.3af | QFN-28 (4x5) | 13W primary-side regulated flyback without optocoupler feedback, 200kHz $f_{SW}$ |
| **MP8008** | 100V, 0.48Ω DrMOS | 840 | ✓ | 802.3af/at | QFN-28 (4x5) | 25.5W PoE PD interface and peak-current mode flyback controller |
| S **MP8009** | 100V, 0.48Ω DrMOS | 840 | ✓ | 802.3af/at | QFN-28 (4x5) | PD interface and PSR/SSR controller |
| N **MP8007H** | 100V, 0.48Ω DrMOS | 840 | ✓ | 802.3af | QFN-28 (4x5) | 13W primary-side regulated flyback without optocoupler feedback, 300kHz $f_{SW}$ |

## **DC/DC CONTROLLERS FOR POE** | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (mA) | $V_{FB}$ (V) | $f_{SW}$ (MHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP3900** | 8.6 | 12 | 0.2V / $R_{SENSE}$ | 0.18 | 0.816 | 330 | MSOP-8 | Boost controller, 10V gate driver |
| **MP6001** | 10 | 100 | 2 | - | - | 55 to 550 | SOIC-8E | 15W, integrated 150V power switch |
| **MP6002** | 10 | 100 | 4 | 1 | 1.21 | 55 to 550 | SOIC-8E | 30W, integrated 150V power switch |
| **MP6004** | 14 | 80 | 2.05 | 0.38 | 1.99 | 10 to 200 | QFN-14 (3x3) | 13W, integrated 180V power switch |
| S **MP6005** | 8 | 80 | 0.8V x 160mV / $R_{SENSE}$ | 0.45 | 2 | 250 | MSOP-10 | Flyback/forward controller with PSR or SSR. 2A gate and 0.8A sync drivers |

## **POE PSE CONTROLLERS** | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | ICUT | ILIM | PoE Standards Supported | FET | MPS Method | Pair Control | Operating Temperature Range (°C) | Number of PSE Ports | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S **MP3924** | 44 | 57 | Prog | Prog | 802.3af/at | - | DC Disconnect | - | -40 to +125 | 4 | QFN-32 (5x5) | Power over Ethernet, automatic mode and $I^2C$ command control mode |

## POE PD IDENTITY | DC/DC POWER CONVERSION

| Part Number | Pass Device | Current Limit (mA) | Thermal Protection | IEEE Detection & Classification | Package | Notes |
|---|---|---|---|---|---|---|
| **MP8003A** | 100V, 0.48Ω DrMOS | 840 | ✓ | 802.3af/at | QFN-10 (3x3) | 25.5W PoE PD controller |
| **MP8001** | 100V, 0.8Ω DrMOS | 420 | ✓ | 802.3af | SOIC-8 | 15W PoE PD controller |

## DIGITAL REGULATORS | DC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (mA) | $I_Q$ (Typ) (mA) | $V_{FB}$ (Typ) (V) | $f_{SW}$ (MHz) | Power Good | External Soft Start | Light-Load Efficiency | Sync Rectification | Constant-On-Time (COT) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (S) **MP8833** | 2.7 | 5.5 | 1.5 | 1 | 2.5 | Prog | - | ✓ | - | - | - | QFN-16 (2x3) | $I^2C$ interface, TEC current monitor, external sync function |
| **MP8843** | 2.6 | 6 | 3 | 0.06 | 0.6 | 1000 to 2000 | ✓ | | ✓ | ✓ | ✓ | QFN-12 (2x2) | Prog. $V_{OUT}$, power-save mode |
| (N) **MP8854** | 2.85 | 18 | 4 | 0.42 | 0.72 | 500 to 1250 | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-14 (3x4) | $I^2C$ prog. FB range, integrated telemetry, accurate output voltage/current, readback via $I^2C$ |
| **MP8861** | 2.85 | 18 | 6 | 0.42 | 0.72 | 500 to 1250 | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-14 (3x4) | |
| **MP8864** | 4.5 | 21 | 4 | 0.5 | 0.6 | 1600 | ✓ | ✓ | ✓ | ✓ | - | QFN-15 (3x3) | Prog. $V_{OUT}$, power-save mode |
| **MP8846** | 4.5 | 8 | 6 | 0.5 | 0.6 | 1600 | ✓ | ✓ | ✓ | ✓ | - | QFN-15 (3x3) | |
| **MP8847** | 2.7 | 6 | 6 | 0.3 | 0.6 | 850 to 2200 | ✓ | - | ✓ | ✓ | - | QFN-14 (2x3) | |
| **MP8865** | 4.5 | 21 | 6 | 0.5 | 0.6 | 1600 | ✓ | ✓ | ✓ | ✓ | - | QFN-15 (3x3) | Prog. $V_{OUT}$, power-save mode |
| **MP8867** | 4.5 | 17 | 8 | 0.56 | 0.6 | 1500 | ✓ | ✓ | ✓ | ✓ | - | QFN-14 (3x4) | |
| **MP8868** | 4.5 | 17 | 10 | 0.56 | 0.6 | 1500 | ✓ | ✓ | ✓ | ✓ | - | QFN-14 (3x4) | |
| **MP8869S** | 2.85 | 18 | 12 | 0.42 | 0.72 | 500 to 1250 | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-14 (3x4) | $V_{OUT}$ adjustable up to 5.5V with FB pin, integrated telemetry, accurate output voltage/current, readback via $I^2C$ |

(N) - New Product (S) - Sampling Product

# MPM POWER MODULES | POWER MODULES

## Step-Down ($V_{IN}$ Max ≤ 6V)

| Part Number | $I_{OUT}$ (A) | $V_{IN}$ (V) | $I_Q$ (µA) | Light-Load Efficiency | Power Good | I²C Interface | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **MPM3804** | 0.6 | 2.3 to 5.5 | 11 | ✓ | ✓ | - | Internal | ✓ | QFN-10 (2x2x0.9) | Adjustable $V_{OUT}$, excellent load and line regulation |
| **MPM3804-12** | 0.6 | 2.3 to 5.5 | 11 | ✓ | ✓ | - | Internal | ✓ | QFN-10 (2x2x0.9) | 1.2V fixed $V_{OUT}$, sync, ultra-small QFN package |
| **MPM3804-18** | 0.6 | 2.3 to 5.5 | 11 | ✓ | ✓ | - | Internal | ✓ | QFN-10 (2x2x0.9) | 1.8V fixed $V_{OUT}$, sync, ultra-small QFN package |
| **MPM3804-25** | 0.6 | 2.3 to 5.5 | 11 | ✓ | ✓ | - | Internal | ✓ | QFN-10 (2x2x0.9) | 2.5V fixed $V_{OUT}$, sync, ultra-small QFN package |
| **MPM3804-33** | 0.6 | 2.3 to 5.5 | 11 | ✓ | ✓ | - | Internal | ✓ | QFN-10 (2x2x0.9) | 3.3V fixed $V_{OUT}$, sync, ultra-small QFN package |
| **MPM3805** | 0.6 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, adjustable $V_{OUT}$ |
| **MPM3805-12** | 0.6 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 1.2V fixed $V_{OUT}$ |
| **MPM3805-18** | 0.6 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 1.8V fixed $V_{OUT}$ |
| **MPM3805-25** | 0.6 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 2.5V fixed $V_{OUT}$ |
| **MPM3805-33** | 0.6 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 3.3V fixed $V_{OUT}$ |
| N **MPM3811** | 1 | 2.3 to 5.5 | 340 | ✓ | | - | Internal | ✓ | QFN-10 (2x2x1.6) | Peak 1.2A, sync, ultra-small QFN package, excellent load and line regulation |
| **MPM3810** | 1.2 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, adjustable $V_{OUT}$ |
| **MPM3810-12** | 1.2 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 1.2V fixed $V_{OUT}$ |
| **MPM3810-18** | 1.2 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 1.8V fixed $V_{OUT}$ |
| **MPM3810-25** | 1.2 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 2.5V fixed $V_{OUT}$ |
| **MPM3810-33** | 1.2 | 2.5 to 6 | 17 | ✓ | ✓ | - | Internal | ✓ | QFN-12 (3x2.5x0.9) | Ultra-low $I_Q$, 3.3V fixed $V_{OUT}$ |
| N **MPM3822C** | 2 | 2.7 to 6 | 500 | | ✓ | - | Internal | ✓ | QFN-18 (2.5x3.5x1.6) | Ultra-low ripple, sync, adjustable output from 0.6V, forced CCM |
| **MPM3820** | 2 | 2.7 to 6 | 40 | ✓ | ✓ | - | Internal | ✓ | QFN-20 (3x5) | Adjustable output from 0.6V, ultra-low $I_Q$ |
| **MPM3830** | 3 | 2.7 to 6 | 40 | ✓ | ✓ | - | Internal | ✓ | QFN-20 (3x5x1.6) | High light-load efficiency |
| N **MPM3833C** | 3 | 2.7 to 6 | 500 | | ✓ | - | Internal | ✓ | QFN-18 (2.5x3.5x1.6) | Ultra-low ripple, sync, adjustable output from 0.6V, forced CCM |
| **MPM3840** | 4 | 2.8 to 5.5 | 40 | ✓ | ✓ | - | Internal | - | QFN-20 (3x5x1.6) | Light-load efficiency, 100% duty cycle, low $I_Q$ |
| N **MPM3860** | 6 | 2.75 to 7 | 100 | | ✓ | - | Internal/External | ✓ | QFN-24 (4x6x1.6) | Sync, adjustable output from 0.6V, forced CCM |

## Step-Down (6V < $V_{IN}$ Max ≤ 24V)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MPM3606** | 0.6 | 4.5 to 21 | 200 | ✓ | - | - | Internal | ✓ | QFN-20 (3x5x1.6) | Output adjustable from 0.8V, fast transient response |
| **MPM3606A** | 0.6 | 4.5 to 21 | 300 | ✓ | ✓ | - | Internal | ✓ | QFN-20 (3x5x1.6) | Power good, power-save mode at light load, output adjustable from 0.8V |
| **MPM3610** | 1.2 | 4.5 to 21 | 200 | ✓ | - | - | Internal | ✓ | QFN-20 (3x5x1.6) | Output adjustable from 0.8V, low $I_Q$ |
| **MPM3610A** | 1.2 | 4.5 to 21 | 200 | ✓ | ✓ | - | Internal | ✓ | QFN-20 (3x5x1.6) | Output adjustable from 0.8V, low $I_Q$, power good |
| **MPM3620** | 2 | 4.5 to 24 | 200 | ✓ | - | - | Internal | ✓ | QFN-20 (3x5x1.6) | Adjustable output from 0.8V |
| **MPM3620A** | 2 | 4.5 to 24 | 200 | ✓ | ✓ | - | Internal | ✓ | QFN-20 (3x5x1.6) | Power good, adjustable output from 0.8V |

# MPM POWER MODULES | POWER MODULES

## Step-Down (6V < $V_{IN}$ Max ≤ 24V)

| | Part Number | $I_{OUT}$ (A) | $V_{IN}$ (V) | $I_Q$ (µA) | Light-Load Efficiency | Power Good | I²C Interface | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPM3632C** | 3 | 4 to 18 | 1200 | - | ✓ | - | Internal | ✓ | QFN-20 (3x5x1.6) | Sync, output adjustable from 0.8V, forced CCM |
| S | **MPM3650** | 5 | 2.75 to 17 | 110 | - | ✓ | - | Internal/External | ✓ | QFN-24 (4x6x1.6) | Sync, adjustable output from 0.6V, high efficiency, ultra-thin |
| N | **MPM3683-7** | 8 | 2.7 to 16 | 650 | ✓ | ✓ | - | Internal | ✓ | QFN-28 (7x7x4) | Peak 10A, ultra-low ripple, ultra-fast transient response |
| N | **MPM3695-10** | 10 | 3.3 to 14 | - | - | ✓ | ✓ | Internal | ✓ | LGA (8x8x2) | 10A continuous $I_{OUT}$, 0.5V to 5V output, parallel up to 60A peak, ultra-thin |
| | **MPM3682** | 10 | 2.5 to 18 | 860 | ✓ | ✓ | - | Internal/External | ✓ | QFN-57 (12x12x4) | Programmable $f_{SW}$, output adjustable from 0.65V to 5V |
| | **MPM3684** | 15 | 2.5 to 18 | 860 | ✓ | ✓ | - | Internal/External | ✓ | QFN-65 (12x15x4) | Programmable $f_{SW}$ |
| N | **MPM3695-25** | 20 | 3 to 16 | - | - | ✓ | ✓ | Internal | ✓ | QFN-59 (10x12x4) | Peak 25A, 0.5V to 5.5V output, parallel up to 50A peak |
| | **MPM3686** | 20 | 2.5 to 18 | 860 | ✓ | ✓ | - | Internal/External | ✓ | QFN-65 (12x15x4) | Programmable $f_{SW}$ |
| S | **MPM3695-100** | 100 | 3 to 16 | - | - | ✓ | ✓ | Internal | ✓ | BGA (15x30x5.2) | 0.5V to 3.3V output range, parallel up to 800A |

## Step-Down (24V < $V_{IN}$ Max ≤ 36V)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MPM3506A** | 0.6 | 4.5 to 36 | 580 | - | ✓ | - | Internal | ✓ | QFN-19 (3x5x1.6) | 36V/0.6A, output adjustable from 0.8V |
| | **MPM3510A** | 1.2 | 4.5 to 36 | 580 | - | ✓ | - | Internal | ✓ | QFN-19 (3x5x1.6) | 36V/1.2A, high voltage, output adjustable from 0.8V |
| S | **MPM3520E** | 2 | 4 to 36 | 700 | - | ✓ | - | Internal | ✓ | LGA-8 (10x10x4.2) | 36V/2A, metcal can power module, ultra-low EMI, output adjustable from 1.0V to 5.0V |
| N | **MPM3550E** | 5 | 4 to 36 | 450 | ✓ | ✓ | - | Internal | ✓ | LGA-18 (12x12x4.2) | 36V/5A, metcal can power module, ultra-low EMI, output adjustable from 1.0V to 12.0V |

## Step-Down ($V_{IN}$ Max > 36V)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPM3570E** | 0.3 | 4.5 to 75 | 30 | ✓ | ✓ | - | Internal | ✓ | LGA-8 (10x10x4.2) | 75V/0.3A, metcal can power module, ultra-low EMI, $V_{OUT}$ adjustable from 1.0V to 5.0V |
| S | **MPM3593** | 3 | 3.5 to 45 | 11 | ✓ | ✓ | ✓ | Internal | ✓ | QFN-41 (6x8x1.6) | 45V/3A, high efficiency, I²C interface, synchronous buck, OTP |
| N | **MPM3530** | 3 | 4.5 to 55 | 450 | ✓ | ✓ | - | External | ✓ | QFN-44 (12x10x4) | 55V/3A continous output, programmable $f_{SW}$ with external sync function |

## Step-Down Multiple Output ($V_{IN}$ Max ≤ 45)

| | Part Number | $I_{OUT}$ (A) | # of Outputs | $V_{IN}$ (V) | $I_Q$ (µA) | Light-Load Efficiency | Power Good | I²C Interface | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MPM38111** | Dual 1A | 2 | 2.7 to 6 | 45 | ✓ | - | - | Internal | ✓ | QFN-14 (4x4x1.6) | Ultra-low $I_Q$ |
| | **MPM38222** | Dual 2A | 2 | 2.7 to 6 | 45 | ✓ | - | - | Internal | ✓ | QFN-14 (4x4x1.6) | Ultra-low $I_Q$ |
| S | **MPM3596** | Dual 3A | 2 | 3.5 to 45 | 50 | - | - | ✓ | Internal | ✓ | QFN-45 (10x10x4) | Single 6A $I_{OUT}$, parallel operation up to 36A |
| N | **MPM54304** | Quad 3A | 4 | 4 to 16 | 1500 | - | - | ✓ | Internal | ✓ | LGA-33 (7x7x2) | MTP programmable |



N - New Product S - Sampling Product

## MPM POWER MODULES | POWER MODULES

### Step-Up/Down & Step-Up ($V_{IN}$ Max ≤ 22V)

| Part Number | Converter Type | $I_{OUT}$ (A) | $V_{IN}$ (V) | $I_Q$ (µA) | Power Good | I²C Interface | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| S **MPM4106** | Boost | 0.6 | 1.8V to 5.5V | 29 | - | - | Internal | ✓ | QFN-13 (2.2x2.6x1.6) | High efficiency, 1MHz $f_{SW}$, internal compensation |
| S **MPM4330** | Boost | 3 | 2.7V to 22V | 4mA | ✓ | ✓ | Internal | ✓ | LGA-51 (8x14) | High efficiency |
| S **MPM4730** | Buck-Boost | 5 | 3.0V to 22V | 150mA | ✓ | ✓ | Internal | ✓ | LGA-51 (8x14) | High efficiency |

## mEZ POWER MODULES | POWER MODULES

### Boost ($V_{IN}$ Max < 6V)

| Part Number | $I_{OUT}$ (A) | $V_{IN}$ (V) | $V_{OUT}$ (V) | Light-Load Efficiency | Power Good | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD41501A-A** | 1 | 2.7 to 4.2 | 5 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |
| **mEZD41502A-A** | 2 | 2.7 to 4.2 | 5 | - | - | Int | OTP | SiP-6 (27x20) | High efficiency |
| **mEZD41503A-A** | 3 | 2.7 to 4.2 | 5 | - | - | Int | OTP | SiP-6 (27x20) | High efficiency |

### Boost ($V_{IN}$ Max ≥ 6V)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD41501A-B** | 1 | 2.7 to 10 | 12 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |
| **mEZD41501A-C** | 1 | 2.7 to 13 | 15 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |
| **mEZD41502A-B** | 2 | 2.7 to 10 | 12 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |
| **mEZD41502A-C** | 2 | 3.4 to 13 | 15 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |
| **mEZD41503A-B** | 3 | 2.7 to 10 | 12 | - | - | Int | OTP | SiP-6 (27x20) | 600kHz, high efficiency |

### Buck Buck ($V_{IN}$ Max ≤ 24V)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD71201A-A** | 1 | 4.5 to 24 | 1 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-B** | 1 | 4.5 to 24 | 1.2 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-C** | 1 | 4.5 to 24 | 1.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-D** | 1 | 4.5 to 24 | 1.8 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-E** | 1 | 4.5 to 24 | 2.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-F** | 1 | 4.5 to 24 | 3.3 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71201A-G** | 1 | 6.5 to 24 | 5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD71202A-A** | 2 | 4.5 to 24 | 1 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |

# mEZ POWER MODULES | POWER MODULES

## Buck | Buck ($V_{IN}$ Max ≤ 24V)

| Part Number | $I_{OUT}$ (A) | $V_{IN}$ (V) | $V_{OUT}$ (V) | Light-Load Efficiency | Power Good | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD71202A-B** | 2 | 4.5 to 24 | 1.2 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71202A-C** | 2 | 4.5 to 24 | 1.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71202A-D** | 2 | 4.5 to 24 | 1.8 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71202A-E** | 2 | 4.5 to 24 | 2.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71202A-F** | 2 | 4.5 to 24 | 3.3 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71202A-G** | 2 | 6.5 to 24 | 5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-A** | 3 | 5 to 16 | 1 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-B** | 3 | 5 to 16 | 1.2 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-C** | 3 | 5 to 16 | 1.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-D** | 3 | 5 to 16 | 1.8 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-E** | 3 | 5 to 16 | 2.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71203A-F** | 3 | 5 to 16 | 3.3 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD71210A-A** | 10 | 4.5 to 17 | 1 | - | ✓ | Int | OCP, OTP, SCP | SiP-10 (27x20) | 400kHz $f_{sw}$ |
| N **mEZD81260A** | 60 | 5 to 16 | 6.5 | - | ✓ | Int | OVP, UVP, OCP, OTP Protection | LGA-28 (25x15.5) | Digital sync, open-frame module |

## Buck | (24 < $V_{IN}$ Max ≤ 36V)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD72401A-A** | 1 | 4.5 to 36 | 1 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-B** | 1 | 4.5 to 36 | 1.2 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-C** | 1 | 4.5 to 36 | 1.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-D** | 1 | 4.5 to 36 | 1.8 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-E** | 1 | 4.5 to 36 | 2.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-F** | 1 | 4.5 to 36 | 3.3 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-G** | 1 | 4.5 to 36 | 5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72401A-H** | 1 | 6.5 to 36 | 12 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |
| **mEZD72402A-A** | 2 | 4.5 to 36 | 1 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{sw}$ |



N - New Product S - Sampling Product

# mEZ POWER MODULES | POWER MODULES

## Buck (24 < $V_{IN}$ Max ≤ 36V)

| Part Number | $I_{OUT}$ (A) | $V_{IN}$ (V) | $V_{OUT}$ (V) | Light-Load Efficiency | Power Good | Soft Start | Protection Features (OCP/SCP/UVLO/OTP) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **mEZD72402A-B** | 2 | 4.5 to 36 | 1.2 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD72402A-C** | 2 | 4.5 to 36 | 1.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD72402A-D** | 2 | 4.5 to 36 | 1.8 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD72402A-E** | 2 | 4.5 to 36 | 2.5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD72402A-F** | 2 | 4.5 to 36 | 3.3 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| **mEZD72402A-G** | 2 | 6.5 to 36 | 5 | - | - | Int | OCP, OTP, OVP/UVP, SCP, Hiccup | SiP-3 (10x20) | 400kHz $f_{SW}$ |
| N **mEZS91202A** | 2.5 | 7 to 36 | 5 | - | - | Int | OCP, OTP | SiP-4 (13x45) | USB charger, efficiency up to 95% |
| N **mEZDPD3603A** | 3 | 4.5 to 36 | 0.6 to 12 | ✓ | ✓ | Int | OTP, SCP | LGA (15x15) | DC/DC power supply with PMBus |
| N **mEZDPD3603AS** | 3 | 4.5 to 36 | 0.6 to 12 | ✓ | ✓ | Int | OTP, SCP | DIP (16x23) | DC/DC power supply with PMBus |
| N **mEZDPD4506A** | 6 | 4 to 45 | 0.6 to 22 | ✓ | ✓ | Int | OCP, OTP, OVP/UVP, SCP | DIP (8.8x18.8) | DC/DC power supply with PMBus |
| N **mEZDPD4506AS** | 6 | 4 to 45 | 0.6 to 22 | ✓ | ✓ | Int | OCP, OTP, OVP/UVP, SCP | LGA (10x10) | DC/DC power supply with PMBus |
| N **mEZDPD1620A** | 20 | 4 to 16 | 0.6 to 5.5 | ✓ | ✓ | Int | OCP, OTP, OVP/UVP, SCP | DIP (16x23) | Peak 25A, DC/DC power supply with PMBus |

## Buck ($V_{IN}$ Max > 36V)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **mEZDPD1620AS** | 20 | 4 to 16 | 0.6 to 5.5 | ✓ | ✓ | Int | OCP, OTP, OVP/UVP, SCP | DIP (16x23) | Peak 25A, DC/DC power supply with PMBus |
| **mEZD74800A-A** | 0.3 | 4.5 to 75 | 3.3 | - | - | Int | OCP, OTP, SCP, Hiccup | SiP-3 (10x20) | Low EMI |
| **mEZD74800A-B** | 0.3 | 4.5 to 75 | 5 | - | - | Int | OCP, OTP, SCP, Hiccup | SiP-3 (10x20) | Low EMI |
| N **mEZD74003L-ADJ** | 3 | 5 to 45 | 1.23 to 15 | ✓ | - | Int | UVLO, OCP, OTP, OVP | LGA (11x15) | Available in fixed output voltages of 3.3V, 5V, 12V, with integrated inductor |
| N **mEZD94003A-ADJ** | 3 | 5 to 45 | 1.23 to 15 | ✓ | - | Int | UVLO, OCP, OTP, OVP | LGA (11x15) | Available in fixed output voltages of 3.3V, 5V, 12V, without integrated inductor |

## PoE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N **mEZS84801A** | 1 | 37 to 57 | 12 | - | ✓ | Int | OCP, OTP, OVP | SiP-20 (45x39) | 12W, IEEE 802.3af-compliant PoE-powered device |

## USB

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| N **mEZS91202A** | 2.5 | 7 to 36 | 5 | - | - | Int | SCP, OTP, OCP | (31x13.28) | High-efficiency USB charger |

# REGULATORS | AUTOMOTIVE

## Buck Regulators — 5V to 6V Secondary Synchronous Buck

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Forced CCM | AAM | COT Control | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPM3805A-AEC1** | 2.6 | 6 | 0.6 | 1 | 17 | 0.6 | 3500 | 120/70 | 1.2, 1.8 | Int | - | ✓ | - | ✓ | - | ✓ | QFN-12 (2.5x3.0x0.9) | Module with integrated inductor |
| | **MPQ2171-AEC1** | 2.5 | 5.5 | 1 | 4.5 | - | 0.6 | 2800 | 80/40 | - | Int | - | ✓ | - | ✓ | - | - | TSOT23-8 | Output discharge, 100% duty cycle |
| N | **MPM3810A-AEC1** | 2.6 | 6 | 1.2 | 2.1 | 17 | 0.6 | 3500 | 120/70 | 1.2, 1.8 | Int | - | ✓ | - | ✓ | - | ✓ | QFN-12 (2.5x3.0x0.9) | Module with integrated inductor |
| | **MPQ2172-AEC1** | 2.5 | 5.5 | 2 | 4.5 | - | 0.6 | 2800 | 80/40 | - | Int | - | ✓ | - | ✓ | - | - | TSOT23-8 | Output discharge, 100% duty cycle |
| | **MPQ2169-AEC1** | 2.7 | 6 | 1.4 + 1.4 | 2 | 60 | 0.6 | 350 to 3000 | 55/20 | - | Ext | ✓ | ✓ | ✓ | - | ✓ | ✓ | QFN-18 (2.5x3.5) | Dual outputs of 1.4A/1.4A or 0.8A/2A, 100% duty cycle operation |
| | **MPQ2143-AEC1** | 2.5 | 5.5 | 3 | 4.8 | 40 | 0.6 | 1200 | 80/40 | - | Int | ✓ | - | ✓ | ✓ | - | - | TSOT23-8 | Output discharge, 100% duty cycle |
| N | **MPQ2124-AEC1** | 2.7 | 6 | 3 | 6.7 | 42 | 0.6 | 300 to 2200 | 35/25 | - | Ext | - | ✓ | ✓ | - | ✓ | ✓ | QFN-11 (2x3) | 100% duty cycle |
| | **MPQ2166-AEC1** | 2.7 | 6 | 2 + 2 | 2 | 60 | 0.6 | 350 to 3000 | 55/20 | - | Ext | ✓ | ✓ | ✓ | - | ✓ | ✓ | QFN-18 (2.5x3.5), QFN-18 (2x3) | Dual outputs of 2A/2A or 1A/3A, 100% duty cycle operation |
| N | **MPQ2167-AEC1** | 2.7 | 6 | 4 | 6.7 | 42 | 0.6 | 300 to 2200 | 35/25 | - | Ext | - | ✓ | ✓ | - | ✓ | - | QFN-11 (2x3) | 100% duty cycle |
| N | **MPQ2167B-AEC1** | 2.7 | 6 | 4 | 6.7 | 42 | 0.6 | 300 to 2200 | 35/25 | - | Ext | ✓ | ✓ | ✓ | - | ✓ | ✓ | QFN-11 (2x3) | 100% duty cycle |
| N | **MPQ2167A-AEC1** | 2.7 | 6 | 6 | 9 | 42 | 0.6 | 300 to 2200 | 35/25 | - | Ext | ✓ | ✓ | ✓ | - | ✓ | ✓ | QFN-14 (3x3) | 100% duty cycle |

## Buck Regulators — 36V to 45V Primary Synchronous Buck

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Spread Spectrum | Digital Interface | Forced CCM | AAM | COT Control | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPQ4300-AEC1** | 3.5 | 50 | 0.5 | 2 | - | - | 470 | 95/50 | 3.3, 3.8, 5 | Int | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | - | QFN-16 (4x3), QFN-16 (3x3) | MPQ4300 spread spectrum family, low component count |
| N | **MPM3509B-AEC1** | 4 | 40 | 0.6 | 5 | 600 | 0.8 | 410 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | Ultra-compact module with integrated inductor, BST/VCC capacitors |
| N | **MPM3509-AEC1** | 4 | 40 | 0.9 | 3 | 600 | 0.8 | 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | |
| N | **MPQ4301-AEC1** | 3.5 | 50 | 1 | 3 | - | - | 470 | 95/50 | 3.3, 3.8, 5 | Int | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | - | QFN-16 (4x3), QFN-16 (3x3) | MPQ4300 spread spectrum family, low component count |
| | **MPQ4431-AEC1** | 3.3 | 40 | 1 | 2.5 | 10 | 0.8 | 350 to 2500 | 90/80 | 3.3, 5 | Ext | ✓ | - | - | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | Low $I_Q$, good EMI, and low-dropout mode |
| | **MPM3515-AEC1** | 4 | 40 | 1.5 | 4 | 600 | 0.8 | 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | Ultra-compact module with integrated inductor, BST/VCC capacitors |
| | **MPQ4415M-AEC1** | 4 | 40 | 1.5 | 4 | 600 | 0.8 | 450 to 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-13 (2.5x3) | Integrated input capacitor |



N - New Product S - Sampling Product

# REGULATORS | AUTOMOTIVE

## Buck Regulators — 36V To 45V Primary Synchronous Buck

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Spread Spectrum | Digital Interface | Forced CCM | AAM | COT Control | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | MPQ4415A-AEC1 | 4 | 40 | 1.5 | 4 | 600 | 0.8 | 450 to 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-13 (2.5x3) | - |
| N | MPQ4302-AEC1 | 3.5 | 50 | 2 | 5 | - | - | 470 | 90/50 | 3.3, 3.8, 5 | Int | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | - | QFN-16 (4x3), QFN-16 (3x3) | MPQ4300 spread spectrum family, low component count |
| N | MPQ4312-AEC1 | 3.3 | 50 | 2 | 5.5 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low $I_Q$ spread spectrum family |
| | MPQ4420H-AEC1 | 4 | 40 | 2 | 4.2 | 500 | 0.8 | 410 | 90/55 | - | Int | ✓ | - | - | - | ✓ | - | ✓ | - | TSOT23-8 | - |
| | MPQ4420A-AEC1 | 4 | 40 | 2 | 5.6 | 500 | 0.8 | 410 | 90/55 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | - | TSOT23-8 | - |
| | MPQ4432-AEC1 | 3.3 | 40 | 2.2 | 5.2 | 10 | 0.8 | 350 to 2500 | 90/40 | 3.8, 5 | Ext | ✓ | - | - | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | Low $I_Q$, good EMI, and low-dropout mode |
| N | MPQ4303-AEC1 | 3.5 | 50 | 3 | 6 | - | - | 470 | 90/50 | 3.3, 3.8, 5 | Int | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | - | QFN-16 (4x3), QFN-16 (3x3) | MPQ4300 spread spectrum family, low component count |
| N | MPQ4313-AEC1 | 3.3 | 50 | 3 | 5.5 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low $I_Q$ spread spectrum family |
| | MPQ4433-AEC1 | 3.3 | 40 | 3 | 5.8 | 10 | 0.8 | 350 to 2500 | 90/40 | 5 | Ext | ✓ | - | - | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | Low $I_Q$, good EMI, and low-dropout mode |
| | MPQ4423H-AEC1 | 4 | 40 | 3 | 4.4 | 500 | 0.8 | 410 | 85/55 | - | Int | ✓ | - | - | - | ✓ | - | ✓ | ✓ | QFN-8 (3x3) | - |
| | MPQ4423A-AEC1 | 4 | 40 | 3 | 5.7 | 600 | 0.8 | 410 | 85/55 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | - | QFN-8 (3x3) | - |
| S | MPQ8883-AEC1 | 3.5 | 48 | 3 | 1 to 8 | - | - | 250 to 2500 | 95/50 | 1.8 to 12 | Int | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | QFN-16 (3X3) | I²C interface, OTP, digitally programmable output voltage, freq. compensation, protection, slew rate, and more |
| | MPQ4473-AEC1 | 4.5 | 40 | 3.5 | 6.6 | 500 | 0.8 | 200 to 1000 | 40/20 | - | Ext | - | - | - | - | - | ✓ | - | - | QFN-20 (3x4) | - |
| | MPQ4430-AEC1 | 3.3 | 40 | 3.5 | 5.8 | 10 | 0.8 | 350 to 2500 | 90/40 | 3.8, 5 | Ext | ✓ | - | - | ✓ | ✓ | - | ✓ | ✓ | QFN-16 (3x4) | Low $I_Q$, good EMI, low-dropout mode |
| N | MPQ4314-AEC1 | 3.3 | 50 | 4 | 8 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low $I_Q$ spread spectrum family |
| | MPQ4470-AEC1 | 4.5 | 40 | 5 | 8 | 500 | 0.8 | 100 to 1000 | 40/20 | - | Ext | - | - | - | - | | ✓ | - | - | QFN-20 (3x4) | Programmable soft-start time, SCP, OCP, OVP latch |
| | MPQ4470A-AEC1 | 4.5 | 40 | 5 | 8 | 500 | 0.8 | 100 to 1000 | 40/20 | - | Ext | - | - | - | - | - | ✓ | - | - | QFN-20 (3x4) | Programmable soft-start time, SCP, OCP |
| N | MPQ4315-AEC1 | 3.3 | 50 | 5 | 8 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low $I_Q$ spread spectrum family |
| N | MPQ4480-AEC1 | 4.2 | 40 | 6 | 17 | 1000 | 1 | 235 to 2200 | 20/15 | - | Int | ✓ | ✓ | - | - | - | - | ✓ | ✓ | QFN-25 (4x5) | Adjustable line drop compensation, forced PWM mode, low-dropout mode |
| N | MPQ4316-AEC1 | 3.3 | 50 | 6 | 13 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low $I_Q$ spread spectrum family |
| N | MPQ4436-AEC1 | 3.3 | 50 | 6 | 13 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | Multi-phase, low $I_Q$ |
| N | MPQ4317-AEC1 | 3.3 | 50 | 7 | 13 | 10 | 0.8 | 350 to 530 | 40/17 | 3.3, 5 | Ext | ✓ | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | QFN-20 (4x4) | MPQ4312 low-$I_Q$ spread-spectrum family |
| | MPQ2918-AEC1 | 4 | 40 | Cntlr | - | 750 | 0.8 | 100 to 1000 | - | - | Ext | ✓ | - | - | ✓ | ✓ | - | ✓ | - | TSSOP-20EP, QFN-20 (3x4) | High max duty cycle (99.5%) |

# REGULATORS | AUTOMOTIVE

## Buck Regulators | HV Synchronous Buck

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Forced CCM | AAM | Hysteretic Control | Fixed Frequency | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ4569-AEC1** | 4.5 | 80 | 0.3 | 0.72 | 20 | 1 | - | 1200/450 | - | Ext | - | - | ✓ | ✓ | - | QFN-10 (3x3), SOIC-8E | Programmable soft start |
| **MPQ4569A-AEC1** | 4.5 | 80 | 0.3 | 0.72 | 20 | 1 | - | 1200/500 | - | Ext | - | - | ✓ | ✓ | - | QFN-10 (3x3) | Programmable soft start, default enable on |
| **MPQ2420-AEC1** | 4.5 | 80 | 0.3 | 0.72 | 20 | 1 | - | 1200/450 | - | Ext | - | - | ✓ | ✓ | - | TSSOP-16 | Integrated separate windowed watchdog die |
| **MPQ2420A-AEC1** | 4.5 | 80 | 0.3 | 0.72 | 20 | 1 | - | 1200/450 | - | Ext | - | - | ✓ | ✓ | - | TSSOP-16 | Integrated separate windowed watchdog die, default enable on |
| N **MPQ4590-AEC1** | 7.5 | 700 | 0.4 | 0.66 | 200 | 1.7 | - | 13.5 | - | Int | - | ✓ | - | ✓ | - | SOIC-8E | Primary-side CV control, supporting buck, buck-boost, boost, and flyback topologies |
| N **MPQ4571-AEC1** | 4.5 | 65 | 1 | 1.9 | 30 | 0.8 | 200 to 2200 | 200/45 | - | Int | ✓ | ✓ | ✓ | - | ✓ | QFN-12 (2.5x3) | Low $I_Q$, compact |
| N **MPQ4572-AEC1** | 4.5 | 65 | 2 | 3.5 | 30 | 0.8 | 200 to 2200 | 200/45 | - | Int | ✓ | ✓ | ✓ | - | ✓ | QFN-12 (2.5x3) | Low $I_Q$, compact |
| **MPQ4570-AEC1** | 4.5 | 60 | 3 | 5.7 | 520 | 1 | 100 to 1000 | 90/70 | - | Ext | ✓ | - | ✓ | - | ✓ | TSSOP-20EP | Programmable soft-start time |
| **MPQ2908A-AEC1** | 4 | 60 | Cntlr | - | 750 | 0.8 | 100 to 1000 | - | - | Ext | ✓ | ✓ | ✓ | - | ✓ | TSSOP-20EP, QFN-20 (3x4) | High max duty cycle (99.5%) |

## Buck Regulators | Buck Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_Q$ (Typ) (µA) | $I_{SD}$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Fixed Output Versions (V) | Soft Start | External Sync | Forced CCM | AAM | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ2908A-AEC1** | 4 | 60 | 750 | 0.5 | 0.8 | 100 to 1000 | - | Ext | ✓ | ✓ | ✓ | ✓ | ✓ | TSSOP-20EP, QFN-20 (3x4) | High max duty cycle (99.5%) |
| **MPQ2918-AEC1** | 4 | 40 | 750 | 0.5 | 0.8 | 100 to 1000 | - | Ext | ✓ | ✓ | ✓ | ✓ | ✓ | TSSOP-20EP, QFN-20 (3x4) | High max duty cycle (99.5%) |

## Buck Regulators | Buck Modules

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Spread Spectrum | Digital Interface | Forced CCM | AAM | COT Control | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N **MPM3805A-AEC1** | 2.6 | 6 | 0.6 | 1 | 17 | 0.6 | 3500 | 120/70 | 1.2, 1.8 | Int | - | - | - | ✓ | - | ✓ | - | ✓ | QFN-12 (2.5x3.0x0.9) | Module with integrated inductor |
| N **MPM3810A-AEC1** | 2.6 | 6 | 1.2 | 2.1 | 17 | 0.6 | 3500 | 120/70 | 1.2, 1.8 | Int | - | - | - | ✓ | - | ✓ | - | ✓ | QFN-12 (2.5x3.0x0.9) | |
| N **MPM3509B-AEC1** | 4 | 40 | 0.6 | 5 | 600 | 0.8 | 410 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | Ultra-compact module with integrated inductor, BST/VCC capacitors |
| N **MPM3509-AEC1** | 4 | 40 | 0.9 | 3 | 600 | 0.8 | 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | Ultra-compact module with integrated inductor, BST/VCC capacitors |
| **MPM3515-AEC1** | 4 | 40 | 1.5 | 4 | 600 | 0.8 | 2200 | 90/50 | - | Int | ✓ | - | - | ✓ | - | - | ✓ | ✓ | QFN-17 (3x5x1.6) | |



N - New Product S - Sampling Product

# REGULATORS | AUTOMOTIVE

## Buck Regulators — Non-Synchronous Buck

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | $I_{OUT}$ (A) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions (V) | Soft Start | External Sync | Spread Spectrum | Digital Interface | Forced CCM | COT Control | Fixed Frequency | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ2459-AEC1** | 4.5 | 60 | 0.5 | 1.25 | 730 | 0.8 | 480 | 1000 | - | Int | - | - | - | ✓ | - | ✓ | TSOT23-6 | Superior light-load efficiency |
| **MPQ2451-AEC1** | 3.3 | 40 | 0.6 | 1 | 130 | 0.8 | 2000 | 500 | 3.3, 5 | Int | - | - | - | ✓ | - | ✓ | TSOT23-6L, QFN-6L | Internal comp and SS, programmable |
| **MPQ2454-AEC1** | 3.3 | 40 | 0.6 | 1.8 | 60 | 0.8 | 350 to 2300 | 200 | - | Ext | ✓ | - | - | ✓ | - | ✓ | QFN-10 (3x3), MSOP-10EP | Superior light-load efficiency |
| **MPQ4558-AEC1** | 3.8 | 60 | 1 | 1.9 | 140 | 0.8 | 200 to 2000 | 250 | - | Int | - | - | - | ✓ | - | ✓ | QFN-10 (3x3), SOIC-8E | Superior light-load efficiency |
| **MPQ4559-AEC1** | 3.8 | 60 | 1.5 | 2.3 | 140 | 0.8 | 200 to 2000 | 250 | - | Int | - | - | - | ✓ | - | ✓ | QFN-10 (3x3) | Superior light-load efficiency |
| **MPQ4561-AEC1** | 3.8 | 60 | 1.5 | 2.5 | 140 | 0.8 | 250 to 2000 | 300 | - | Ext | - | - | - | ✓ | - | ✓ | QFN-10 (3x3) | Superior light-load efficiency |
| **MPQ4560-AEC1** | 3.8 | 60 | 2 | 3.2 | 140 | 0.8 | 250 to 2000 | 250 | - | Int | - | - | - | ✓ | - | ✓ | QFN-10 (3x3), SOIC-8E | Superior light-load efficiency |
| **MPQ4462-AEC1** | 3.8 | 40 | 3.5 | 5.5 | 120 | 0.8 | 250 to 4000 | 150 | - | Int | - | - | - | ✓ | - | ✓ | QFN-10 (3x3), SOIC-8E | Superior light-load efficiency |
| N **MPQ4467-AEC1** | 3.3 | 40 | 2.5 | 5.6 | 10 | 0.8 | 350 to 2500 | 95 | - | Ext | ✓ | - | - | ✓ | - | ✓ | QFN-16 (3x4) | Low dropout, selectable in-phase or 180° out-of-phase |
| N **MPQ4468-AEC1** | 3.3 | 40 | 3 | 5.8 | 10 | 0.8 | 350 to 2500 | 90 | - | Ext | ✓ | - | - | ✓ | - | ✓ | QFN-16 (3x4) | Low dropout, selectable in-phase or 180° out-of-phase |
| N **MPQ4469-AEC1** | 3.3 | 40 | 5 | 7.7 | 10 | 0.8 | 350 to 2500 | 90 | - | Ext | ✓ | - | - | ✓ | - | ✓ | QFN-20 (4x5) | Low dropout, selectable in-phase or 180° out-of-phase |
| **MPQ2362-AEC1** | 4.75 | 25 | Dual 2 | 3.4 | 2000 | 1.222 | 380 | 180 | - | Int | ✓ | - | - | ✓ | - | ✓ | TSSOP-20F | Dual output |

## Buck-Boost Regulators — Buck-Boost Converters

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | $I_{OUT}$ (Typ) (A) | $I_Q$ (Typ) (µA) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Interface | Spread Spectrum | Fixed Frequency | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N **MPQ8875A-AEC1** | 2.2 | 42 | 0.5 to 36 | 5 | 200 | 100 to 750 | 2x 10/20 | I²C | ✓ | ✓ | ✓ | QFN-34 (4x5) | 30W, OTP programmable, four-switch buck-boost with advanced protection |

## Boost Regulators — Synchronous Boost

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions | Fixed Frequency | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ3410-AEC1** | 1.8 | 6 | 6 | 1.3 | 360 | 1.19 | 550 | 530/300 | - | ✓ | TSOT23-5 | Output disconnect |
| N **MPQ3428A-AEC1** | 3 | 20 | 22 | 19 | 110 | 1.2 | 600 | 18 | - | ✓ | QFN-22 (3x4) | Input disconnect function, external high-side gate drive |
| N **MPQ3431A-AEC1** | 0.8 | 13 | 16 | 21 | 25 | 1.0 | 470 | 15/11.5 | - | ✓ | QFN-13 (3x4) | Programmable input current limit, supports 40W peak power load from 3.3V, selectable PSM and FCCM, adaptive COT |

# REGULATORS | AUTOMOTIVE

## Boost Regulators | Boost Controllers

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_Q$ (Typ) (µA) | $I_{SD}$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Soft Start | Sync | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S | **MPQ3910A-AEC1** | 5 | 35 | 0.29 | 1 | 1.5 | 30 to 400 | Ext | ✓ | MSOP-10 | Peak current mode, light-load operation, supports >10A, OVP, SCP, OTP |

## Boost Regulators | Non-Synchronous Boost

| Part Number | $V_{IN}$ (Min) (V) | $V_{SW}$ (Max) (V) | $V_{OUT}$ (Max) (V) | $I_{SW}$ Limit (Typ) (A) | $I_Q$ (Typ) (µA) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | $R_{DS(ON)}$ (mΩ) | Fixed Output Versions | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ3425-AEC1** | 3.1 | 55 | 55 | 5 | 650 | 1.23 | 300 to 2000 | 90 | - | QFN-14 (3x4) | Programmable UVLO and EN hysteresis |
| **MPQ3426-AEC1** | 3.2 | 45 | 35 | 8.5 | 650 | 1.23 | 300 to 2000 | 90 | - | QFN-14 (3x4) | Programmable UVLO and EN hysteresis |

## DDR Memory Power

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Typ) (A) | Accuracy for VTT, VTTREF (mV) | V Driver (V) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| N | **MPQ20073-AEC1** | 1.3 | 6 | 2 | 30 | 3.3 | MSOP-8E | DDR2/3 termination regulator |

## Audio Products (Class-D Audio Amplifiers)

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $P_{OUT}$ (W) | Efficiency (%) | THD+N (%) | PSRR (dB) | Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPQ7790-AEC1** | 5.5 | 18 | 15 | 90 | 0.79 @ 1W | 20 | Mono | TSSOP-20EP | Low EMI, analog input Class D for mono speaker in bridge-tied load configuration |

## Supervisory Circuits

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Reset Threshold (V) | Threshold Accuracy (%) | $I_Q$ (Typ) (µA) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| | **MPQ6400-33-AEC1** | 1.8 | 5.5 | 3.07 | ±1.0 | 1.6 | QFN-6 (2x2) | Voltage supervisor, 3.3V |
| N | **MPQ6400-01-AEC1** | 0.9 | 5.5 | 0.4 | ±1.0 | 1.6 | QFN-6 (2x2) | Voltage supervisor, adjustable |
| | **MPQ6411-AEC1** | 4.8 | 5 | 4.5 | - | 16 | SOIC-8E | 5V $V_{DD}$, windowed watchdog, power-on reset |
| | **MPQ6411-33-AEC1** | 3.1 | 3.3 | 2.9 | - | 10 | SOIC-8E | 3.3V $V_{DD}$, windowed watchdog, power-on reset |

## Analog Switches

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Switcher Current (A) | $t_{ON}$ (ns) | $t_{OFF}$ (ns) | Power Supply Current (µA) | Fixed Output Versions | Bandwidth (MHz) | $R_{DS(ON)}$ (mΩ) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ2735-AEC1** | 1.65 | 5.5 | 0.1 | 29 | 23 | 1 | - | 50 | 0.25 | QFN-10 (1.4x1.8) | Low-voltage 0.45Ω dual SPDT analog switches, separate control inputs |



N - New Product S - Sampling Product

# REGULATORS | AUTOMOTIVE

## Load Switches

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Load Current | $I_Q$ (Typ) (mA) | $R_{DS(ON)}$ (mΩ) | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MPQ5073-AEC1** | 0.5 | 5.5 | 2 | 0.18 | 50 | QFN-12 (2x2) | Adjustable current limit |
| S **MPQ5069-AEC1** | 4.5 | 28 | 10 | 1.5 | 7 | QFN-22 (3x5) | Adjustable current limit |

# USB CHARGERS | AUTOMOTIVE

## USB PD Solutions

Buck-Boost for USB PD

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | Supports USB PD | Battery Short Protection | Frequency Spread Spectrum | Line Drop Compensation | $I^2C$ Interface | EN Shutdown Discharge | Load Shedding Send Alert | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N **MPQ4214 (Controller)** | 5 | 45 | - | - | Selectable | ✓ | ✓ | ✓ | - | ✓ | - | - | ✓ | QFN-27 (5x5) | Sync, FCCM mode, current limit adjusting through IPWM pin |
| S **MPQ4210 (Controller)** | 5 | 45 | - | - | Selectable | ✓ | - | ✓ | - | ✓ | - | - | ✓ | QFN-27 (5x5) | 100W synchronous controller with $I^2C$ output current monitor function |
| S **MPQ4230 (Converter)** | 4 | 40 | 6A Peak | 0.3 | Selectable | ✓ | ✓ | ✓ | ✓ (Adj) | ✓ | ✓ | ✓ | ✓ | QFN-21 (4x5) | Supports 60W buck-boost or 6A peak $I_{OUT}$ |

## All-in-One USB-C/A Charging-Only Port Solutions

### Dual USB Type-C & Type-A Charging Port Solutions (Buck with Integrated CLS, Protocol Detection)

| Part Number | $V_{IN}$ (ABS Max) | $V_{IN}$ (Max) (V) | Dual/Single Ports | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | BC 1.2 DCP | 1.2V/1.2V Mode | Divider Mode 3 | Type-C DFP (w/o PD) | Type-A Mode | Load Shedding | Frequency Spread Spectrum | Internal USB Switch | Line Drop Compensation | USB Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ4487** | 6 | 40 | Dual | 3 (x2) | 1 | Selectable | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-26 (5x5) | Load shedding vs. temperature |
| **MPQ4488** | 6 | 40 | Dual | 3 (x2) | 1 | Selectable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-26 (5x5) | Selectable $V_{OUT}$: 5.1V/5.17V/5.3V |
| S **MPQ4488T** | 6 | 40 | Dual | 3 (x2) | 1 | Adjustable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-26 (5x5) | 135°C load-shedding temp |
| N **MPQ4253** | 6 | 40 | Dual | 3 (x2) | 1 | Selectable | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ (Type-C) | - | ✓ | ✓ | ✓ | QFN-26 (5x5) | Low $I_Q$ (Type-A/C) |

# USB CHARGERS | AUTOMOTIVE

## All-in-One USB-C/A Charging-Only Port Solutions

### Single USB Type-C & Type-A Charging Port Solutions (Buck with Integrated CLS, Protocol Detection)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | Dual/Single Ports | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | BC 1.2 DCP | 1.2V/1.2V Mode | Divider Mode 3 | QC2.0 | QC3.0 | Type-C DFP (w/o PD) | Type-A Mode | Load Shedding | Battery Short Protection | Low-Dropout Mode | Frequency Spread Spectrum | Internal USB Switch | Line Drop Compensation | EN Shutdown Discharge | USB Discharge | Fault Indication | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ4475-E** | 7 | 40 | Single | 2.5 | 1.6 | Select | ✓ | ✓ | ✓ | - | - | - | ✓ | - | - | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | QFN-25 (4x4) | Programmable line drop compensation |
| **MPQ4491** | 7 | 40 | Single | 2.5 | 1.6 | Select | ✓ | ✓ | ✓ | - | - | - | ✓ | - | - | - | - | ✓ | ✓ | ✓ | ✓ | - | - | QFN-25 (4x4) | Auto-detect, cable compensation |
| **MPQ4481** | 6 | 40 | Single | 3 | 0.7 | Select | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | - | ✓ | - | ✓ | ✓ | - | ✓ | ✓ | - | QFN-26 (5x5) | EN and Fault pins support hub |
| N **MPQ4481-FD** | 6 | 40 | Single | 3 | 0.7 | Select | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | - | ✓ | ✓ | ✓ | ✓ | - | ✓ | ✓ | - | QFN-26 (5x5) | EN and Fault pins support hub |
| S **MPQ4490** | 6 | 40 | Single | 3 | 0.2 | Adj | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | - | - | - | ✓ | ✓ | - | ✓ | - | - | QFN-26 (5x5) | Low $I_Q$, FCCM |
| S **MPQ4482** | 4 | 40 | Single | 3 | 0.8 | Select | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | - | ✓ | - | ✓ | QFN-22 (4x4) | 3.55A/2.75A USB current limit with FCCM |
| S **MPQ4482-Q** | 4 | 40 | Single | 3 | 0.8 | Select | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | ✓ | - | ✓ | - | ✓ | QFN-22 (4x4) | Accurate USB current limit with FCCM |

## All-in-One Data Port Products

### Dual USB Type-C & Type-A Charging Data Ports (Buck with Integrated CLS, USB 2.0 Data Switch, Protocol Detection)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | Dual/Single Ports | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | BC 1.2 CDP (Data) | BC 1.2 DCP | 1.2V/1.2V Mode | Divider Mode 3 | Type-C DFP (w/o PD) | Type-A Mode | Load Shedding | Internal USB Switch | Line Drop Compensation | USB Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ4485** | 6 | 40 | Dual | 3 (x2) | 1 | 450 | ✓ (USB2) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-26 (5x5) | Forced CCM operation |



N - New Product S - Sampling Product

# USB CHARGERS | AUTOMOTIVE

## All-in-One Data Port Products

### Single USB Type-C & Type-A Charging Data Ports (Buck + Integrated CLS, USB 2.0 Data Switch, Protocol Detection)

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) | Dual/Single Ports | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | BC 1.2 CDP (Data) | BC 1.2 DCP | 1.2V/1.2V Mode | Divider Mode 3 | Type-C DFP (w/o PD) | Type-A Mode | Load Shedding | Battery Short Protection | Low-Dropout Mode | Frequency Spread Spectrum | Internal USB Switch | Line Drop Compensation | EN Shutdown Discharge | USB Discharge | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPQ4482-C | 4 | 40 | Single | 3 | 0.8 | Select | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | - | - | ✓ | | ✓ | - | ✓ | ✓ | QFN-22 (4x4) | Supports CDP mode, USB Type-C 5V @ 3A DFP mode, 3.55A/2.75A USB current limit with FCCM |
| S MPQ4483 | 4.2 | 40 | Single | 3 | 1 | Select | ✓ | ✓ | - | - | - | ✓ | - | ✓ | ✓ | - | ✓ (Adj CC Limit) | ✓ (Adj) | ✓ | - | ✓ | | QFN-25 (4x5) | Supports BC1.2 DCP and CDP mode, bidirectional USB 2.0 high-speed data switch, low-dropout mode, 3.55A/3.75A CC output current limit |
| S MPQ4483-FD | 4.2 | 40 | Single | 3 | 1 | Adj | ✓ | ✓ | - | - | - | ✓ | - | ✓ | ✓ | ✓ | ✓ (Adj CC Limit) | ✓ (Adj) | ✓ | - | ✓ | | QFN-25 (4x5) | |

## USB-C/A Port Controller and Buck Products — Buck Only

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | $f_{SW}$ (kHz) | Battery Short Protection | Low-Dropout Mode | Internal USB Switch | Line Drop Compensation | EN Shutdown Discharge | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPQ4480 | 4.2 | 40 | 6 | 1 | Selectable | ✓ | ✓ | ✓ (Adj CC Limit) | ✓ | ✓ | ✓ | QFN-25 (4x5) | - |

## USB-C/A Port Controller and Buck Products — USB Type-C & Type-A Charging Port Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | Dual/Single Ports | $I_{OUT}$ (A) | $I_Q$ (Typ) (mA) | BC 1.2 CDP (Data) | BC 1.2 DCP | 1.2V/1.2V Mode | Divider Mode 3 | QC2.0/QC3.0 | Type-C DFP (w/o PD) | Type-A Mode | Load Shedding | Battery Short Protection | Internal USB Switch | Line Drop Compensation | USB Discharge | Fault Indication | Client Mode | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPQ5029 | 2.7 | 24 | Single | 3 | 0.155 | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ (Adj) | ✓ (Adj) | ✓ | - | - | ✓ | QFN-14 (2x3) | NTC pin for thermal management, adjustable OVP threshold, input over-voltage shutdown protection |
| S MPQ5029-C | 2.7 | 24 | Single | 3 | 0.175 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | QFN-14 (2x3) | - |

# POSITION SENSORS | AUTOMOTIVE

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Supply Current (mA) | Resolution (Bits) | Output Format | ABZ Resolution (Bits) | PWM Frequency (Hz) | Latency (µs) | Start-Up Time (ms) | Refresh Rate (kHz) | Filter Cutoff Frequency (Hz) | Magnetic Field Detection | Magnetic Field Range (mT) | Wettable Flank QFN Option | Package | Supported Magnet Topology |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MAQ430-AEC1 | 3 | 3.6 | 11.7 | 12 | SPI, ABZ, UVW | 10 | - | 10 | 12 | 980 | 390 | ✓ | 30 to 150 | ✓ | QFN-16 (3x3) | End-of-shaft, side-shaft |
| MAQ470-AEC1 | 3 | 3.6 | 11.7 | 12 | SPI, SSI, ABZ, PWM | 10 | 240 | 10 | 12 | 980 | 390 | ✓ | 30 to 150 | ✓ | QFN-16 (3x3) | End-of-shaft, side-shaft |

# MOTOR DRIVERS | AUTOMOTIVE

## Half-Bridge Gate Drivers

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{SW}$ (Max) (V) | HS Gate Drive (Max) (V) | # of Channels | Peak Pull-Up Current (A) | Peak Pull-Down Current (A) | Rise Time (ns) | Fall Time (ns) | Turn-Off/On Delay (ns) | Wettable Flank Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPQ18021-A-AEC1** | 9 | 18 | 100 | 18 | 1 | 2.5 | 3.5 | 12 | 9 | 5 | ✓ | SOIC-8E | 100V |
| N | **MPQ18024-AEC1** | 9 | 18 | 100 | 18 | 1 | 4 | 5.9 | 15 | 12 | 20 | ✓ | SOIC-8E | 100V |
| | **MPQ1922-AEC1** | 4 | 15 | 100 | 15 | 1 | - | - | 20µs | 20µs | 20µs | ✓ | SOIC-8E, QFN-10 (4x4) | Integrated current sense amp 9ns to 15ns rise/fall (2.2nF load) |

## Half-Bridge Drivers (Integrated MOSFET)

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | BST to SW (Max) (V) | # of Channels | $R_{DS(ON)}$ (mΩ) | Standby $I_Q$ (Typ) | Peak Output Current (A) | Rise Time (µs) | Fall Time (µs) | Turn-Off/On Delay (µs) | Open-Load Detection | Serial Interface | Wettable Flank Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MPQ8039-AEC1** | 7.5 | 28 | 6 | 1 | 100 | 2.5 | 9 | 20ns | 20ns | 70ns | - | - | ✓ | SOIC-8E | General-purpose, high-frequency half-bridge for audio amplifier, wireless charging, and more |
| | **MPQ6523-AEC1** | 7 | 40 | 1 | 3 | 1100 | 6 | 0.9 | 20 | 20 | 60 | ✓ | ✓ | ✓ | QFN-24 (4x4) | Independent half-bridge control, comprehensive protections, daisy-chainable, serial data interface up to 3MHz |
| | **MPQ6526-AEC1** | 7 | 40 | 1 | 6 | 650 | 6 | 0.9 | 20 | 20 | 50 | ✓ | ✓ | ✓ | QFN-24 (4x4), QFN-24 (5x5) | Independent half-bridge control, comprehensive protections, daisy-chainable |
| S | **MPQ6527-AEC1** | 5.5 | 40 | 1 | 10 | 1300 | 6 | 0.8 | 2 | - | - | ✓ | ✓ | ✓ | TSSOP-28EP | Independent half-bridge control, comprehensive protections, daisy-chainable, SPI interface up to 5MHz |

# LED LIGHTING | AUTOMOTIVE

## Backlight

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Topology | # of Channels | $I_{OUT}$ per Channel (mA) | $f_{SW}$ (kHz) | Dimming Modes | LED Protection | Channel Current Matching (%) | Interface | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MPQ3386-AEC1** | 4.5 | 25 | Boost | 6 | 30 | 625 or 1250 | PWM, Analog | Open, Short | 3% | - | QFN-24 (4x4) | 3% current matching accuracy |
| | **MPQ3387L-AEC1** | 3 | 25 | Boost | 6 | 45 | 500 or 1250 | PWM, Analog | Open, Short | 3% | - | QFN-24 (4x4) | 3% current matching accuracy |
| N | **MPQ3367-AEC1** | 3.5 | 36 | Boost | 6 | 100 | 200, 400, 1000, 2200 | PWM, Analog | Open, Short | 2.5% | I²C | QFN-24 (4x4), TSSOP-28EP | Spread spectrum, thermal derating, fault pin, rich protection features |

## Tell-Tale

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Topology | # of Channels | $I_{OUT}$ per Channel (mA) | $f_{SW}$ (kHz) | Dimming Modes | LED Protection | Channel Current Matching (%) | Interface | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | **MPQ3326-AEC1** | 2.7 | 18 | Linear | 16 | 25 | Selectable | PWM, Analog | Open, Short | 2% | I²C | QFN-24 (4x4), TSSOP-28EP | Independent channel control, daisy-chainable, digital configuration |



N - New Product S - Sampling Product

# LED LIGHTING | AUTOMOTIVE

## Illumination & Signaling LED Drivers

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | LED Power (W) | Topology | Max LEDs in Series | Max Continuous Current (A) | Current Limit (Typ) (A) | $R_{DS(ON)}$ (mΩ) | Dimming Modes | $f_{SW}$ (kHz) | LED Protection | Spread Spectrum | Multi-Phase | Fault Pin | Example Lighting Application | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MPQ2489-AEC1** | 6 | 55 | 4 | Low-Side Buck | 10 | 1.4 | Adj | 500 | PWM, Analog | 200 to 600 | Open | - | - | - | Stop Light, Turning Light | - | QFN-6 (3x3) | - |
| | **MPQ2483A-AEC1** | 4.5 | 55 | 10 | Buck, Buck-Boost | 10 | 2.5 | 3 | 280 | PWM, Analog | 250 to 1350 | Open, Short | - | - | - | Daytime Running Light, Fog Light | - | QFN-10 (3x3), SOIC-14 | Output short-circuit protection |
| S | **MPQ2484-AEC1** | 4.5 | 45 | Adj | Buck, Boost, Buck-Boost | 20 | Cntlr | Adj | - | PWM, Analog | 100 to 2200 | Open, Short | ✓ | - | - | Daytime Running Light, Fog Light | - | TSSOP-28EP | Cycle-by-cycle current limit output over-voltage protection, open LED protection, fault flag output |
| N | **MPQ24833B-AEC1** | 4.5 | 55 | 12 | Buck, Buck-Boost | 10 | 3 | 6 | 150 | PWM, Analog | 420 | Open | - | - | - | Daytime Running Light, Fog Light | - | SOIC-8EP | Output short-circuit protection |
| | **MPM6010-AEC1** | 4 | 40 | 12 | Buck | 2 | 1.5 | 4 | 85/50 | PWM | 2200 | Open, Short | - | - | ✓ | Rear Light, Puddle Light, Fog Light | ✓ | QFN-17 (3x5x1.6) | Module with integrated AEC-Q100 2.2µH inductor and BST/VCC capacitors, synchronous operation, output OCP |
| | **MPQ4425A-AEC1** | 4 | 40 | 12 | Buck | 2 | 1.5 | 4 | 85/50 | PWM | 2200 | Open, Short | - | - | ✓ | Rear Light, Puddle Light, Fog Light | ✓ | QFN-13 (2.5x3) | Synchronous operation, output OCP |
| | **MPQ4425B-AEC1** | 4 | 40 | 12 | Buck | 2 | 1.5 | 4 | 85/50 | PWM | 400 | Open, Short | - | - | ✓ | Rear Light, Puddle Light, Fog Light | ✓ | QFN-13 (2.5x3) | |
| S | **MPQ7200-AEC1** | 4.5 | 50 | 20 | Buck, Buck-Boost | 7 | 3 Buck/ 1.2A Buck-Boost | 6 | 40/38 | PWM, Analog | 2300 Buck, 1150 Buck-Boost | Open, Short | ✓ | ✓ | ✓ | Daytime Running Light, Fog Light, Low Beam, High Beam | ✓ | QFN-19 (3x4) | Integrated current sense, configurable 1.2A buck-boost or 3A buck, fast transient operation, thermal derating, two-step dimming, external NTC |

## Dynamic Lighting And Matrix Dimming

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (ABS Max) (V) | Topology | # of Channels | $I_{OUT}$ per Channel (mA) | $f_{SW}$ (kHz) | Dimming Modes | LED Protection | Spread Spectrum | Channel Current Matching (%) | Interface | Wettable Flank QFN Option | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | **MPQ7220-AEC1** | 3.5 | 42 | Boost | 6 | 100 | 200, 400, 1000, 2200 | PWM, Analog | Open, Short | ✓ | 2.5 | - | - | QFN-24 (4x4), TSSOP-28EP | External sync SW function disconnects $V_{OUT}$ from $V_{IN}$ cycle-by-cycle current limiting |
| S | **MPQ7221-AEC1** | 4 | 14 | Linear | 16 | 80 | Selectable | PWM, Analog | Open, Short | - | 2 | $I^2C$ | ✓ | QFN-24 (4x4) | 6-bit analog dimming for each channel, 12-bit PWM dimming for each channel, refresh signal output |

# LINEAR REGULATORS | AUTOMOTIVE

## 5V Secondary LDOs

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (mA) | Load Reg (%/mA) | PSRR @ 1kHz (dB) | $V_{FB}$ (V) | $I_Q$ (Typ) (µA) | Enable Pin | Adjustable Option (V) | Fixed Output Versions | Power Good | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ20056-AEC1** | 2.5 | 5.5 | 250 | 0.0003 | 63 | 0.8 | 10 | ✓ | 0.8 to 5 | 1.8V, 2.5V, 3.3V | - | QFN-8 (2x2), TSOT23-5 | - |
| **MPQ8904-AEC1** | 2.7 | 6.5 | 500 | 0.001 | 26 | 0.5 | - | ✓ | 0.5 to 5 | - | ✓ | QFN-8 (2x3) | - |
| **MPQ20051-AEC1** | 2.5 | 5.5 | 1000 | 0.0003 | 63 | 0.8 | 30 | ✓ | 0.8 to 5 | - | - | QFN-8 (3x3) | - |

## 40V Primary LDOs

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ2016-AEC1** | 4 | 42 | 30 | 0.003 | 50 | 1.23 | 12 | ✓ | 1.2 to 20 | - | - | QFN-8 (2x3) | - |
| **MPQ2013AGJE -C672-AEC1** | 2.5 | 40 | 100 | 0.005 | 41 | 1.215 | 3.2 | ✓ | 1.215 to 15 | 3.3V, 2.5V, 5V | - | TSOT23-4 | - |
| **MPQ2013A-AEC1** | 2.5 | 40 | 150 | 0.005 | 41 | 1.215 | 3.3 | ✓ | 1.215 to 15 | QFN-8: 3.3V, 2.5V, 5V, 1.8V QFN-6: 3.3V, 5V | - | QFN-6 (2x2), QFN-8 (3x3) | - |
| **MPQ2019-AEC1** | 3 | 40 | 300 | 0.04 | 45 | 1.25 | 10 | ✓ | 1.2 to 15 | 3.3V, 5V | ✓ | SOIC-8EP | - |
| **MPQ2029-AEC1** | 3 | 40 | 450 | 0.04 | 45 | 1.25 | 10 | ✓ | 1.2 to 15 | - | ✓ | SOIC-8EP | - |



N - New Product S - Sampling Product P - Preview

## AC Buck

| | Part Number | Typ Max Power (W) | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Control Method | $R_{DS(ON)}$ (Ω) | Breakdown Voltage (V) | No-Load Power (mW) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| | **MP100L** | 0.5 | 85AC | 305AC | Smart LDO | 9.5 | 700 | 100 | SOIC-8E | Inductorless regulator for low-power applications, up to 0.5W |
| | **MP103** | 1.0 | 85AC | 305AC | Smart LDO | NA | 700 | 100 | SOIC-8E | Inductorless controller for low-power applications, up to 1W |
| | **MP150** | 2.0 | 20 | 265AC | Non-Isolated | 30 | 500 | 150 | TSOT23-5, SOIC-8 | Offline regulator, up to 200mA output current |
| | **MP155** | 3.0 | 20 | 265AC | Non-Isolated | 20 | 500 | 100 | TSOT23-5, SOIC-8 | Offline regulator, up to 220mA output current |
| | **MP157** | 6.0 | 20 | 265AC | Non-Isolated | 10 | 500 | 100 | TSOT23-5, SOIC-8 | Offline regulator, up to 360mA output current |
| | **MP158** | 3.0 | 20 | 265AC | Non-Isolated | 20 | 500 | 100 | TSOT23-5, SOIC-8 | Offline regulator, up to 70mA output current |
| | **MP171** | 2.0 | 20 | 305AC | Non-Isolated | 20 | 700 | 30 | TSOT23-5, SOIC-8 | Offline regulator, up to 60mA output current |
| N | **MP171A** | 2.0 | 20 | 305AC | Non-Isolated | 20 | 700 | 30 | TSOT23-5, SOIC-8 | Improved EMI performance from the MP171 (up to 60mA output current) |
| N | **MP172A** | 3.0 | 20 | 305AC | Non-Isolated | 16 | 700 | 30 | TSOT23-5, SOIC-8 | Improved EMI performance from the MP172 (up to 120mA output current) |
| N | **MP173A** | 4.0 | 20 | 305AC | Non-Isolated | 14 | 700 | 30 | TSOT23-5, SOIC-8 | Improved EMI performance from the MP173 (up to 280mA output current) |
| N | **MP174A** | 5.0 | 20 | 305AC | Non-Isolated | 13.5 | 700 | 30 | TSOT23-5, SOIC-8 | Improved EMI performance form the MP174 (up to 400mA output current) |
| N | **MP175** | 10 | 30 | 265AC | Non-Isolated | 4.5 | 700 | 30 | SOIC-8, PDIP8-7 | Offline regulator, up to 600mA output current |
| N | **MP163A** | 2.0 | 20 | 265AC | Non-Isolated | 16 | 700 | 30 | SOIC-8-7B, SOIC-16 | Offline regulator with integrated LDO, 210mA current-limited switching regulator |
| N | **MP163B** | 3.0 | 20 | 265AC | Non-Isolated | 14 | 700 | 30 | SOIC-8-7B, SOIC-16 | Offline regulator with integrated LDO, 420mA current-limited switching regulator |
| N | **MP163C** | 4.0 | 20 | 265AC | Non-Isolated | 13.5 | 700 | 30 | SOIC-8-7B, SOIC-16 | Offline regulator with integrated LDO, 660mA current-limited switching regulator |
| N | **MP161A** | 2.0 | 30 | 265AC | Non-Isolated | 17 | 700 | 10 | SOIC-16 | Integrated 240mA current-limited switching regulator, linear regulator, and relay driver |
| N | **MP161B** | 3.0 | 30 | 265AC | Non-Isolated | 14 | 700 | 10 | SOIC-16 | Integrated 420mA current-limited switching regulator, linear regulator, and relay driver |
| P | **MP161C** | 4.0 | 30 | 265AC | Non-Isolated | 13.5 | 700 | 10 | SOIC-16 | Integrated 660mA current-limited switching regulator, linear regulator, and relay driver |

# FLYBACK | AC/DC POWER CONVERSION

## Secondary-Side Regulation

| Part Number | Typ Max Power (W) | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Type | $f_{SW}$ (Max) (kHz) | Control Scheme | Breakdown Voltage (V) | $R_{DS(ON)}$ (Ω) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **HFC0100** | Ext FET | 85AC | 305AC | Controller | - | Quasiresonant | 700 | N/A | SOIC-8 | Quasiresonant |
| **HFC0300** | Ext FET | 85AC | 305AC | Controller | - | Variable Frequency | 700 | N/A | SOIC-7 | Variable off time |
| **HFC0310** | Ext FET | 85AC | 305AC | Controller | 600 | Fixed Frequency | - | N/A | SOIC-8 | Programmable fixed frequency |
| **HFC0500** | Ext FET | 85AC | 305AC | Controller | 65 | Fixed Frequency | 700 | N/A | SOIC8-7A | HV start-up, X capacitor discharge, brown-in/out |
| **HFC0511** | Ext FET | 85AC | 305AC | Controller | 130 | Fixed Frequency | 700 | N/A | SOIC8-7A | 130kHz fixed frequency, ultra-low no-load power consumption |
| P **HFC0650** | Ext FET | 85AC | 305AC | Controller | 1000 | Variable Frequency | 650 | N/A | SOIC8-7A | QRZVS flyback controller for high-efficiency, high-density adapters |
| **HF900** | 10 | 85AC | 440AC | Regulator | 300 | Peak Current | 900 | 13 | PDIP8-7EP, SOIC14-11 | Integrated 900V MOSFET |
| N **HF920** | 10 | 85AC | 440AC | Regulator | 150 | Peak Current | 900 | 15 | SOIC14-11, SOIC8-7A | Integrated 900V MOSFET |
| N **HF920A** | 10 | 85AC | 440AC | Regulator | 150 | Peak Current | 900 | 15 | SOIC14-11, SOIC8-7A | HF920 with AC UV protection |
| S **HF920B** | 10 | 85AC | 440AC | Regulator | 150 | Peak Current | 900 | 15 | SOIC14-11, SOIC8-7A | Improved EMI performance from the HF920 |
| N **HF500-7** | 7 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 12 | SOIC8-7B | Integrated 700V MOSFET |
| N **HF500-15** | 15 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 4.5 | SOIC8-7B | Integrated 700V MOSFET |
| N **HF500-30** | 30 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 1.4 | PDIP8-7B | Integrated 700V MOSFET |
| P **HF500A-30** | 30 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 1.4 | PDIP8-7B | Improved EMI performance from the HF500-30 |
| N **HF500-40** | 40 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 0.9 | PDIP8-7B | Integrated 700V MOSFET |
| P **HF500A-40** | 40 | 85AC | 305AC | Regulator | 65 | Fixed Frequency | 700 | 0.9 | PDIP8-7B | Improved EMI performance from the HF500-40 |

## Primary-Side Regulation

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| N **MP020A-5** | 7 | 85AC | 305AC | Regulator | 75 | Variable Frequency | 700 | 10 | SOIC8-7A | CV/CC control |
| **MP023** | Ext FET | 85AC | 305AC | Controller | 100 | Variable Frequency | 700 | N/A | SOIC8-7A | CV/CC control |
| **MP024-10** | 10 | 85AC | 305AC | Regulator | 100 | Variable Frequency | 700 | 4.5 | SOIC8-7B | CV/CC control |

## All-in-one Flyback with Primary and Secondary Controllers

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| N **MPX2001** | Ext FET | 85AC | 305AC | Controller | 85 | Varible/CCM | 650 | N/A | SOICW-20 | 200V integrated SR controller and capacitive isolation |
| P **MPX2002** | Ext FET | 85AC | 305AC | Controller | 85 | CCM/QR | 650 | N/A | SOICW-16 | 150V integrated SR controller and capacitive isolation |



N - New Product S - Sampling Product P - Preview

## LLC 600V HALF-BRIDGE DRIVERS | AC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Control Scheme | Power (W) | Topology | Capacitive Mode Protection | Adaptive Dead Time Control | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **HR1000A** | 85AC | 305AC | Voltage Mode | External FET | LLC Resonant | - | - | SOIC-16 | Variable frequency, high-power applications |
| **HR1001A** | 85AC | 305AC | Voltage Mode | External FET | LLC Resonant | ✓ | ✓ | SOIC-16 | Two-level OCP via frequency shift and auto-restart, other features same as the HR1001B |
| **HR1001B** | 85AC | 305AC | Voltage Mode | External FET | LLC Resonant | ✓ | ✓ | SOIC-16 | Variable frequency, two-level OCP (1st level auto-restart, 2nd level latch) |
| **HR1001C** | 85AC | 305AC | Voltage Mode | External FET | LLC Resonant | ✓ | ✓ | SOIC-16 | Improved surge performance compared to the HR1001B |
| **HR1001L** | 85AC | 305AC | Voltage Mode | External FET | LLC Resonant | ✓ | ✓ | SOIC-16 | Two-level OCP via frequency shift and latch, other features same as the HR1001B |

## PFC + LLC COMBO CONTROLLERS | AC/DC POWER CONVERSION

| Part Number | LLC Control Scheme | PFC Control Scheme | No-Load Power Consumption (mW) | Programming Ability | Topology | High-Voltage Start-Up | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| N **HR1203** | Voltage Mode | Digital CCM/DCM Multi-mode | <150 | I²C/GUI | PFC + LLC | ✓ | TSSOP-28, SOIC-28 | Digital PFC + analog LLC with graphic user interface, replaces the HR1200 |
| N **HR1204** | Voltage Mode | Digital CCM/DCM Multi-mode | <150 | I²C/GUI | PFC + LLC | - | TSSOP-28, SOIC-28 | Digital PFC + analog LLC with graphic user interface, replaces the HR1201 |
| N **HR1210** | Digital Current Mode | Digital CCM/DCM Multi-mode | <100 | UART/GUI | PFC + LLC | ✓ | TSSOP-20, SOIC-20 | High-performance fully digital PFC + LLC controller |
| S **HR1211** | Digital Current Mode | Digital CCM/DCM Multi-mode | <100 | UART/GUI | PFC + LLC | ✓ | TSSOP-20, SOIC-20 | High-performance fully digital PFC + LLC controller |

## PFCS | AC/DC POWER CONVERSION

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{O\_MAX}$ / $I_{CC\_MAX}$ (mA) | $I_{GATE\_SRC}$ / $I_{GATE\_SINK}$ (mA) | Control Scheme | Topology | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP44010** | 85AC | 305AC | 0.65/2.5 | -350/600 | Boundary Mode | Boost/Buck-Boost | SOIC-8 | Boundary-mode PFC controller, general purpose |
| **MP44011** | 85AC | 305AC | 0.65/2.5 | -350/600 | Boundary Mode | Boost/Buck-Boost | SOIC-8 | Boundary-mode PFC controller with harmonic injection function (reduced capacitor value and inductor size compared to the MP44010) |
| **MP44014** | 85AC | 305AC | 3.2/4.5 | -750/800 | Boundary Mode | Boost/Buck-Boost | SOIC-8 | Boundary-mode PFC controller |
| **MP44014A** | 85AC | 305AC | 3.2/4.5 | -750/800 | Boundary Mode | Boost/Buck-Boost | SOIC-8 | Boundary-mode PFC controller with adjusted open-loop protection |
| N **MP44018A** | 85AC | 305AC | 0.2/1.5 | -600/1000 | CrM/DCM Multi-Mode | Boost | SOIC-8 | CrM/DCM multi-mode boost PFC controller with enhanced light-load efficiency |
| N **MP4078** | 85AC | 305AC | 0.4/5 | 35V/0.27Ω Source-Driven | DCM | Flyback/Buck-Boost/Buck | SOIC-8 | Primary-side control and PFC controller for constant voltage power |

# SYNCHRONOUS RECTIFIERS | AC/DC POWER CONVERSION

## Flyback Topology (Fast Turn-Off, Intelligent)

| Part Number | Type | $V_{DD}$ (Min) (V) | $V_{DD}$ (Max) (V) | $f_{SW}$ (Max) (kHz) | Drain Rating (V) | Regulation Voltage (mV) | Total $R_{DS(ON)}$ (mΩ) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP6902** | Controller | 6 | 27 | 400 | 180 | 70 | Ext FET | SOIC-8 | Light-load management |
| **MP6906** | Controller | 4.2 | 35 | 400 | 180 | 30 | Ext FET | SOIC-8, TSOT23-6 | VCC down to 4.5V, light-load management, turn-off blanking and SYNC feature |
| **MP6907** | Controller | 4.2 | 35 | 400 | 180 | 50 | Ext FET | SOIC-8, TSOT23-6 | VCC down to 4.5V, light-load management, turn-off blanking and SYNC feature, better efficiency than the MP6902 |
| **MP6908** | Controller | 4 | 13 | 400 | 180 | 40 | Ext FET | TSOT23-6 | Fast turn-off intelligent rectifier, slew rate detection, self-biased (no need for auxiliary winding) |
| N **MP6908A** | Controller | 4 | 13 | 600 | 180 | 40 | Ext FET | TSOT23-6 | Very high-frequency, fast turn-off intelligent rectifier, slew rate detection, self-biased (no need for auxiliary winding) |
| N **MP6909** | Controller | 4 | 13 | 400 | 180 | 40 | Ext FET | TSOT23-6 | Fast turn-off intelligent rectifier, slew rate detection |
| **MP6960** | Controller | 8 | 24 | 400 | 180 | 70 | Ext FET | SOIC-8 | Integrated CC/CV controller |
| N **MP6910A** | Ideal diode | 8 | 24 | 250 | 100 | NA | 15 | SOIC-8 | MP6902-based ideal diode |
| N **MP6910B** | Ideal diode | 8 | 24 | 250 | 100 | NA | 13 | SOIC-8 | MP6902-based ideal diode |
| N **MP6919** | Ideal diode | 4 | 13 | 400 | 180 | NA | 15 | SOIC-8 | MP6908-based ideal diode |
| N **MP9989** | Ideal diode | 4 | 13 | 400 | 180 | NA | 10 | SOIC-8, QFN-8 (4x5) | MP6908-based ideal diode |
| P **MP9989A** | Ideal diode | 4 | 13 | 600 | 180 | NA | 15 | SOIC-8, QFN-8 (4x5) | MP6908A-based ideal diode |
| N **MP6953** | Ideal diode | 8 | 24 | 250 | 100 | NA | 17 | SOIC-8 | 12V, 2.5A, new ideal diode |
| N **MP6954** | Ideal diode | 8 | 24 | 250 | 100 | NA | 14 | SOIC-8 | 12V, 3A, new ideal diode |
| N **MP6972** | Ideal diode | 4.5 | 13 | - | 100 | NA | 14 | SOIC-8 | 12V, 2.5A, new ideal diode with slew rate detection |
| N **MP6973** | Ideal diode | 4.5 | 13 | - | 100 | NA | 14 | SOIC-8 | 12V, 3A, new ideal diode with slew rate detection |

## LLC Topology (Fast Turn-Off, Intelligent)

| Part Number | Type | $f_{SW}$ (Max) (kHz) | Drain Rating (V) | Regulation Voltage (mV) | Single/Dual | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP6903** | Controller | 300 | 180 | 70 | Single | SOIC-8E | High-noise immunity, light-load management |
| **MP6922** | Controller | 300 | 180 | 70 | Dual | SOIC-8E, SOIC-14 | $V_{FWD}$ 70mV for LLC |
| **MP6922A** | Controller | 300 | 180 | 30 | Dual | SOIC-8E, SOIC-14 | High-efficiency, $V_{FWD}$ 30mV for LLC, light-load management |
| **MP6922L** | Controller | 300 | 180 | 70 | Dual | SOIC-8 | $V_{FWD}$ 70mV for LLC, shorten LL mode entry $t_{ON}$ threshold, disable light-load entry when no gate pulse compared to the MP6922 |
| **MP6923** | Controller | 300 | 180 | 15 | Dual | SOIC-14 | High-power optimized |
| N **MP6925** | Controller | 500 | 180 | 45 | Dual | SOIC-8 | Enhanced light-load performance, compatible with the MP6924A |
| N **MP6925A** | Controller | 500 | 180 | 45 | Dual | SOIC-8 | Enhanced light-load performance, compatible with the MP6924 |
| N **MP6928A** | Controller | 500 | 200 | 35 | Dual | SOIC-8 | LL mode configuration to avoid ripple in light-load steady state |



N - New Product S - Sampling Product P - Preview

# AC/DC ISOLATED | LED LIGHTING

## Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Power (W) | Topology | Package | Notes |
|---|---|---|---|---|---|---|
| **MP4026** | 85AC | 305AC | External FET | Flyback | SOT23-6 | Primary-side control, active PFC |
| **MP4027** | 85AC | 305AC | External FET | Flyback | SOT23-8 | Primary-side control, PFC, NTC, PWM dimming |
| **MP4031** | 85AC | 305AC | External FET | Flyback | SOIC-8 | TRIAC and analog dimmable, deep dimming, primary-side control, active PFC |
| **MP4033** | 85AC | 305AC | External FET | Flyback | SOIC-8, MSOP-10, SOIC-14 | Enhanced TRIAC-dimmable, primary-side control, active PFC |
| N **MP4057A** | 85AC | 305AC | External FET | Buck-Boost | MSOP-10, SOIC-14 | Single-chip/single-stage solution for smart LED/wireless modules |
| N **MP4059** | 85AC | 305AC | External FET | Buck-Boost | SOIC-8 | 3% analog dimming |
| **MP4060** | 85AC | 305AC | External FET | Buck-Boost | SOIC-8, MSOP-10, SOIC-14 | Improved trailing-edge dimmer performance at high line over the MP4056 |
| S **MP4078** | 85AC | 305AC | External FET | Flyback/Buck-Boost/ Buck | SOIC-8 | Primary-side control and PFC controller for constant voltage power |
| **HR1001A** | 85AC | 305AC | External FET | LLC Resonant | SOIC-16 | Resonant half-bridge, variable frequency, high-power application, auto-restart at over-current for street lighting applications |
| **HR1001B** | 85AC | 305AC | External FET | LLC Resonant | SOIC-16 | Resonant half-bridge, variable frequency, high-power application, two-level OCP |
| **HR1001C** | 85AC | 305AC | External FET | LLC Resonant | SOIC-16 | Enhanced LLC controller with adaptive dead-time control, OCP, auto-restart, latch, enhanced surge |
| **HR1001L** | 85AC | 305AC | External FET | LLC Resonant | SOIC-16 | Enhanced LLC controller with adaptive dead-time control, OCP, latch |
| **MP44010** | 85AC | 305AC | External FET | PFC Boost/Buck-Boost | SOIC-8, DIP-8 | Offline PFC, boundary conduction, ultra-low start-up current (15μA) |
| **MP44011** | 85AC | 305AC | External FET | PFC Boost/Buck-Boost | SOIC-8 | Offline PFC, boundary conduction, harmonic injection function (reduced capacitor value and inductor size from the MP44010) |
| **MP44014** | 85AC | 305AC | External FET | PFC Boost/Buck-Boost | SOIC-8 | Offline PFC, boundary conduction |
| **MP44014A** | 85AC | 305AC | External FET | PFC Boost/Buck-Boost | SOIC-8 | Boundary-mode PFC controller with adjusted open-loop protection |
| S **MP44018A** | 85AC | 305AC | External FET | PFC Boost/Buck-Boost | SOIC-8 | CrM/DCM multi-mode boost PFC controller with enhanced light-load efficiency |

## Regulators

| | | | | | | |
|---|---|---|---|---|---|---|
| **MP4032-1** | 85AC | 132AC | 7 | Flyback | SOIC8-7A | Integrated 500V FET, TRIAC dimmable, deep dimming, primary-side control, active PFC |
| **MP4034** | 85AC | 305AC | 7 | Flyback | SOIC-8, MSOP-10, SOIC-14 | Integrated 700V FET, primary-side control, no dimming or PFC |

# PROTECTION | LED LIGHTING

| Part Number | Control Method | Package | Notes |
|---|---|---|---|
| **MP4690** | Shunt | SOD-123 | Smart bypass for LED Protection, 6V threshold voltage protects 1 LED |

# AC/DC NON-ISOLATED | LED LIGHTING

## Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Power (W) | Configuration | Package | Notes |
|---|---|---|---|---|---|---|
| **MP4001** | 85AC | 305AC | External FET | Low-Side Buck | SOIC-8 | Offline LED controller, integrated high-voltage LDO, analog and PWM dimming |
| **MP4054** | 85AC | 305AC | External FET | Buck-Boost | SOT23-8 | Offline LED controller, active PFC |
| **MP4054A** | 85AC | 305AC | External FET | Buck-Boost | SOT23-8 | Offline LED controller, active PFC, NTC, PWM dimming |
| **MP4056** | 85AC | 305AC | External FET | Buck-Boost | SOIC-8, MSOP-10, SOIC-14 | TRIAC dimmable, offline LED controller, active PFC |

## Regulators

| | | | | | | |
|---|---|---|---|---|---|---|
| **MP4050A** | 85AC | 265AC | 8 | Buck | SOIC-8, SOT23-5 | Integrated 500V FET, offline driver, enhanced thermal, no PFC or dimming |
| **MP4068** | 85AC | 305AC (Recommend Low-Line Only) | 10 | Buck/Buck-Boost | SOIC8-7A, SOIC-8EP | Integrated 500V FET, PFC driver with TRIAC dimming |
| **MP4088** | 85AC (Recommend High-Line Only) | 305AC | 8.5 | Buck/Buck-Boost | SOIC8-7A, SOIC-8EP, TSOT23-5 | Integrated 500V FET, PFC driver with TRIAC dimming |

# DC/DC LIGHTING | LED LIGHTING

## Regulators

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Configuration | $I_{OUT}$ (A) | Max Efficiency (%) | Typ Frequency | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP3412** | 0.8 | 4.4 | Boost | 1.1 | 96 | 1MHz | TSOT23-6 | Synchronous boost, no dimming |
| **MP2480** | 5 | 36 | Buck | 3 | 95 | 2MHz | SOIC-8E | Hysteretic control, PWM dimming |
| **MP2481** | 4.5 | 36 | Buck/Buck-Boost | 1.2 | 95 | 1.4MHz | MSOP-8E | Analog and PWM dimming |
| **MP24892** | 6 | 45 | Low-Side Buck | 1 | 95 | 600kHz | TSOT23-5 | Hysteretic control, analog and PWM dimming, lower cost version of the MP2489 |
| **MP24893** | 6 | 36 | Low-Side Buck | 1 | 95 | 600kHz | QFN-6 (3x3), TSOT23-5 | Hysteretic control, analog and PWM dimming, lower cost version of the MP2489 |
| **MP2483** | 4.5 | 55 | Buck/Buck-Boost | 2.5 | 95 | 1.35MHz | QFN-10 (3x3), SOIC-14 | Analog and PWM dimming, consumer-grade |
| **MP24183** | 4.5 | 55 | Buck/Buck-Boost | 1 | 95 | 1.35MHz | QFN-10 (3x3) | Analog and PWM dimming |
| **MP2488** | 4.5 | 55 | Buck | 2 | 97.5 | 200kHz | QFN-10 (3x3), SOIC-8E | PWM dimming |
| **MP2487** | 4.5 | 55 | Buck | 1 | 97.5 | 200kHz | SOIC-8E | PWM dimming |
| N **MP24833A** | 4.5 | 55 | Buck/Boost/ Buck-Boost | 3 | 90 | 210kHz | SOIC-8E | Analog and PWM dimming |
| **MP24895** | 6 | 36 | Low-Side Buck | 1 | 95 | 600kHz | TSOT23-5, QFN-6 | Hysteretic control, PWM and analog dimming |
| **MP24895A** | 6 | 36 | Low-Side Buck | - | - | - | MSOP-8EP | The MP24895 in an MSOP-8EP package, PWM and analog dimming |
| **MP4688** | 4.5 | 80 | Buck | 1 | 95 | 2MHz | SOIC-8, SOIC-8E | Hysteretic control, PWM dimming |
| **MP4689A** | 4.5 | 100 | Buck | 1 | 95 | 1MHz | SOIC-8EP | Hysteresis current-mode control, dedicated PWM dimming control input |



N - New Product S - Sampling Product

# DC/DC LIGHTING | LED LIGHTING

## Regulators

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Configuration | $I_{OUT}$ (A) | Max Efficiency (%) | Typ Frequency | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| N | **MP2410** | 4.2 | 24 | Buck | 2 | 97 | 1MHz | TSOT23-6, TSOT23-8 | Synchronous buck, analog dimming only |
| N | **MP2410A** | 4.2 | 24 | Buck | 2 | 97 | 1MHz | TSOT23-6, TSOT23-8 | Synchronous buck, analog and PWM dimming |
| N | **MP2410B** | 4.2 | 24 | Buck | 2 | 97 | 1MHz | TSOT23-6, TSOT23-8 | Synchronous buck, analog and PWM dimming, supports battery charger |
| N | **MP2489** | 6 | 60 | Low-Side Buck | 1 | 95 | 600kHz | QFN-6 (3x3), TSOT23-5, SOIC-8E | Hysteretic control |

## Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Power (W) | Configuration | Max Efficiency (%) | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP4012** | 8 | 55 | Ext FET | Buck/Boost/Buck-Boost/SEPIC | - | SOIC-16 | HV9912 pin comp, for backlight (i.e. $V_{OUT}$ > 200V) and lighting (high-output power) |
| **MP24894** | 6 | 60 | Ext FET | Low-Side Buck | 95 | TSOT-6 | Buck controller, hysteresis control |

# PHOTO FLASH | LED LIGHTING

| Part Number | Charge Type | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{SW}$ (Max) (V) | $I_{OUT}$ (Max) (A) | $I_{OUT}$ (Min) (A) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP3331** | WLED | 2.7 | 5.5 | 6 | 2 | - | WLCSP (1.7x1.7) | Single-channel boost driver for smartphone camera flash |
| **MP3361** | Xenon Flash | 2.5 | 6 | 60 | 1.2 | 1.0 (Typ) | MSOP-10 | Highly integrated, IGBT driver |
| **MP3360** | Xenon Flash | 2.5 | 6 | 60 | 1.7 | 0.4 | QFN-10 (2x2) | Programmable peak current, highly integrated, IGBT driver for mobile phones |
| **MP3356** | Xenon Flash | 2.8 | 6 | 50 | 1.7 | 1.5 | QFN-10 (2x2) | Highly integrated, IGBT driver for DSC |
| **MP3351** | Xenon Flash | 3 | 6 | 60 | 2 | 0.3 | QFN-16 (3x3) | Integrated photo flash charger with IGBT driver |
| **MP3352** | Xenon Flash | 3 | 6 | 60 | 2.5 | 0.3 | QFN-16 (3x3) | Integrated photo flash charger with IGBT driver and quench |

## SINGLE-CELL SWITCHING CHARGERS | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (A) | Battery Charge Voltage (V) | OTG Current (Max) (A) | $f_{SW}$ (kHz) | Control Interface | NVDC Power Path | Battery Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP2611** | 3.95 | 6 | 7.5 | 2 | 4.2 | - | 1500 | Standalone | - | Li-Ion, Li-Polymer | QFN-14 (3x4) | Dual inputs, NTC battery temp monitor |
| **MP2615B** | 4.5 | 18 | 23 | 2 | 3.99/ 4.03 | - | 760 | Standalone | - | Li-Ion, Li-Polymer | QFN-16 (3x3) | NTC battery temp monitor |
| N **MP2615C** | 3.95 | 18 | 23 | 2 | 4.1/8.4 | - | 760 | Standalone | - | Li-Ion, Li-Polymer | QFN-16 (3x3) | NTC battery temp monitor, 25mΩ $R_{SNS}$ |
| **MP2625B** | 4 | 10 | 20 | 2 | 4.2 | - | 1600 | Standalone | ✓ | Li-Ion, Li-Polymer | QFN-20 (3x4) | NTC battery temp monitor |
| **MP2626** | 4.2 | 6.5 | 20 | 2 | 4.2/ 4.35 | 1.5 | 1200/ 600 | Standalone | - | Li-Ion, Li-Polymer | QFN-24 (4x4) | NTC battery temp monitor |
| **MP2617A** | 4 | 10 | 20 | 3 | 4.35 | - | 1600 | Standalone | ✓ | Li-Ion, Li-Polymer | QFN-20 (3x4) | NTC battery temp monitor |
| **MP2617B** | 4 | 10 | 20 | 3 | 4.2 | - | 1600 | Standalone | ✓ | Li-Ion, Li-Polymer | QFN-20 (3x4) | NTC battery temp monitor |
| **MP2617H** | 4 | 14 | 20 | 3 | 4.2 | - | 1600 | Standalone | ✓ | Li-Ion, Li-Polymer | QFN-20 (3x4) | NTC battery temp monitor |
| N **MP2695** | 4 | 11 | 16 | 3.6 | 3.6 to 4.45 | - | 720/ 1200 | I²C | - | Li-Ion, Li-Polymer | QFN-21 (3x3) | JEITA battery NTC monitor, OTP programmable charging parameters, battery current monitor |
| **MP2624** | 3.6 | 7 | 20 | 4.5 | 3.48 to 4.425 | 1.3 | 1700 | I²C | ✓ | Li-Ion, Li-Polymer | QFN-22 (3x4) | JEITA battery NTC monitor, BC1.2 detection, shipping mode, OTG OCP hiccup function |
| **MP2624A** | 3.6 | 7 | 20 | 4.5 | 3.48 to 4.425 | 1.3 | 1700 | I²C | ✓ | Li-Ion, Li-Polymer | QFN-22 (3x4) | JEITA battery NTC monitor, BC1.2 detection, shipping mode, OTG OCP latch function |
| N **MP2629** | 3.7 | 5.5 | 22 | 4.5 | 3.4 to 4.67 | 3 | 750/ 1500 | I²C/ Standalone | ✓ | Li-Ion, Li-Polymer | QFN-26 (3.5x3.5) | JEITA battery NTC monitor, OTP programmable charging parameters, ADC |
| N **MP2639B** | 3.6 | 16 | 20 | 5 | 4.35 | 3 | 1300 | Standalone | - | Li-Ion Li-Polymer | QFN-26 (4x4) | JEITA battery NTC monitor, LED fuel gauge, battery current monitor |
| N **MP2723** | 3.7 | 5.5 | 22 | 3 | 3.4 to 4.67 | 1.5 | 1000/ 1350 | I²C/ Standalone | ✓ | Li-Ion, Li-Polymer | QFN-26 (3.5x3.5) | JEITA battery NTC monitor, OTP programmable charging parameters, ADC |
| N **MP2731** | 3.7 | 16 | 22 | 4.5 | 3.4 to 4.67 | 3 | 1000/ 1500 | I²C/ Standalone | ✓ | Li-Ion, Li-Polymer | QFN-26 (3.5x3.5) | JEITA battery NTC monitor, OTP programmable charging parameters, ADC |

## LINEAR CHARGERS | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (mA) | Battery Charge Voltage (V) | Power Path | Control Interface | Battery Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **MPQ5480** | 4 | 6 | 7 | 7.8 to 127 | 4.10 | ✓ | Standalone | Li-Ion, Li-Polymer | WLCSP-16 (1.7x1.7) | Integrated charger with 5V/100mA DC/DC, synchronous regulator |
| **MP2603** | 2.8 | 5.25 | 25 | 50 to 150 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | TSOT23-5 | Charging indication |
| **MP2660** | 4 | 5.85 | 13 | 8 to 500 | 3.6 to 4.5 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | WCSP-9 (1.55x1.55) | Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor |
| **MP2661** | 4 | 5.85 | 13 | 8 to 500 | 3.6 to 4.565 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | WCSP-9 (1.55x1.55) | Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor |



N - New Product S - Sampling Product

## LINEAR CHARGERS | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (mA) | Battery Charge Voltage (V) | Power Path | Control Interface | Battery Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| N **MP2662** | 3.83 | 5.85 | 21 | 8 to 456 | 3.6 to 4.5 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | WCSP-9 (1.75x1.75) | Shipping mode, integrated battery pack protection, 1µA battery leakage current, low $R_{DS(ON)}$, OTP programmable charging parameters, NTC battery temp monitor |
| **MP2663** | 4.35 | 5.5 | 13 | 8 to 500 | 3.6 to 4.5 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | WCSP-9 (1.55x1.55) | Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor |
| **MP2664** | 4 | 5.85 | 13 | 8 to 500 | 3.6 to 4.5 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | QFN-10 (2x2) | Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor |
| **MP2602** | 3.2 | 5.8 | 28 | 85 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | NTC battery temp monitor, adapter present and charging indication, programmable termination current |
| **MP26028** | 3.2 | 6.8 | 20 | 85 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current |
| **MP26029** | 3.9 | 6.25 or 10.6 | 13 | 30 to 1000 | 3.6 to 4.4 | - | Standalone | Li-Ion, Li-Polymer | SOT563, SOIC-8E, QFN-10 (3x3) | NTC battery temp monitor, OTP programmable charging parameters, die temperature regulation, P2P with the MP2602 |
| **MP2604** | 3.2 | 6.7 | 28 | 85 to 1000 | 4.2 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current, NTC battery temp monitor |
| **MP2605** | 2.5 | 6.7 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, NTC battery temp monitor |
| **MP26053** | 2.5 | 6.7 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, NTC battery temp monitor |
| **MP26056** | 2.5 | 6.8 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Dual-mode USB and AC adapter current limits, adapter present and charging indication, programmable termination current |
| **MP26057** | 3.5 | 6.8 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current, NTC battery temp monitor |
| **MP26058** | 2.8 | 6.7 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current, NTC battery temp monitor |
| **MP2606** | 3.2 | 6.8 | 28 | 85 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current |
| **MP26060** | 3.2 | 6.8 | 24 | 85 to 1000 | 4.15 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, programmable termination current |
| **MP2607** | 4.51 | 6.27 | 13 | 300 to 1500 | 4.20 | ✓ | Standalone | Li-Ion, Li-Polymer | QFN-14 (3x4) | Power-path management, dual-mode USB and AC adapter current limits, low $R_{DS(ON)}$, adapter present and charging indication, NTC battery temp monitor |
| **MP2608** | 4.25 | 5.8 | 28 | 100 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Dual inputs, fault and charging indication, programmable termination current |
| **MP26121** | 2.5 | 6.7 | 28 | 200 to 1000 | 4.20 | - | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Adapter present and charging indication, NTC battery temp monitor |
| **MP2631** | 2.5 | 6.7 | 28 | 200 to 1000 | 4.20 | ✓ | Standalone | Li-Ion, Li-Polymer | QFN-10 (3x3) | Integrated 10mA LDO, adapter present and charging indication |
| N **MP2667** | 4 | 5.85 | 13 | 26 to 1049 | 3.6 to 4.545 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | WLCSP-16 (1.7x1.7) | Shipping mode, integrated battery pack protection, OTP programmable charging parameters, NTC battery temp monitor |
| S **MP2665** | 3.83 | 5.85 | 21 | 16 to 896 | 3.6 to 4.545 | ✓ | I²C | Li-Ion, Li-Polymer/ LiFePO4 | QFN-12 (2.5x3.0) | Shipping mode, integrated battery pack protection, 1µA battery leakage current, low $R_{DS(ON)}$, OTP programmable charging parameters, NTC battery temp monitor |

# MULTI-CELL SWITCHING CHARGERS | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (A) | Battery Charge Voltage (V) | $f_{SW}$ (kHz) | Topology | # of Series Cells | Control Interface | Battery Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP2610** | 5 | 24 | 26 | 2 | 4.2/8.4 | 1100 | Non-Sync Buck | 1, 2 | Standalone | Li-Ion, Li-Polymer | QFN-16 (4x4) | NTC battery temp monitor |
| **MP26101** | 5 | 24 | 26 | 2 | 4.1/8.2 | 1100 | Non-Sync Buck | 1, 2 | Standalone | Li-Ion, Li-Polymer | QFN-16 (4x4) | NTC battery temp monitor |
| **MP26123** | 9 | 24 | 26 | 2 | 8.4/12.6 | 600 | Non-Sync Buck | 2, 3 | Standalone | Li-Ion, Li-Polymer | QFN-16 (4x4) | NTC battery temp monitor |
| **MP26124** | 18 | 24 | 28 | 2 | 16.8 | 600 | Non-Sync Buck | 4 | Standalone | Li-Ion, Li-Polymer | QFN-16 (4x4) | NTC battery temp monitor |
| **MP2615** | 3.95 | 18 | 23 | 2 | 4.1/8.4 | 760 | Sync Buck | 1, 2 | Standalone | Li-Ion, Li-Polymer | QFN-16 (3x3) | NTC battery temp monitor |
| **MP2615A** | 3.95 | 18 | 23 | 2 | 4.2/8.7 | 760 | Sync Buck | 1, 2 | Standalone | Li-Ion, Li-Polymer | QFN-16 (3x3) | NTC battery temp monitor |
| N **MP2615C** | 3.95 | 18 | 23 | 2 | 4.1/8.4 | 760 | Sync Buck | 1, 2 | Standalone | Li-Ion, Li-Polymer | QFN-16 (3x3) | NTC battery temp monitor, 25mΩ $R_{SNS}$ |
| **MP2619** | 3.4 | 24 | 26 | 2 | 8.4/12.6 | 600 | Non-Sync Buck | 2, 3 | Standalone | Li-Ion, Li-Polymer | QFN-28 (4x5) | Power-path management, NTC battery temp monitor |
| **MP2623** | 3.5 | 24 | 26 | 2 | 3.6/7.2 | 1100 | Non-Sync Buck | 1, 2 | Standalone | LiFePO4 | QFN-16 (4x4) | NTC battery temp monitor |
| N **MP2672** | 3.65 | 5.75 | 14 | 2 | 8.4 | 600/ 1200 | Sync Boost | 2 | I²C/ Standalone | Li-Ion, Li-Polymer | QFN-18 (2x3) | NVDC power-path management, JEITA battery NTC monitor, OTP programmable charging parameters, integrated cell balancing |
| **MP2639A** | 3.9 | 5.5 | 20 | 2.5 | 8.4 | 1300 | Sync Boost | 2 | Standalone | Li-Ion, Li-Polymer | QFN-26 (4x4) | JEITA battery NTC monitor, LED fuel gauge, battery current monitor, integrated cell balancing, USB OTG |
| N **MP2639C** | 3.9 | 5.5 | 20 | 2.5 | 8.4 | 1300 | Sync Boost | 2 | Standalone | Li-Ion, Li-Polymer | QFN-26 (4x4) | USB OTG, integrated cell-balancing, USB-compatible, JEITA battery NTC monitor, thermal regulation, $V_{IN}$ regulation, LED fuel gauge |
| N **MP2659** | 3.9 | 36 | 40 | 3 | 10.8 to 26.1 | 350/ 680 | Sync Buck | 3, 4, 5, 6 | Standalone | Li-Ion, Li-Polymer/ LiFePO4 | QFN-19 (3x3) | Battery NTC monitor, OTP programmable charging parameters, integrated power FETs |
| N **MP2759** | 3.9 | 36 | 40 | 3 | 3.6 to 26.4 | 1000/ 1350 | Sync Buck | 1, 2, 3, 4, 5, 6 | Standalone | Li-Ion, Li-Polymer/ LiFePO4 | QFN-19 (3x3) | Battery NTC monitor, OTP programmable charging parameters, integrated power FETs |
| N **MP2672A** | 3.65 | 5.75 | 14 | 2 | 8.4 | 1000/ 1500 | Sync Boost | 2 | I²C/ Standalone | Li-Ion, Li-Polymer | QFN-18 (2x3) | NVDC power-path management, JEITA battery NTC monitor, OTP programmable charging parameters, integrated cell balancing |



N - New Product S - Sampling Product

# POWER BANK MANAGEMENT | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (A) | Battery Charge Voltage (V) | OTG Voltage (V) | OTG Current (Max) (A) | $f_{SW}$ (kHz) | Control Interface | Battery Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP2633A** | 4.2 | 6.5 | 20 | 1.5 | 4.2/ 3.6 | 4.2 to 6 | 1.5 | 1200/ 600 | Standalone | Li-Ion, Li-Polymer/ LiFePO4 | QFN-24 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage |
| **MP2635A** | 4.2 | 6.5 | 20 | 2 | 4.2/ 3.6 | 4.2 to 5.6 | 1.5 | 1200/ 600 | Standalone | Li-Ion, Li-Polymer/ LiFePO4 | QFN-24 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage |
| **MP2635B** | 4.2 | 6.5 | 20 | 2 | 4.2/ 4.35 | 4.2 to 5.6 | 1.5 | 1200/ 600 | Standalone | Li-Ion Li-Polym,er | QFN-24 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage |
| **MP2637** | 4.5 | 6.5 | 20 | 2.5 | 4.2/ 4.35 | 4.2 to 6 | 2.4 | 600 | Standalone | Li-Ion, Li-Polymer | QFN-24 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage |
| **MP2637A** | 4.5 | 6.5 | 20 | 2.5 | 4.055/ 4.2 | 4.2 to 6 | 2.4 | 620 | Standalone | Li-Ion Li-Polymer | QFN-24 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage |
| **MP2639A** | 4.05 | 5.75 | 20 | 2.5 | 8.4 | 4.5 to 5.5 | 5 | 1300 | Standalone | Li-Ion Li-Polymer | QFN-26 (4x4) | JEITA battery NTC monitor, LED fuel gauge, battery current monitor, integrated cell balancing, adjustable buck output voltage |
| N **MP2639C** | 3.9 | 5.75 | 20 | 2.5 | 8.4 | 4.5 to 5.5 | 5 | 1300 | Standalone | Li-Ion Li-Polymer | QFN-26 (4x4) | USB OTG, integrated cell balancing, USB-compatible, JEITA battery NTC monitor, thermal regulation, $V_{IN}$ regulation, LED fuel gauge |
| **MP2690** | 3.6 | 5.8 | 14 | 2.5 | 4.2/ 4.35/ 4.45 | 5.1 | 2.1 | 600 | Standalone | Li-Ion Li-Polymer | QFN-26 (4x4) | Power-path management, BC1.2 detection, LED fuel gauge, NTC battery temp monitor, all-in-one autonomous mode |
| **MP2632B** | 3.6 | 5.8 | 20 | 3 | 4.2/ 4.35/ 4.45 | 5.1 | 3 | 600 | Standalone | Li-Ion Li-Polymer | QFN-26 (4x4) | Power-path management, BC1.2 detection, LED fuel gauge, NTC battery temp monitor, all-in-one autonomous mode |
| **MP2636** | 4.5 | 6.5 | 16 | 3 | 4.2/ 4.3/ 4.35 | 4.2 to 6 | 3 | 600 | Standalone | Li-Ion Li-Polymer | QFN-30 (4x4) | Power-path management, NTC battery temp monitor, adjustable boost output voltage, battery current monitor |
| N **MP2696A** | 4 | 11 | 16 | 3.6 | 3.6 to 4.45 | 5.05 to 5.225 | 3.6 | 700/ 1200 | $I^2C$ | Li-Ion Li-Polymer | QFN-21 (3x3) | JEITA battery NTC monitor, power-path management, OTP programmable charging parameters, battery current monitor, programmable boost output voltage |
| **MP2639B** | 4.5 | 16 | 20 | 5 | 4.35 | 5 to 15 | 3 | 1300 | Standalone | Li-Ion Li-Polymer | QFN-26 (4x4) | JEITA battery NTC monitor, LED fuel gauge, battery current monitor, adjustable boost output voltage |
| **MP2659** | 4.2 | 36 | 40 | 3 | 10.8 to 26.4 | 700/ 350 | Sync Buck | 3, 4, 5, 6 | Standalone | Li-Ion Li-Polymer | QFN-19 (3x3) | Battery NTC monitor, OTP programmable charging parameters, integrated power FETs |
| S **MP2696B** | 4 | 11 | 16 | 3.6 | 3.6 to 4.45 | 5.05 to 5.225 | 3.6 | 700/ 1200 | $I^2C$ | Li-Ion Li-Polymer | QFN-21 (3x3) | JEITA battery NTC monitor, power-path management, OTP programmable charging parameters, battery current monitor, programmable boost $V_{OUT}$ |

## CRADLE CHARGERS | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Current (Max) (A) | Charge Status | Charge Type | Battery Charge Voltage (V) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP26075** | 2.5 | 6.1 | 28 | 1 | ✓ | CV/CC Linear | 4.05 to 4.2 | QFN-10 (3x3) | Pre-charge function, thermal foldback, voltage control function for flyback controller |
| **MP26085** | 7 | 20 | 22 | 20 | – | CV/CC Controller | Programmable | SOT23-8 | CC/CV controller with 1.223V voltage reference |
| **MP2681** | 4.9 | 30 | 36 | 4 | ✓ | CV/CC Controller | 4.15 to 20.75 | SOIC-16 | Full protection and indication, one-chip solution for power tool applications |
| **MP2681B** | 4.9 | 30 | 36 | 5 | ✓ | CV/CC Controller | 4.158 to 20.79 | SOIC-16 | Full protection and indication, one-chip solution for power tool applications |

## PROTECTION | BATTERY MANAGEMENT

| Part Number | Operating $V_{IN}$ (Min) (V) | Operating $V_{IN}$ (Max) (V) | Absolute $V_{IN}$ (Max) (V) | Charge Type | Package | Notes |
|---|---|---|---|---|---|---|
| **MP2670** | 3 | 5.55 | 30 | Battery Protection | QFN-10 (3x3) | Li-ion battery charger, protection circuit |
| **MP2671** | 2.7 | 5.65 | 30 | Battery Protection | QFN-12 (3x4) | Li-ion battery charger, protection circuit |



N - New Product S - Sampling Product

# WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

## Inductors & Charge Pumps

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | # of Channels | Current Limit (Typ) (A) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Open LED Protection | Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP1517** | 2.6 | 25 | 25 | 1 | 4 | 0.7 | 1100 | ✓ | Boost | QFN-16 (4x4) | UVLO, external comp |
| **MP1518** | 2.5 | 6 | 25 | 1 | 0.35 | 0.104 | 1300 | - | Boost | QFN-8 (2x2), TSOT23-6 | - |
| **MP1519** | 2.5 | 5.5 | 10 | 4 | - | - | 1300 | - | Charge Pump | QFN-16 (3x3) | Common cathode |
| **MP1528** | 2.7 | 36 | 36 | 1 | 0.95 | 0.4 | Variable | ✓ | Boost | MSOP-8, QFN-6 (3x3), QFN-8 (2x3) | Drives up to 9 series white LED drivers |
| **MP1529** | 2.7 | 5.5 | 25 | 3 | 1.2 | - | 1200 | ✓ | Boost | QFN-16 (4x4) | Integrated flash |
| N **MP23701** | 4.2 | 24 | - | 1 | - | 0.1 | 1500 | ✓ | Buck | UTQFN-8 (1.5x2.5) | 2A, 1.5MHz, synchronous, step-down LED driver |
| **MP24830-C470** | Offline | Offline | External FET | 1 | External FET | 0.2 | 50 to 365 | ✓ | Buck-Boost | SOIC-14, QFN-14 | Power leverage in 2.5 power stages, low BOM cost and high efficiency |
| **MP3021** | 2.7 | 5.5 | 4 | 4 | - | - | 1250 | - | Charge Pump | QFN-16 (3x3) | Single-wire brightness control, common anode |
| **MP3202** | 2.5 | 6 | 25 | 1 | 1.3 | 0.104 | 1300 | ✓ | Boost | QFN-8 (2x2), TSOT23-5 | UVLO, low EMI, thermal shutdown |
| **MP3204** | 2.5 | 6 | 21 | 1 | 0.35 | 0.104 | 1300 | ✓ | Boost | TSOT23-6 | UVLO, low EMI, thermal shutdown |
| **MP3205** | 2.5 | 6 | 21 | 1 | 0.35 | 0.104 | 1300 | - | Boost | TSOT23-5 | MP3204 without OV pin |
| **MP3301** | 2.5 | 6 | 36 | 1 | 1 | - | 1300 | ✓ | Boost | TSOT23-5 | Up to 10 series LED |
| **MP3302** | 2.5 | 6 | 36 | 1 | 1.3 | 0.2 | 1300 | ✓ | Boost | QFN-8 (2x3), TSOT23-5 | UVLO, low EMI, thermal shutdown |
| **MP3304A**<br>**MP3304B**<br>**MP3304C** | 3 | 6 | 36<br>24<br>18 | 1 | 1.33 | 0.2 | 2200 | ✓ | Boost | QFN-8 (2x3) | High efficiency, true PWM dimming |
| **MP3305** | 3 | 6 | 36 | 1 | 1.33 | 0.2 | 2200 | ✓ | Boost | QFN-8 (2x3) | High efficiency, true PWM dimming, adjustable OVP threshold |
| **MP3306** | 3 | 12 | 30 | 1 | 1.8 | 0.2 | 700 | ✓ | Boost | QFN-12 (2x2) | Synchronous boost, integrated disconnect FET |
| **MP3307** | 2.7 | 5.5 | 35 | 1 | 1.6 (Min) | 0.2 | 300 to 2200, Prog | ✓ | Boost | TSOT23-8 | Up to 2.2MHz for automotive infotainment LCD |
| **MP3308** | 3 | 6 | 36 | 1 | 1.3 | 0.2 | 2200 | ✓ | Boost | QFN-14 (3x4) | Supporting CABC dimming |
| **MP3309** | 2.7 | 5.5 | 35 | 1 | 1.5 | 0.2 | 300 to 2200, Prog | ✓ | Boost | QFN-10 (1.4x1.8) | Synchronous boost |
| **MP3309A** | 2.7 | 5.5 | 35 | 1 | 1.5 | 0.2 | 300 to 2200, Prog | ✓ | Boost | QFN-10 (3x3) | Synchronous boost |
| **MP3309C** | 2.7 | 5.5 | 35 | 1 | 1.5 | 0.2 | 300 to 2200, Prog | ✓ | Boost | QFN-10 (1.4x1.8) | Synchronous boost, $I^2C$ interface |
| **MP3309L** | 2.7 | 5.5 | 24 | 1 | 1.6 | 0.2 | 300 to 2200, Prog | ✓ | Boost | QFN-10 (1.4x1.8) | Synchronous boost |
| **MP3310** | 4.5 | 25 | 50 | 1 | 1.3 | 0.5 | 1200, Prog | ✓ | Boost | QFN-10 (3x3) | - |
| **MP3312** | 2.7 | 5.5 | 36 | 2 | 1.8 | 0.24 | 1200 | ✓ | Boost | WLCSP-9 (1.3x1.3) | - |
| **MP3313** | 2.7 | 5.5 | 38 | 3 | 1.5 | - | 250/500/1000 | ✓ | Boost | WLCSP-12 | Linear/exponential dimming, analog dimming, 100mA LED current in flash mode, $I^2C$ |

# WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

## Inductors & Charge Pumps

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | # of Channels | Current Limit (Typ) (A) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Open LED Protection | Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MP3318 | 2.7 | 5.5 | 38 | 3 | 1.5 | - | 250/500/1000 | ✓ | Boost | WLCSP-12 | Linear/exponential dimming, 50mA LED current in flash mode, I²C |
| S MP3326 | 4 | 16 | - | 16 | - | - | - | ✓ | LED Driver with Current Source | QFN4-24 (4x4) | 10 programmable addresses, programmable LED current slew rate, phase shift |
| S MP3362 | 3 | 36 | 36 | 1 | 4 | 0.2 | 200 to 2200 Prog | ✓ | Boost | FCTSOT23-8 | Low $R_{DS(ON)}$, soft start operation |
| S MP3363 | 1.8 | 36 | 36 | 1 | 1 | 0.2 | 200 to 2200 Prog | ✓ | Boost | FCTSOT23-8 | Low $R_{DS(ON)}$, soft start operation |
| MP3366 | 3 | 25 | 50 | 6 | 2.5 | 0.5 | 600 | ✓ | Boost | WLCSP-18 (1.3x2.5) | Smart dimming, tablet PC |
| N MP3367 | 3.5 | 36 | 45 | 6 | 3 | 0.4 | 200 to 2200 | ✓ | Boost/SEPIC | QFN4-24 (4x4), TSSOP-28EP | I²C interface, 15000:1 dimming ratio, prog. LED short threshold, prog. OVP threshold |
| N MP3370 | 3.5 | 36 | 38 | 1 | 3 | - | 350 to 450 | ✓ | Boost | SOIC-8E | LED driver with current source |
| S MP3371 | 3 | 30 | 50 | 8 | 1.8/2.5 | - | 350/500/650/800/950/1200 | ✓ | Boost | QFN4-24 (4x4) | I²C interface, linear smooth dimming, multiple dimming operation mode |
| MP3373 | 9 | 40 | External FET | 8 | External FET | 0.2 | 100 to 1000 | ✓ | Boost | SOIC-28, TSSOP-28 | Phase-shift inductor short protection, cost-effective, replaces the MP3393 in new designs |
| MP3376 | 3 | 30 | 36 | 8 | 2.5 | - | 350 to 2400 | ✓ | Boost | QFN-24 (4x4) | Max 50mA/string, I²C interface |
| MP3376A | 3 | 30 | 37.5 | 8 | 2.5 | - | 350 to 2400 | ✓ | Boost | QFN-24 (4x4) | Max 50mA/string, I²C interface |
| S MP3377 | 3 | 30 | 36 | 8 | 1.8/2.5 | - | 350/500/650/800/950/1200/1800/2400 | ✓ | Boost | CSP-25 (2.6x2.6) | 4 I²C addresses, linear smooth dimming, multiple dimming operation mode |
| MP3378 | 5 | 24 | 55 | 4 | - | - | 300 to 500 | ✓ | Boost | SOIC-28, TSSOP-28EP | Integrated boost controller, DC/DC buck converter |
| MP3384L | 3 | 25 | 50 | 4 | 1.3 | 0.6 | 1250 or 625 | ✓ | Boost | QFN-16 (3x3) | - |
| MP3385 | 4.5 | 33 | External FET | 4 | External FET | 0.6 | 100 to 900 | ✓ | Boost | QFN-20 | I²C digital interface, ABS 80V LED feedback voltage rating, max 300mA/channel |
| MP3387A | 3 | 26 | 50 | 6 | 2.5 | - | 500 to 1250 | ✓ | Boost | TQFN-24 (4x4) | Max 80mA/string, combined analog and PWM dimming |
| MP3387L | 3 | 25 | 50 | 6 | 2.5 | 0.6 | 500 to 1250 | ✓ | Boost | TQFN-24 (4x4) | Smart dimming |
| MP3388S | 4.5 | 25 | 50 | 8 | 2 | 0.6 | 625 or 1250 | ✓ | Boost | QFN-24 (4x4), SOIC-28 | PWM/DC input burst PWM dimming |
| MP3389 | 5 | 28 | External FET | 12 | External FET | 0.6 | 100 to 500 | ✓ | Boost | TSSOP-28EP, SOIC-28 | External MOSFET, PWM or DC input burst, PWM dimming |
| MP3391 | 9 | 35 | External FET | 8 | External FET | 0.45 | 150 to 500 | ✓ | Boost | SOIC-28, TSSOP-28EP | 80mA/channel for 18" to 24" LCD panels/TVs |
| MP3394S | 5 | 28 | 55 | 4 | External FET | 0.3 | 150 to 500 | ✓ | Boost | TSSOP-16EP, SOIC-16 | Replaces the MP3394 |
| MP3398A | 5 | 28 | External FET | 4 | External FET | 0.6 | 100 to 500 | ✓ | Boost | TSSOP-16EP, SOIC-16, SOIC-20 | Inductor short protection, separate ADIM pin |
| MP3398D | 5 | 28 | 55 | 4 | External FET | - | 100 to 500 | ✓ | Boost | SOIC-16, SOIC-20 | Max 350mA/channel, analog and PWM dimming |



N - New Product S - Sampling Product

# WHITE LED DRIVERS | DISPLAY BACKLIGHTING POWER

## Inductors & Charge Pumps

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | # of Channels | Current Limit (Typ) (A) | $V_{FB}$ (V) | $f_{SW}$ (kHz) | Open LED Protection | Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **MP3398L** | 4.5 | 28 | External FET | 4 | External FET | 0.6 | 100 to 500 | ✓ | Boost | SOIC-16 | Lower $V_{IN}$ (min) than the MP3398A |
| **MP3412** | 0.8 | 4.4 | 5 | 1 | 1.1 | 0.2 | 1000 | ✓ | Boost | TSOT23-6 | High efficiency |
| **MP4013B** | 8 | 26 | External FET | 1 | External FET | 0.6 | 100 to 600 | ✓ | Boost | SOIC-16 | More features and better protection, replaces the MP4012 and MP4013 in new designs |
| **MP4601** | 4.5 | 75 | 75 | 1 | 2.5 | 0.2 | 200 to 2000 | ✓ | Buck-Boost | TSSOP-16EP, SOIC-16 | Novel power-leverage technology, regulates LED string up to 350V |
| **MP4653** | Offline | Offline | External FET | 1 | External FET | 0.2 | 20 to 250 | ✓ | LLC | SOIC-20 | LIPS CC/CV mode low BOM cost, high efficiency |
| **MP4655** | Offline | Offline | External FET | 1 | External FET | 0.2 | 40 to 130 | ✓ | LLC | SOIC-28 | Single-stage LED driver and system voltage regulator |
| S **MP4657** | 4 | 16 | 80 | 4 | - | 1.2 | 20 to 350 | ✓ | Pre-Flyback | SOIC-16 | Pure single-stage, flyback LED driver and system voltage controller |
| **MP4700** | Offline | Offline | External FET | 1 | External FET | 0.3 | Up to 160 | Ext Comp | Buck | SOIC-8E | BCM zero-current and valley voltage swtiching >97% efficiency, low BOM, low-power stress |
| **MP9361** | 2.8 | 5 | 5 | 1 | - | - | 1350 | ✓ | Reg Charge Pump | TSOT23-6 | Internal soft start |
| S **MPQ3326** | 4 | 16 | - | 16 | - | - | - | ✓ | LED Driver with Current Source | QFN4-24 (4x4) | 10 programmable addresses, programmable LED current slew rate, phase shift, AEC-Q100 |
| S **MPQ3362** | 3 | 36 | 36 | 1 | 4 | 0.2 | 200 to 2200 Prog | ✓ | Boost | FCTSOT23-8 | 4A current limit, low $R_{DS(ON)}$, soft start operation, AEC-Q100 |
| N **MPQ3367** | 3.5 | 36 | 45 | 6 | 3 | 0.4 | 200 to 2200 | ✓ | Boost/SEPIC | QFN4-24 (4x4), TSSOP-28EP | 150mA/ch, I²C interface, high dimming ratio, prog. LED short threshold, prog. OVP threshold |
| S **MPQ3369** | 3.5 | 36 | 45 | 6 | 3 | 0.4 | 200 to 2200 | ✓ | Boost/SEPIC | QFN4-24 (4x4), TSSOP-28EP | 100mA/ch, I²C interface, high dimming ratio, prog. LED short threshold, prog. OVP threshold |
| **MPQ3386** | 4.5 | 25 | 50 | 6 | 2.5 | 0.6 | 1250 | ✓ | Boost | QFN-24 (4x4) | White LED driver, industrial and AEC-Q100 qualified |
| **MPQ9361** | 2.8 | 5 | 5 | 1 | - | - | 1350 | - | Reg Charge Pump | TSOT23-6 | Internal soft start, industrial grade |

# LED PHOTO FLASH DRIVERS | DISPLAY BACKLIGHTING POWER

## Photo Flash

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (Max) (V) | # of Channels | $I_{OUT}$ (Max) (A) | $f_{SW}$ (kHz) | Type | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP3214** | 2.7 | 5.5 | - | 1 | 0.5 | 1.35 | Charge Pump | QFN-16 (3x3) | Charge pump |
| **MP3331** | 2.7 | 5.5 | - | 1 | 2 | 1/2/3/4 | Boost | WLCSP-9 (1.7x1.7) | 2A boost, I²C, sync rectification output disconnect |
| **MP3332** | 2.7 | 5.5 | 5 | 2 | 3 | 1/2/3/4 | Boost | WLCSP-16 (1.7x1.7) | 3A boost, I²C, sync rectification output disconnect |
| N **MP3336A** | 2.7 | 5.5 | 5.2 | 2 | 4 | 1/2/3/4 | Boost | WLCSP-20 (1.6x2.0) | Flash LED driver with 2A/ch, I²C interface |

# ANALOG INPUT | CLASS-D AUDIO

## Mono

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $P_{OUT}$ (W) | Efficiency (%) | THD+N (%) | PSRR (dB) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP1720** | 2.5 | 5.5 | 2.7 | 90 | 0.11 @ 1W | 60 | QFN-10 (3x3), MSOP-10E | BTL, low EMI, high efficiency, flexible switching frequency setting |
| **MP7731** | 9.5 | 18 | 30 | 90 | 0.10 @ 1W | 60 | TSSOP-20F | Exposed pad |
| **MPQ7731** | 9.5 | 18 | 30 | 90 | 0.10 @ 1W | 60 | TSSOP-20F | Exposed pad, industrial grade |
| **MP7741** | 9.5 | 36 | 10 | 94 | 0.02 @ 1W | 58 | QFN-10 (3x3) | Single-ended, fully integrated audio amplifier |
| **MP7740** | 9.5 | 36 | 15 | 90 | 0.018 @ 1W | 60 | SOIC-8 | Single-ended amplifier |
| **MP7747** | 9.5 | 36 | 20 | 91 | 0.02 @ 1W | 59 | QFN-10 (3x3) | Single-ended, fully integrated audio amplifier |

## Stereo

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MP7722** | 9.5 | 24 | 20 (2x) | 93 | 0.06 @ 1W | 60 | TSSOP-20F | Single-ended audio amplifier, exposed pad |
| **MP7742** | 9.5 | 28 | 15 (2x) | 90 | 0.018 @ 1W | 60 | TSSOP-20F | Single-ended, fully integrated audio amplifier, P2P with the MP7722, exposed pad |
| **MP7745** | 9.5 | 26 | 20 (2x) | 93 | 0.06 @ 1W | 59 | TSSOP-20F | |
| **MP7748S** | 9.5 | 36 | 30 (2x) | 94 | 0.02 @ 1W | 59 | TSSOP-28EP | 2 x 30W SE or 1 x 60W BTL audio amplifier |
| **MP7751** | 5 | 26 | 20 (2x) | 92 | 0.06 @ 1W | 60 | TSSOP-28EP | 5V to 26$V_{DD}$, 2 x 20W BTL audio amplifier |
| **MP7752** | 5 | 18 | 15 (2x) | 90 | 0.06 @ 1W | 60 | TSSOP-28EP | 5V to 18$V_{DD}$, 2 x 15W filterless BTL audio amplifer |
| **MP7770** | 9.5 | 36 | 45 (2x) | 95 | 0.03 @ 1W | 60 | TSSOP-28F | 2 x 45W SE or 1 x 90W BTL audio amplifier, 8.5A peak, exposed pad |



N - New Product S - Sampling Product

# BRUSHED DC SOLENOID DRIVERS | MOTOR DRIVERS

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | # of Half-Bridges | $I_{OUT}$ (Max) (A) | Control Interface | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP6507** | 2.7 | 15 | 4 | 0.7 | PWM | TSSOP-16EP, QFN-16 (3x3), QFN-16 (4x4) | Bipolar stepper |
| **MP6508** | 2.7 | 18 | 4 | 1.2 | PWM | TSSOP-16EP, QFN-16 (4x4) | Bipolar stepper |
| **MP6513** | 2.5 | 21 | 2 | 0.8 | PWM | TSOT23-6 | Half-bridge |
| **MP6513L** | 2.5 | 5.5 | 2 | 0.6 | PWM | TSOT23-6 | Half-bridge |
| **MP6514** | 2.5 | 14 | 2 | 0.6 | PWM | UTQFN-8 (2x2) | Half-bridge, separate HS/LS control |
| **MP6515** | 5.4 | 35 | 2 | 2.8 | PWM | QFN-20 (3x4), TSSOP-16EP | Half-bridge |
| **MP6516** | 5.4 | 35 | 2 | 2.8 | PWM | TSSOP-16EP | Half-bridge, separate HS/LS control |
| **MP6519** | 2.5 | 28 | 2 | 5 | PWM | QFN-19 (3x3) | Half-bridge current regulator |
| N **MP6523** | 7 | 28 | 3 | 0.9 | SPI | QFN-24 (4x4) | Half-bridge, serial input control |
| N **MP6526** | 7 | 28 | 6 | 0.9 | SPI | SOIC-28, QFN-24 (4x4), QFN-24 (5x5) | Half-bridge, serial input control |
| N **MP6550** | 1.8 | 22 | 2 | 2 | PWM | QFN-12 (2x2) | Half-bridge |
| S **MP6610** | 4 | 55 | 1 | 3 | PWM | TSOT23-8, SOIC-8 | Half-bridge power driver, IN/EN control inputs |
| S **MP6610A** | 4 | 55 | 1 | 3 | PWM | TSOT23-8 | Half-bridge power driver, HS/LS control inputs |
| S **MP6619** | 2.5 | 32 | 2 | 5 | PWM | QFN-19 (3x3) | Half-bridge |
| **MP8040** | 7.5 | 24 | 1 | 9 | PWM | SOIC-8EP | Half-bridge driver |
| **MP8042** | 7.5 | 24 | 2 | 5 | PWM | TSSOP-20EF | Full-bridge driver |
| **MP8044** | 7.5 | 22 | 2 | 5 | PWM | TSSOP-20F | Full-bridge driver |
| **MP8046** | 7.5 | 28 | 2 | 5 | PWM | TSSOP-20F | Full-bridge driver |
| **MP8049S** | 5 | 26 | 4 | 5.5 | PWM | QFN-40 (5x5) | Dual full-bridge driver |
| S **MPQ6519** | 2.5 | 32 | 2 | 5 | PWM | QFN-19 (3x3) | Half-bridge current regulator |
| **MPQ6523** | 7 | 28 | 3 | 0.9 | SPI | QFN-24 (4x4) | Half-bridge driver for automotive HVAC |
| N **MPQ6524** | 7 | 28 | 4 | 0.9 | PWM | QFN-24 (4x4) | Half-bridge, serial input control |
| **MPQ6526** | 7 | 28 | 6 | 0.9 | SPI | QFN-24 (4x4), QFN-24 (5x5) | Half-bridge driver for automtive HVAC |
| S **MPQ6527** | 5.5 | 40 | 10 | 0.8 | SPI | TSSOP-28EP | Half-bridge |
| S **MPQ6610** | 4 | 55 | 1 | 3 | PWM | TSOT23-8, SOIC-8 | Half-bridge power driver |
| S **MPQ6626** | 5.5 | 40 | 6 | 0.8 | SPI | TSSOP-28EP | Half-bridge |
| S **MPQ6628** | 5.5 | 40 | 8 | 0.8 | SPI | TSSOP-28EP | Half-bridge |

## BRUSHLESS DC PRE-DRIVERS | MOTOR DRIVERS

| Part Number | Supply Voltage (Min) (V) | Supply Voltage (Max) (V) | $V_{SW}$ (Max) (V) | # of Half-Bridges | $I_{SINK}$ / $I_{SOURCE}$ (A) | Hall Input | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP1921A** | 9 | 18 | 100 | 1 | 2.5/1.5 | - | SOIC-8EP, QFN-8 (3x3), QFN-9 (3x3), QFN-10 (4x4) | Half-bridge gate driver |
| N **MP1921B** | 9 | 18 | 100 | 1 | 2.5/1.5 | - | QFN-10 (3x3) | Half-bridge gate driver |
| S **MP1922** | 4 | 15 | 100 | 1 | 4/3 | - | QFN-22 (4x5) | Half-bridge pre-driver |
| **MP1924A** | 8 | 15 | 100 | 1 | 4.5/3 | - | QFN-10 (4x4), SOIC-8 | Half-bridge gate driver |
| N **MP1925** | 8 | 15 | 100 | 1 | 4.5/3 | - | QFN-8 (4x4) | Half-bridge gate driver |
| **MP6528** | 5 | 60 | - | 2 | 1/0.8 | | QFN-28 (4x4) | Half-bridge pre-driver |
| **MP6530** | 5 | 60 | 60 | 3 | 1/0.8 | - | QFN-28 (4x4), TSSOP-28EP | Three-phase BLDC pre-driver |
| **MP6532** | 5 | 60 | 60 | 3 | 1/0.8 | ✓ | QFN-28 (4x4), TSSOP-28EP | Three-phase BLDC pre-driver, commutation logic |
| **MP6534** | 5 | 55 | 55 | 3 | 1/0.8 | - | QFN-41 (5x5) | Three-phase BLDC pre-driver, commutation logic, buck regulator |
| **MP6535** | 5 | 55 | 55 | 3 | 1/0.8 | ✓ | QFN-40 (5x5) | Three-phase BLDC pre-driver, buck regulator |
| **MP6537** | 8 | 100 | - | 3 | 1/0.8 | - | QFN-28 (4x5) | Three-phase BLDC pre-driver, PWM and enable inputs |
| **MP6538** | 8 | 100 | - | 3 | 1/0.8 | ✓ | QFN-28 (4x5) | Three-phase BLDC pre-driver, Hall commutation logic |
| **MP6539** | 8 | 100 | - | 3 | 1/0.8 | - | QFN-28 (4x5), TSSOP-28EP | Three-phase BLDC pre-driver, HS/LS inputs |
| N **MP6539B** | 8 | 100 | - | 3 | 1/0.8 | - | QFN-28 (4x5), TSSOP-28EP | Three-phase BLDC pre-driver |
| **MP6570** | 3 | 3,6 | 5 | - | - | - | QFN-32 (4x4) | BLDC FOC controller |
| S **MPQ1922** | 4 | 15 | 100 | 1 | 4/3 | - | QFN-22 (4x5) | Half-bridge pre-driver |
| N **MPQ6531** | 5 | 60 | 65 | 3 | 1/0.8 | - | QFN-28 (4x5) | Half-bridge motor driver |
| S **MPQ6533** | 6 | 40 | - | 3 | 1/0.8 | - | QFN-32 (5x5) | Three-channel automotive pre-driver |

## STEPPER | MOTOR DRIVERS

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | Step Mode | Control Interface | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP6500** | 4.5 | 35 | 2.5 | 1, ½, ¼, ⅛ | Indexer | QFN-24 (5x5), TSSOP-28 | Bipolar stepper, micro-stepping, internal current sense |
| **MP6500A** | 4.5 | 35 | 2.5 | 1, ½, ¼, ⅛ | Indexer | TSSOP-28EP | Bipolar stepper, micro-stepping, internal current sense |
| **MP6501A** | 8.5 | 35 | 2.5 | 1, ½, ¼, ⅛ | Indexer | TSSOP28EP | Bipolar stepper, micro-stepping |
| **MP6504** | 8 | 32 | 2 | 1, ½, ¼, ⅛ | Indexer | QFN-28 (4x5) | Bipolar stepper, micro-stepping |
| **MP6507** | 2.7 | 15 | 0.7 | 1, ½ | Parallel | TSSOP-16EP, QFN-16 (3x3), QFN-16 (4x4), TSSOP-16 | Bipolar stepper |
| **MP6508** | 2.7 | 18 | 1.2 | 1, ½ | Parallel | TSSOP-16EP, QFN-16 (4x4) | Bipolar stepper |
| **MP6509** | 2.7 | 18 | 1.2 | 1, ½ | Parallel | TSSOP-20EP | Bipolar stepper, current attenuation |



N - New Product S - Sampling Product

## STEPPER | MOTOR DRIVERS

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $I_{OUT}$ (Max) (A) | Step Mode | Control Interface | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP6518** | 8.5 | 35 | 1.5 | 1, ½, ¼, ⅛ | Indexer | TSSOP-28EP | Bipolar stepper, micro-stepping |
| **MP6600** | 4.5 | 35 | 1.5 | 1, ½, ¼, ⅛ | Indexer | QFN-24 (4x4) | Bipolar stepper, micro-stepping, internal current sense |
| N **MP6601** | 4.5 | 35 | 2.5 | 1, ½, ¼ | Indexer | QFN-24 (5x5), TSSOP-28EP | Stepper motor driver |

## INTEGRATED BLDC | MOTOR DRIVERS

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | # of Half-Bridges | $I_{OUT}$ (Max) (A) | Hall Input | Package | Notes |
|---|---|---|---|---|---|---|---|
| **MP6505** | 4.5 | 16 | 2 | 0.4 | ✓ | QFN-16 (3x3), TSSOP-16EP | Single-phase brushless DC fan driver |
| **MP6510** | 4.5 | 16 | 2 | 1.2 | ✓ | SOIC-8EP, QFN-8 (3x3), QFN-9 (3x3) | Single-phase brushless DC fan driver |
| **MP6517** | 3.3 | 18 | 2 | 1.2 | ✓ | TSOT23-6, TSOT23-6-SL | Programmable single-phase, BLDC fan driver, integrated Hall |
| **MP6517A** | 3.3 | 16 | 2 | 2 | ✓ | TSOT23-6, TSOT23-6-SL | Programmable single-phase, BLDC fan driver, integrated Hall |
| **MP6536** | 5 | 26 | 3 | 5.5 | - | QFN-16 (5x5) | Three-channel half-bridge driver |
| N **MP6540** | 5.5 | 35 | 3 | 3 | - | QFN-26 (5x5) | Three-phase power stage, PWM and enable inputs |
| N **MP6540A** | 5.5 | 35 | 3 | 3 | - | QFN-26 (5x5) | Three-phase power stage, HS/LS inputs |
| S **MP6540H** | 7 | 55 | 3 | 5 | - | QFN-26 (5x5) | Three-phase power stage, PWM/ENBL inputs |
| S **MP6540H-A** | 7 | 55 | 3 | 5 | - | QFN-26 (5x5) | Three-phase power stage, HS/LS inputs |
| S **MP6541** | 4.75 | 45 | 3 | 8 | - | QFN-26 (6x6) | Three-phase power stage, PWM/ENBL inputs |
| S **MP6541A** | 4.75 | 45 | 3 | 8 | - | QFN-26 (6x6) | Three-phase power stage, HS/LS inputs |
| S **MP6542** | 4.5 | 35 | 3 | 11 | - | QFN-26 (6x6) | Three-phase power stage, PWM/ENBL inputs |
| S **MP6542A** | 4.5 | 35 | 3 | 11 | - | QFN-26 (6x6) | Three-phase power stage, HS/LS inputs |
| S **MP6543** | 3 | 12 | 3 | 2 | - | QFN-24 (3x4) | Three-phase power stage |
| S **MP6543H** | 3 | 22 | 3 | 2 | - | QFN-24 (3x4) | Three-phase power stage |
| S **MP6616** | 3.3 | 18 | 2 | 2 | ✓ | QFN-10 (2x3) | Single-phase BLDC driver for closed-loop applications |
| S **MP6630** | 2 | 5.5 | 3 | 0.5 | ✓ | TQFN-8 (2x3) | Three-phase fan driver for notebooks |
| S **MP6650** | 3.3 | 18 | 2 | 2 | ✓ | TSOT23-6-L, TSOT23-6-R, TSOT23-6-SL, TSOT23-6-RSL | Single-phase, BLDC fan driver with integrated Hall |
| S **MP6651** | 3.3 | 18 | 2 | 2 | ✓ | QFN-10 (2x3) | Single-phase BLDC driver for open-loop applications |
| S **MPQ6541** | 4.75 | 45 | 3 | 8 | - | QFN-26 (6x6) | Three-phase power stage, PWM/ENBL inputs |
| S **MPQ6541A** | 4.75 | 45 | 3 | 8 | - | QFN-26 (6x6) | Three-phase power stage, HS/LS inputs |

## MAGALPHA SERIES | POSITION SENSORS

| Part Number | Resolution | Interface | Supply Voltage (V) | Supply Current (mA) | Sensing Range | Bandwidth (Hz) | Latency at Constant Speed (µs) | Temperature Range (°C) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **MA102** | 12-bit | SPI, UVW | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 390 | 8 | -40 to +125 | QFN-16 (3x3) | Motor commutation angle sensor, UVW multi-pole pair emulation |
| **MA302** | 12-bit | SPI, UVW, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 390 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ & UVW incremental outputs |
| **MA310** | 12-bit | SPI, UVW, ABZ | 3 to 3.6 | 12 | 15mT + (No Upper Limit) | 93 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ & UVW incremental outputs |
| N **MA330** | 10-bit to 14-bit | SPI, UVW, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 23 to 6000 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ & UVW incremental outputs |
| **MA702** | 12-bit | SPI, SSI, PWM, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 390 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ incremental & PWM outputs |
| **MA704** | 10-bit | SPI, SSI, PWM, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 3000 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ incremental & PWM outputs |
| **MA710** | 12-bit | SPI, SSI, PWM, ABZ | 3 to 3.6 | 12 | 15mT + (No Upper Limit) | 93 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ incremental & PWM outputs |
| **MA730** | 14-bit | SPI, SSI, PWM, ABZ | 3 to 3.6 | 12 | 40mT + (No Upper Limit) | 23 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ incremental & PWM outputs |
| N **MA732** | 10-bit to 14-bit | SPI, SSI, PWM, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 23 to 6000 | 8 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ incremental & PWM outputs |
| **MA800** | 8-bit | SPI, SSI | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 93 | 2000 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, push-button function |
| **MA820** | 8-bit | SPI, ABZ | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 93 | 2000 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, ABZ output, push-button function |
| **MA850** | 8-bit | SPI, PWM | 3 to 3.6 | 12 | 30mT + (No Upper Limit) | 93 | 2000 | -40 to +125 | QFN-16 (3x3) | Contactless angle sensor, PWM output, push-button function |
| S **MA780** | 10-bit to 12-bit | SPI | 3 to 3.6 | 0.001 to 10 | 30mT + (No Upper Limit) | 5 to 16000 | 4 to 16000 | -40 to +125 | QFN-16 (3x3) | Contactless low-power angle sensor |
| S **MA782** | 10-bit to 12-bit | SPI | 3 to 3.6 | 0.001 to 10 | 30mT + (No Upper Limit) | 5 to 16000 | 4 to 16000 | -40 to +125 | QFN-16 (2x2) | Contactless low-power angle sensor |



## CURRENT SENSORS

| Part Number | Current Range (A) | $V_{CC}$ (V) | Accuracy (from 25°C to 125°C) | Temperature Range (°C) | Bandwidth (kHz) | Isolation Voltage (V) | Primary Conductor Resistance (mΩ) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| S **MCS1800** | ±12.5, ±25 | 3.3 | 3% | -40 to +125 | 100 | 200 | 1.2 | SOIC-8 | Coreless, analog output, immune to external magnetic fields |
| S **MCS1801** | ±12.5, ±25 | 5 | 3% | -40 to +125 | 100 | 200 | 1.2 | SOIC-8 | Coreless, analog output, immune to external magnetic fields |
| S **MCS1802** | ±5, ±10, ±20, ±30, ±40, ±50 | 3.3 | ±2.5% | -40 to +125 | 100 | 2400 | 0.9 | SOIC-8 | Coreless, analog output, immune to external magnetic fields |
| S **MCS1803** | ±5, ±10, ±20, ±30, ±40, ±50 | 5 | ±2.5% | -40 to +125 | 100 | 2400 | 0.9 | SOIC-8 | Coreless, analog output, immune to external magnetic fields |



N - New Product S - Sampling Product

## **ANALOG SWITCHES** | PRECISION ANALOG

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | # of Channels | $t_{ON}$ (ns) | $t_{OFF}$ (ns) | $R_{DS(ON)}$ (Max) (Ω) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP2735** | 1.65 | 5.5 | 2 | 29 | 23 | 0.45 | QFN-10 (1.4x1.8) | Low-voltage, dual SPDT |
| **MP2736** | 1.65 | 5.5 | 2 | 29 | 23 | 0.45 | QFN-10 (1.4x1.8) | Low-voltage, dual SPDT, EN function |

## **OPERATIONAL AMPLIFIERS** | PRECISION ANALOG

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | GBW (kHz) | $I_Q$ (Typ) (μA) | PSRR (dB) | Slew Rate (V/μs) | Offset Voltage (mV) | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP8102** | 1.8 | 5.5 | 200 | 7.5 | 80 | 0.1 | 1 | TSOT23-5 | Ultra-low power, 600kHz |
| **MP8101** | 1.8 | 5.5 | 400 | 11 | 80 | 0.2 | 1 | TSOT23-5 | Ultra-low power, 400kHz |
| **MP8103** | 1.8 | 5.5 | 200 | 14 | 80 | 0.1 | 1 | MSOP-8 | Dual ultra-low power, 600kHz |
| **MP8104** | 1.8 | 5.5 | 400 | 11 | 80 | 0.2 | 1 | TSOT23-5 | Ultra-low power, 400kHz, industry-standard pin out |
| **MP8130** | 2.7 | 36 | 100 | 10 | 80 | 0.1 | 1 | TSOT23-5 | Ultra-low power, 200kHz, high-voltage |
| **MP8110** | 2.5 | 40 | 12 | 0.05 | 0.5 | - | - | SOIC-8, MSOP-8 | High-side current sense |

## **VOLTAGE REFERENCE** | PRECISION ANALOG

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | $V_{OUT}$ (V) | Initial Accuracy (%) | Operating Current (mA) | $Z_{OUT}$ (Ω) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP8201** | 1.2 | 12 | 1.2 to 10 | 0.5 | 60μA to 20mA | 1 | SOT-23 | Precision adjustable, shunt voltage regulator, 1.0V shunt reference |
| **MP8200** | 1 | 12 | 1 | 1 | 100μA to 10mA | 0.5 | SOT-23 | 1.0V precision shunt reference |

# USB/LOAD SWITCHES
## USB/LOAD SWITCHES, USB PORT CONTROLLERS, E-FUSES

### Single-Channel

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Continuous Current (Max) (A) | Short-Circuit Current (Max) (A) | Enable Logic | Fault Flags | Output Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP62055** | 2.7 | 5.5 | 0.5 | 1.1 | Active High | Over-Current, Active High | - | TSOT23-5 | Small package, P2P with the TPS2051B |
| **MP5075L** | 3 | 5.5 | 1 | 7 | Active High | - | ✓ | SOT-563 (1.6x1.6) | OCP, thermal protection, small package |
| **MP62550 MP62551** | 2.5 | 5.5 | 1.5 | 1.7 | Active Low Active High | Over-Current, Active Low | - | TQFN-6 (2x2), TSOT23-6 | Precision-adjustable, current-limited power distribution switch, 88mΩ/100mΩ @ 100mA, 1.5µA max shutdown current |
| **MP5073** | 0.5 | 5.5 | 2 | 2 | Active High | - | ✓ | QFN-12 (2x2) | Programmable current limit, power good, slew rate control |
| **MP5083** | 0.5 | 5.5 | 2 | Prog | Active High | - | ✓ | QFN-12 (2x2) | 5% current monitoring (from 0.6A to full load), power good, slew rate control |
| **MP5075** | 3 | 5.5 | 2.4 | 7 | Active High | - | ✓ | SOT-563 (1.6x1.6) | OCP, thermal protection, small package |
| **MP5077** | 0.5 | 5.5 | 7 | 7 | Active High | - | ✓ | TQFN-12 (2x2) | Programmable current limit, slew rate control, fast-off protection |
| **MP5087** | 0.5 | 5.5 | 7 | 7 | Active High | - | ✓ | TQFN-12 (2x2) | 5% current monitoring (from 1.5A to full load), power good, slew rate control, fast-off protection, UL certified |
| **MP5087A** | 0.5 | 5.5 | 7 | 7 | Active High | - | ✓ | TQFN-12 (2x2) | Programmable current limit, slew rate control, fast-off protection, UL certified |
| **MP5086** | 2.3 | 5.5 | 7 | 7 | Active High Active Low | - | ✓ | TQFN-12 (2x2) | 5% current monitoring (from 1.5 to full load), NTC comparator, open-drain OTP indicator |

### Dual-Channel

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Continuous Current (Max) (A) | Short-Circuit Current (Max) (A) | Enable Logic | Fault Flags | Output Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP5095** | 0.5 | 5.5 | 2.3 (x2) | 5 | Active High | - | ✓ | TSOT23-8 | Dual-channel, low $I_Q$, 30mΩ Low $R_{DS(ON)}$, reverse-block connection |
| **MP5090** | 0.5 | 5.5 | 3/2 | 5 | Active High | - | ✓ | TQFN-8 (1.5x2), CSP (1.05x1.6) | Dual-channel, low $I_Q$, 30mΩ Low $R_{DS(ON)}$, reverse-block connection, small package |
| **MP5092** | 0.5 | 5.5 | 7.5 (x2) | 7 | Active High | - | ✓ | TQFN-18 (2x3) | Dual-channel, programmable current limit, slew rate control, fast-off protection |

### USB Port Controllers

| Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Continuous Current (Max) (A) | Short-Circuit Current (Max) (A) | Enable Logic | Fault Flags | Output Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MP5034** | 3.6 | 14 | | 6 | Active High | - | - | TSOT23-8 | USB charging port controller integrating QC 3.0 protocol |
| **MP5030C** | - | 14 | 3 | 6 | - | - | - | QFN-10 (1.5x2) | USB charging port controller with current limit switch, supports CDP, DCP, and QC 3.0 modes |
| **MP5032** | 3.6 | 14 | 3 | 6 | Active High | - | - | TSOT23-8 | QC 3.0 controller, integrated current-limit switch |
| (N) **MP5030D** | - | 14 | 3 | 6 | Active High | - | - | QFN-10 (1.5x2) | USB charging port controller, load detection, supports CDP and DCP mode |



(N) - New Product (S) - Sampling Product

# E-FUSES (ELECTRONIC FUSES, INTEGRATED HOT-SWAP SWITCHES)
## USB/LOAD SWITCHES, USB PORT CONTROLLERS, E-FUSES

| | Part Number | $V_{IN}$ (Min) (V) | $V_{IN}$ (Max) (V) | Continuous Current (Max) (A) | Short-Circuit Current (Max) (A) | Fault Flags | Output Discharge | Package | Notes |
|---|---|---|---|---|---|---|---|---|---|
| N | **MP5094** | 5/12 | 16/24 | 3/4 | 8 | - | - | TSOT23-8 | Dual-channel, over-voltage clamp, OCP hiccup |
| | **MP5013A** | 3 | 5.5 | 4.2 | Prog | Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown | - | TSOT23-8 | 5V, 36mΩ $R_{DS(ON)}$, programmable current limit, slew rate control, 5A/2.8A trip/hold current |
| | **MP5014A** | 10 | 13.8 | 5 | Prog | Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown | - | TSOT23-8 | 12V, 36mΩ $R_{DS(ON)}$, programmable current limit, over-voltage clamp, slew rate control |
| | **MP5016** | 2.7 | 15 | 5 | 8 | Thermal Fault = Tri-State | ✓ | QFN-10 (1.5x2) | Reverse-current blocking, over-voltage clamp, auto-retry |
| N | **MP5016-L** | 2.7 | 22 | 5 | 8 | - | ✓ | QFN-10 (1.5x2) | Latch-off OCP, over-voltage clamp, reverse blocking |
| | **MP5016H** | 2.7 | 22 | 5 | 8 | Short-Circuit, Over-Current, Under-Voltage, Over-Voltage, Thermal Shutdown | ✓ | QFN-10 (1.5x2) | UL certified, over-voltage clamp, reverse-current blocking, auto-retry |
| | **MP5018** | 4.5 | 5.5 | 5 | Prog | Thermal Fault = Tri-State | - | QFN-12 (2x3) | Reverse-current blocking, 45mΩ $R_{DS(ON)}$, programmable current limit, OTP latch-off |
| | **MP5017** | 3 | 5.5 | 5 | Prog | - | ✓ | QFN-12 (2x3) | Current-limit switch, over-voltage clamp, reverse block, OTP auto-retry |
| N | **MP5036** | 2.9 | 14 | 5 | 8 | - | ✓ | TSOT23-6 | Fixed 15V over-voltage clamp, programmable current limit, fast output OVP response |
| N | **MP5036A** | 2.9 | 5.5 | 5 | 8 | - | ✓ | TSOT23-6 | Fixed 5.75V over-voltage clamp, programmable current limit, fast output OVP response |
| | **MP5021B** | 4.8 | 16 | 10 | 25 | Current Limit, Thermal Shutdown, Damaged MOSFET Detection | ✓ | QFN-22 (3x5) | 16V, 7mΩ $R_{DS(ON)}$, hot-swap protection, current monitoring |
| | **MP5022A** | 8 | 16 | 12 | 36 | Current Limit, Thermal Shutdown, Damaged MOSFET Detection | ✓ | QFN-22 (3x5) | 16V, 3mΩ $R_{DS(ON)}$, hot-swap protection, current monitoring, controlled $R_{ON}$ mode |
| | **MP5022C** | 4.5 | 16 | 15 | 36 | Current Limit, Thermal Shutdown, Damaged MOSFET Detection | - | QFN-22 (3x5) | 16V, 3mΩ $R_{DS(ON)}$, hot-swap protection, current monitoring |
| | **MP5023** | 4 | 16 | 50 | 110 | Current Limit, Thermal Shutdown, Damaged MOSFET Detection | ✓ | QFN-24 (4x5) | 1.1mΩ, hot-swap protection, PMBus interface, current monitoring |
| | **MP5061** | 4.5 | 28 | 15 | 25 | Current Limit, Thermal Shutdown, Under-Voltage, Damaged MOSFET Detection | ✓ | QFN-22 (3x5) | Enable blanking time set and 36V input transient before $V_{OUT}$ start-up, current monitoring |
| N | **MP5921** | 4 | 16 | 50 | 120 | GOK Fault Flag, Current Limit, Thermal Shutdown and Damaged MOSFET Detection | - | QFN-28 (4x5) | 16V,1mΩ $R_{DS(ON)}$, hot-swap Intelli-Phase™ solution, current monitoring, fault reporting output |



# HIGH-VOLTAGE ANALOG SWITCHES | ULTRASOUND MUX

### Serial Shift Register Control

| Part Number | Channels | $V_{SIG}$ (Max) (V) | $R_{SWITCH}$ (Ω) | Output Bleed Resistor | Switch Configuration | Bandwidth (MHz) | Package | Notes |
|---|---|---|---|---|---|---|---|---|
| **MP4816A** | 16 | ±90 | 12.5 | ✓ | SPST | 80 | TQFP-48 (7x7) | 16-bit |
| **MP4816** | 16 | ±90 | 12.5 | - | SPST | 80 | TQFP-48 (7x7) | 16-bit |
| **MP4832A** | 32 | ±90 | 14.0 | ✓ | SPST | 80 | QFN-72 (10x10) | 32-bit with bank switching |
| **MP4833A** | 32 | ±90 | 12.5 | ✓ | SPST | 80 | BGA-80 (7x7) | 32-bit |
| **MP4864A** | 64 | ±90 | 14.0 | ✓ | SPST | 80 | BGA-144 (10x10) | 64-bit |

# SEMI-SHIELDED | INDUCTORS

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-SE2512-R47 | 0.47 | 27 | 4.5 | 6.5 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-R68 | 0.68 | 33 | 3.8 | 4.3 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-1R0 | 1.0 | 45 | 3.35 | 4.2 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-1R5 | 1.5 | 62 | 2.9 | 3.2 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-2R2 | 2.2 | 92 | 2.5 | 2.7 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-3R3 | 3.3 | 158 | 1.8 | 2.4 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-4R7 | 4.7 | 205 | 1.6 | 1.9 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-100 | 10 | 400 | 1.1 | 1.3 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-150 | 15 | 620 | 0.85 | 0.9 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE2512-220 | 22 | 1000 | 0.7 | 0.8 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile, external epoxy resin for better magnetic characteristics |
| N MPL-SE4030-1R0 | 1.0 | 12.5 | 6.3 | 7.5 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-2R2 | 2.2 | 30 | 3.9 | 5.5 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-3R3 | 3.3 | 39.8 | 3.45 | 4.1 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-4R7 | 4.7 | 63 | 2.6 | 3.7 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-6R8 | 6.8 | 83 | 2.4 | 3.3 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-100 | 10 | 97 | 2.2 | 2.4 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-150 | 15 | 185 | 1.6 | 1.95 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE4030-220 | 22 | 219 | 1.5 | 1.65 | 125 | 4030 | 4 | 4 | 3 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-R47 | 0.47 | 7.3 | 8.0 | 16 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-1R0 | 1.0 | 9.4 | 7.6 | 10.5 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-1R5 | 1.5 | 14 | 6.2 | 9.3 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-2R2 | 2.2 | 16 | 5.4 | 7.9 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-3R3 | 3.3 | 22 | 5.2 | 6.4 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-4R7 | 4.7 | 33 | 4.3 | 5 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-6R8 | 6.8 | 45 | 3.5 | 4.6 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-100 | 10 | 56 | 3.2 | 3.6 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-150 | 15 | 83 | 2.5 | 2.9 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE5040-220 | 22 | 124 | 2.1 | 2.4 | 125 | 5040 | 4.9 | 4.9 | 4 | SMD | External epoxy resin for better magnetic characteristics |



N - New Product S - Sampling Product

## SEMI-SHIELDED | INDUCTORS

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-SE6040-1R5 | 1.5 | 11.5 | 6.8 | 8.9 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-2R2 | 2.2 | 14.5 | 6.3 | 7.2 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-3R3 | 3.3 | 19.5 | 5.6 | 5.6 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-4R7 | 4.7 | 23 | 5.2 | 5 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-6R8 | 6.8 | 33 | 4.4 | 4.1 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-8R2 | 8.2 | 39 | 4.0 | 3.6 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-100 | 10 | 41 | 3.8 | 3.4 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-150 | 15 | 70 | 2.8 | 2.7 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |
| N MPL-SE6040-220 | 22 | 97 | 2.35 | 2.25 | 125 | 6040 | 6 | 6 | 4 | SMD | External epoxy resin for better magnetic characteristics |

## MOLDED INDUCTORS | INDUCTORS

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-AT2010-R47 | 0.47 | 27 | 4.4 | 5.7 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2010-R68 | 0.68 | 41 | 3.5 | 4.9 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2010-1R0 | 1 | 50 | 3.2 | 4.2 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2010-1R5 | 1.5 | 97 | 2.4 | 3.2 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2010-2R2 | 2.2 | 137 | 2.2 | 2.7 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2010-4R7 | 4.7 | 215 | 1.5 | 1.9 | 125 | 2010 | 2 | 1.6 | 1 | SMD | Low profile |
| N MPL-AT2512-R33 | 0.33 | 13.5 | 6.4 | 8.5 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2512-R47 | 0.47 | 19 | 5.5 | 6.4 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2512-R68 | 0.68 | 26 | 4.7 | 6 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2512-1R0 | 1.0 | 35 | 4.0 | 5.2 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2512-1R5 | 1.5 | 56 | 3.2 | 4.2 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2514-2R2 | 2.2 | 70 | 2.6 | 3.4 | 125 | 2514 | 2.5 | 2 | 1.4 | SMD | Low profile |
| N MPL-AT2512-3R3 | 3.3 | 121 | 2 | 2.7 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2514-4R7 | 4.7 | 180 | 1.7 | 2.4 | 125 | 2514 | 2.5 | 2 | 1.4 | SMD | Low profile |
| N MPL-AT2512-6R8 | 6.8 | 280 | 1.4 | 2.2 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |
| N MPL-AT2512-100 | 10 | 355 | 1.2 | 1.7 | 125 | 2512 | 2.5 | 2 | 1.2 | SMD | Low profile |

# MOLDED INDUCTORS | INDUCTORS

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-AY3020-R47 | 0.47 | 19.5 | 6.3 | 9 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-R68 | 0.68 | 26 | 5.15 | 8.6 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-R82 | 0.82 | 28 | 4.7 | 8 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-1R0 | 1.0 | 30 | 4.3 | 6.2 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-1R5 | 1.5 | 35 | 3.4 | 5.9 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-2R2 | 2.2 | 64 | 3.0 | 5.3 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-3R3 | 3.3 | 121 | 2.5 | 3.7 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-4R7 | 4.7 | 173 | 2.0 | 3.1 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-5R6 | 5.6 | 209 | 1.8 | 2.8 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-6R8 | 6.8 | 250 | 1.65 | 2.6 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-8R2 | 8.2 | 345 | 1.4 | 1.95 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY3020-100 | 10 | 370 | 1.3 | 1.75 | 125 | 3020 | 3.5 | 3.2 | 1.8 | SMD | - |
| N MPL-AY4020-5R6 | 5.6 | 97 | 2.45 | 2.6 | 155 | 4020 | 4.45 | 4.1 | 1.8 | SMD | High temperature capabilities |
| N MPL-AY4020-6R8 | 6.8 | 129 | 2.2 | 2.4 | 155 | 4020 | 4.45 | 4.1 | 1.8 | SMD | High temperature capabilities |
| N MPL-AY4020-8R2 | 8.2 | 136 | 2.1 | 2.1 | 155 | 4020 | 4.45 | 4.1 | 1.8 | SMD | High temperature capabilities |
| N MPL-AY4020-100 | 10 | 163 | 1.9 | 2 | 155 | 4020 | 4.45 | 4.1 | 1.8 | SMD | High temperature capabilities |
| N MPL-AY1050-R47 | 0.47 | 1.25 | 25 | 41 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-R68 | 0.68 | 1.75 | 23 | 36 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-1R0 | 1.0 | 2.6 | 19 | 33 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-1R5 | 1.5 | 3.4 | 17 | 26.5 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-2R2 | 2.2 | 4.9 | 15 | 19.5 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-3R3 | 3.3 | 8 | 12.5 | 17 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-4R7 | 4.7 | 9.5 | 11.5 | 15 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-5R6 | 5.6 | 13 | 9.8 | 14 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-6R8 | 6.8 | 15 | 9 | 13 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1050-100 | 10 | 19 | 7.8 | 12 | 155 | 1050 | 11 | 10 | 4.8 | SMD | High temperature capabilities |
| N MPL-AY1265-R47 | 0.47 | 0.89 | 33 | 64 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-R56 | 0.56 | 1.1 | 31 | 58 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-R68 | 0.68 | 1.25 | 29 | 51 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-R82 | 0.82 | 1.3 | 27 | 46 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |



N - New Product S - Sampling Product

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-AY1265-1R0 | 1.0 | 1.5 | 25.5 | 43 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-1R2 | 1.2 | 1.8 | 24 | 37 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-1R5 | 1.5 | 2.3 | 22 | 34 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-1R8 | 1.8 | 3.3 | 20 | 29 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-2R2 | 2.2 | 3.7 | 17 | 26.5 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-3R3 | 3.3 | 5.5 | 16 | 25 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-4R7 | 4.7 | 7.0 | 14 | 23 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-5R6 | 5.6 | 8.6 | 13 | 20 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-6R8 | 6.8 | 9.9 | 12 | 19.5 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-8R2 | 8.2 | 12.5 | 11.5 | 18 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-100 | 10 | 13.3 | 10.7 | 16 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-150 | 15 | 21.8 | 8.5 | 12 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AY1265-220 | 22 | 31.4 | 7 | 9 | 155 | 1265 | 13.5 | 12.6 | 6.2 | SMD | High temperature capabilities |
| N MPL-AL4020-R47 | 0.47 | 6.2 | 9.2 | 12.5 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-R68 | 0.68 | 7.5 | 8.7 | 11 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-R82 | 0.82 | 9.0 | 8.4 | 9.5 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-1R0 | 1.0 | 10.1 | 7.9 | 8.6 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-1R2 | 1.2 | 12.2 | 7.4 | 7.5 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-1R5 | 1.5 | 14.5 | 6.4 | 7.1 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-2R2 | 2.2 | 21.5 | 5.5 | 6.2 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-3R3 | 3.3 | 34.5 | 4.4 | 5.2 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL4020-4R7 | 4.7 | 52.2 | 3.65 | 4.2 | 155 | 4020 | 4.1 | 4.1 | 1.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-R47 | 0.47 | 3.78 | 13.6 | 26.5 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-R56 | 0.56 | 3.92 | 13.2 | 22 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-R82 | 0.82 | 5.0 | 12.8 | 18 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-1R0 | 1.0 | 6.5 | 11.2 | 16 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-1R2 | 1.2 | 8.0 | 10.0 | 14 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-1R5 | 1.5 | 9.7 | 9.0 | 12.5 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-1R8 | 1.8 | 10.5 | 8.8 | 12 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-2R2 | 2.2 | 12.3 | 8.2 | 11 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |

# MOLDED INDUCTORS | INDUCTORS

| Part Number | L (µH) | $R_{DC}$ (Typ) (mΩ) | $I_R$ (40K Rise) (A) | $I_{SAT}$ (30% Drop) (A) | Operating Temp (Max) (°C) | Size | A Dimension (L) (mm) | B Dimension (W) (mm) | C Dimension (H) (mm) | Construction | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N MPL-AL5030-3R3 | 3.3 | 21 | 6.0 | 10 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5030-4R7 | 4.7 | 33 | 5.3 | 8 | 155 | 5030 | 5.5 | 5.3 | 2.9 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5050-5R6 | 5.6 | 20 | 6.8 | 8 | 155 | 5050 | 5.5 | 5.3 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5050-6R8 | 6.8 | 25 | 6.1 | 7.6 | 155 | 5050 | 5.5 | 5.3 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5050-8R2 | 8.2 | 28 | 5.8 | 7.2 | 155 | 5050 | 5.5 | 5.3 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL5050-100 | 10 | 37 | 4.8 | 5.5 | 155 | 5050 | 5.5 | 5.3 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-R82 | 0.82 | 3.9 | 16.9 | 24 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-1R0 | 1.0 | 4.3 | 16.2 | 21 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-1R2 | 1.2 | 5.3 | 14.6 | 20 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-1R5 | 1.5 | 6 | 13.3 | 18 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-2R2 | 2.2 | 8.3 | 12.0 | 15 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-3R3 | 3.3 | 11.5 | 10.1 | 12 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-4R7 | 4.7 | 16.5 | 7.5 | 11 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6050-5R6 | 5.6 | 19 | 7 | 10 | 155 | 6050 | 6.6 | 6.4 | 4.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-4R7 | 4.7 | 12 | 10 | 9 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-5R6 | 5.6 | 13 | 9.4 | 8.6 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-6R8 | 6.8 | 16 | 8.5 | 8 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-8R2 | 8.2 | 19 | 8.0 | 7 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-100 | 10 | 24 | 6.9 | 6.6 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |
| N MPL-AL6060-150 | 15 | 35 | 5.8 | 5.5 | 155 | 6060 | 6.6 | 6.4 | 5.8 | SMD | High temperature capabilities, low resistance |



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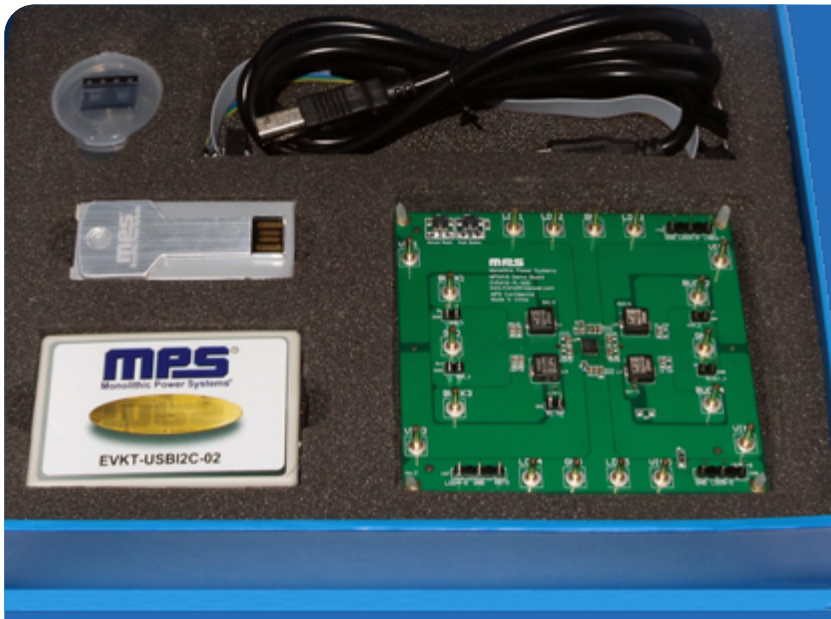


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## PART NUMBERING NOMENCLATURE

EXAMPLE

**MP1234GQV–Z**

① ② ③ ④ ⑤

### ① MP — Prefix

| | |
|---|---|
| MP### | MPQ#### |
| MP#### | HF#### |
| MP##### | NB### |

...see more at **MonolithicPower.com**

### ② 1234 — Part Number

### ③ G — Temperature Grade ($T_A$)

| | | | |
|---|---|---|---|
| **C** | 0°C to +70°C | **G** | -40°C to +125°C |
| **D** | -40°C to +85°C | **H** | -40°C to +125°C |
| **E** | -20°C to +85°C | **K** | -55°C to +125°C |

Temperature Internal to Datasheet; ($T_J$) Standard

### ④ QV — Package (mm) and Features

| | | | | | |
|---|---|---|---|---|---|
| **C** | WLCSP | **QH** | QFN (1.5x2) | **W** | SOIC-WB w/ Exposed Pad |
| **D** | QFN (2x3) | **QJ** | QFN (5x6) | **X** | Sorted Wafer |
| **E** | SC70 | **QK** | QFN (6x6) | **XN** | Unsorted Wafer |
| **F** | TSSOP w/ Exposed Pad | **QM** | QFN (6x7) | **Y** | TO220 |
| **FP** | QFP | **QN** | QFN (7x7) | **ZF** | TO263 |
| **G** | QFN (2x2) | **QP** | QFN (7x8) | **C** | C-Spec |
| **H** | MSOP w/ Exposed Pad | **QQ** | QFN (8x8) | **E** | Enhanced |
| **J** | TSOT23 (0.9 Height) | **QV** | QFN (3x5) | **R** | Reserve Lead Bend or Top Exposed Pad |
| **K** | MSOP | **QW** | QFN (4x6) | **S** | Customer Specific |
| **L** | QFN (3x4) | **QX** | QFN (6x10) | **T** | Thin Package |
| **M** | TSSOP | **QY** | QFN (5x8) | **U** | Ultra-Thin Package |
| **N** | SOIC w/ Exposed Pad | **R** | QFN (4x4) | | |
| **P** | PDIP (300 Mil) | **S** | SOIC | | |
| **Q** | QFN (3x3) | **SD** | SOD123 | | |
| **QD** | QFN (1x1.5) | **T** | SOT23 (1.1 Height) | | |
| **QF** | QFN (1.2x1.6) | **U** | QFN (5x5) | | |
| **QG** | QFN (1.4x1.8) | **V** | QFN (4x5) | | |

...more package and feature details can be found at **MonolithicPower.com**

### ⑤ –Z — Tape & Reel

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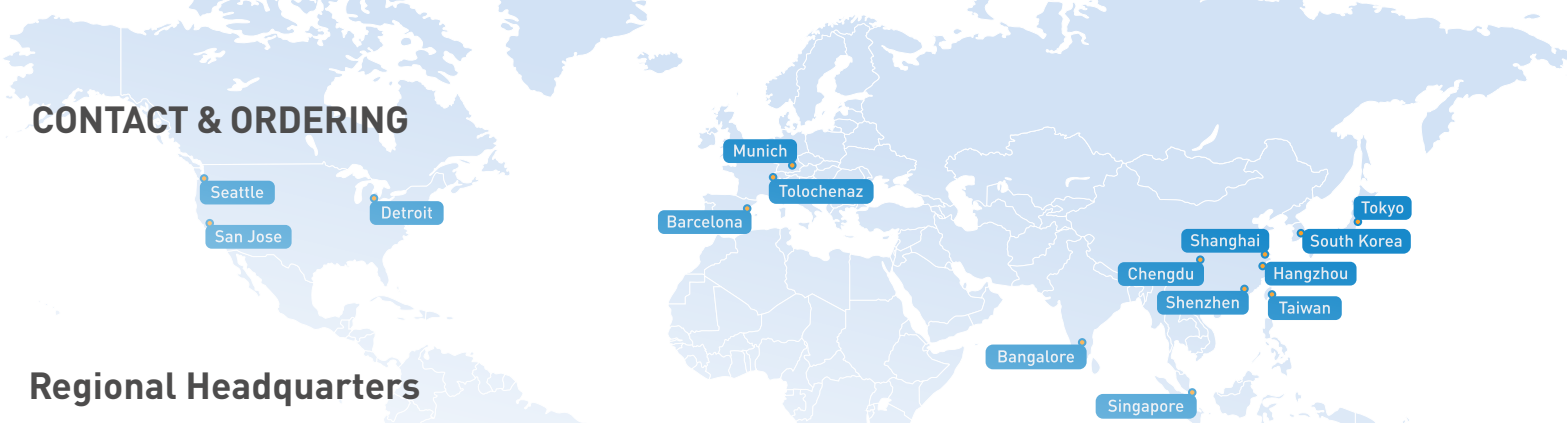


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