

PRODUCT SELECTION GUIDE



About Us

Founded in 2005 and headquartered in Beijing, GigaDevice Semiconductor (Beijing) Inc. was successfully listed on the Shanghai Stock Exchange in August 2016. With more than 800 employees, GigaDevice is a leading fabless semiconductor company dedicated to developing advanced memory technologies, MCU and sensor solutions. It is a global company with branch offices located in Beijing, Shanghai, Shenzhen, Hefei, Xi'an, Chengdu, Suzhou, Taiwan, the United States, South Korea, Japan, the United Kingdom, and Singapore, providing local support at customers' fingertips.

GigaDevice has three major product lines: FLASH memory, 32-bit general-purpose MCU and intelligent Human-Machine Interface (HMI) sensor chips. Having dedicated to high performance, low power products, GigaDevice offers turnkey solutions for market segments ranging from industrial, automotive, computing, consumer, IoT, mobile application to network/telecommunications. GigaDevice is currently ranked as the No. 1 SPI NOR FLASH supplier in China and No. 3 in the worldwide with an annual shipment of over 2 billion units and accumulated shipments over 10 billion since its inception. GigaDevice GD32 MCU is a leader in China's high performance 32-bit general-purpose microcontroller market. With a total of more than 300 million units shipped and over 350 products for selection in 24 family series, GigaDevice can provide solutions for a broad set of applications at the forefront of the market. In addition, GigaDevice also delivers touch controllers and fingerprint sensors to famous mobile makers around the world and it's currently one of the only two optical fingerprint sensor suppliers in China with mass production capability.

Striving to deliver the highest level of quality is at the heart of everything we do at GigaDevice, our management system has achieved ISO 9001:2015 and ISO 14001:2015 certification. GigaDevice is constantly on the lookout for expanding our technology offering to customers. GigaDevice has also formed a strategic alliance with leading foundries, assembly and test plants to streamline supply chain management. For more information, please visit www.gigadevice.com

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GD32 MCU

GD32 Cortex®-M3 MCU Portfolios



GD32 Cortex®-M4 MCU Portfolios



GD32 Cortex®-M3 MCU 200+ Part numbers



GD32 Cortex®-M4 MCU 100+ Part numbers



GD32 Cortex®-M23 MCU 20+ Part numbers



- ☑ GD32E230 & GD32E231 & GD32E232 Arm Cortex®-M23 value line @ 72MHz
- ☑ 16K-64K Flash, 4K-8K SRAM
- ☑ 1.8-3.6V supply; 5V tolerance I/Os
- ☑ -40°C to +85°C industrial level operating temperature
- ☑ Series pin to pin compatible and flexible S/W compatible



GD32VF103 RISC-V MCU 14 Part numbers



- ☑ GD32VF103 RISC-V Bumblebee Core Mainstream Line
- ☑ Max F_{cpu} 108MHz, 16K-128K Flash, 6K-32K SRAM
- ☑ 2.6-3.6V supply; 5V tolerance I/Os; all support USB OTG & CAN 2.0B
- ☑ -40°C to +85°C industrial level operating temperature
- ☑ Series pin to pin compatible and flexible S/W compatible



GD32 Arm® MCU Product Family

| | Performance | Arm® Cortex®-M 32-bit MCUs | | | | |
|---|------------------|---|---|---|--|--|
| | | Cortex®-M23 | Cortex®-M3 | | Cortex®-M4 | |
| GD32 MCU Family | High-Performance | | | | GD32F450 200MHz, 3M Flash, 512K RAM | GD32F407 168MHz, 3M Flash, 192K RAM |
| | | | GD32F205 120MHz, 3M Flash, 256K RAM | GD32F207 120MHz, 3M Flash, 256K RAM | GD32F405 168MHz, 3M Flash, 192K RAM | GD32F403 168MHz, 3M Flash, 128K RAM |
| | Mainstream | | GD32F105 108MHz, 1M Flash, 96K RAM | GD32F107 108MHz, 1M Flash, 96K RAM | GD32F305 120MHz, 1M Flash, 96K RAM | GD32F307 120MHz, 1M Flash, 96K RAM |
| | | | GD32F103 108MHz, 3M Flash, 96K RAM | GD32F101 56MHz, 3M Flash, 80K RAM | GD32F303 120MHz, 3M Flash, 96K RAM | GD32E103 120MHz, 128K Flash, 32K RAM |
| | Entry-Level | GD32E232 72MHz, 64K Flash, 8K RAM | | | | |
| GD32E231 72MHz, 64K Flash, 8K RAM | | GD32F170 48MHz, 64K Flash, 8K RAM | GD32F190 72MHz, 64K Flash, 8K RAM | | | |
| GD32E230 72MHz, 64K Flash, 8K RAM | | GD32F130 48MHz, 64K Flash, 8K RAM | GD32F150 72MHz, 64K Flash, 8K RAM | GD32F330 84MHz, 128K Flash, 16K RAM | GD32F350 108MHz, 128K Flash, 16K RAM | |
| Specific | | | | GD32FFPR 168MHz, 1M Flash, 128K RAM | | |

MCU Package Types

| | | | | | | | | |
|---|---|---|--|---|---|---|---|---|
| LQFP176 (24*24mm) | LQFP144 (20*20mm) | LQFP100 (14*14mm) | LQFP64 (10*10mm) | LQFP48 (7*7mm) | LQFP32 (7*7mm) | | | |
|  |  |  |  |  |  | | | |
| BGA176 (10*10mm) | BGA100 (7*7mm) | QFN36 (6*6mm) | QFN32 (5*5mm) | QFN32 (4*4mm) | QFN28 (4*4mm) | QFN24 (3*3mm) | TSSOP20 (6.5*4.4mm) | LGA20 (3*3mm) |
|  |  |  |  |  |  |  |  |  |

GD32 Development Ecosystem



GD32V series of 32-bit RISC-V MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | EXMC | Analog Interface | | Package | |
|---------------|---------------|-----------------|----------------|----------|----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------|------------------|-----------------------|---------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART+UART | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | SDIO | | Ether-net | 12bit ADC Units (CHs) | | 12bit DAC Units |
| GD32VF103 | GD32VF103T4U6 | 108 | 16K | 6K | up to 26 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32VF103T6U6 | 108 | 32K | 10K | up to 26 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32VF103T8U6 | 108 | 64K | 20K | up to 26 | 4 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32VF103TBU6 | 108 | 128K | 32K | up to 26 | 4 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32VF103C4T6 | 108 | 16K | 6K | up to 37 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | LQFP48 |
| | GD32VF103C6T6 | 108 | 32K | 10K | up to 37 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(10) | 2 | LQFP48 |
| | GD32VF103C8T6 | 108 | 64K | 20K | up to 37 | 4 | 1 | 2 | 1 | 2 | 1 | 3+0 | 2 | 3 | 2 | OTG | 2 | | | | 2(10) | 2 | LQFP48 |
| | GD32VF103CBT6 | 108 | 128K | 32K | up to 37 | 4 | 1 | 2 | 1 | 2 | 1 | 3+0 | 2 | 3 | 2 | OTG | 2 | | | | 2(10) | 2 | LQFP48 |
| | GD32VF103R4T6 | 108 | 16K | 6K | up to 51 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(16) | 2 | LQFP64 |
| | GD32VF103R6T6 | 108 | 32K | 10K | up to 51 | 2 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 | OTG | | | | | 2(16) | 2 | LQFP64 |
| | GD32VF103R8T6 | 108 | 64K | 20K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32VF103RBT6 | 108 | 128K | 32K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32VF103V8T6 | 108 | 64K | 20K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| GD32VF103VBT6 | 108 | 128K | 32K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 | |

GD32E23x series of 32-bit ARM® Cortex®-M23 MCUs Selection Guide

| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | Analog Interface | | Package | | |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|------|------------------|-----------------------|---------|-----------------|---------|
| | | | Flash | SRAM | | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART | I ² C | SPI | USB 2.0 FS | I ² S | Comp | OP-AMP | 12bit ADC Units (CHs) | | 12bit DAC Units | |
| GD32E230 | GD32E230F4P6 | 72 | 16K | 4K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | | 1(9) | | TSSOP20 |
| | GD32E230F6P6 | 72 | 32K | 6K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | | 1(9) | | TSSOP20 |
| | GD32E230F8P6 | 72 | 64K | 8K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | | 1(9) | | TSSOP20 |
| | GD32E230F4V6 | 72 | 16K | 4K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | | 1(9) | | LGA20 |
| | GD32E230F6V6 | 72 | 32K | 6K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | | 1(9) | | LGA20 |
| | GD32E230F8V6 | 72 | 64K | 8K | up to 15 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | | 1(9) | | LGA20 |
| | GD32E230G4U6 | 72 | 16K | 4K | up to 23 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | | 1(10) | | QFN28 |
| | GD32E230G6U6 | 72 | 32K | 6K | up to 23 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | | 1(10) | | QFN28 |
| | GD32E230G8U6 | 72 | 64K | 8K | up to 23 | | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | | 1(10) | | QFN28 |
| | GD32E230K4U6 | 72 | 16K | 4K | up to 27 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | | 1(10) | | QFN32 |
| | GD32E230K6U6 | 72 | 32K | 6K | up to 27 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | | 1(10) | | QFN32 |
| | GD32E230K8U6 | 72 | 64K | 8K | up to 27 | | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | | 1(10) | | QFN32 |
| | GD32E230K4T6 | 72 | 16K | 4K | up to 25 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | | 1(10) | | LQFP32 |

| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | Analog Interface | | Package | | |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|------------------|--------|---------|-----------------------|-----------------|
| | | | Flash | SRAM | | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART | I ² C | SPI | USB 2.0 FS | I ² S | Comp | OP-AMP | | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32E230 | GD32E230K6T6 | 72 | 32K | 6K | up to 25 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | 1(10) | | LQFP32 |
| | GD32E230K8T6 | 72 | 64K | 8K | up to 25 | | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | 1(10) | | LQFP32 |
| | GD32E230C4T6 | 72 | 16K | 4K | up to 39 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | | 1(10) | | LQFP48 |
| | GD32E230C6T6 | 72 | 32K | 6K | up to 39 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | | 1(10) | | LQFP48 |
| | GD32E230C8T6 | 72 | 64K | 8K | up to 39 | | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | | 1(10) | | LQFP48 |
| GD32E231 | GD32E231C4T6 | 72 | 16K | 4K | up to 39 | | 4 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | | 1 | 1 | 2 | 1(10) | | LQFP48 |
| | GD32E231C6T6 | 72 | 32K | 6K | up to 39 | | 4 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | | 1 | 1 | 2 | 1(10) | | LQFP48 |
| | GD32E231C8T6 | 72 | 64K | 8K | up to 39 | | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | 1 | 2 | 1(10) | | LQFP48 |
| GD32E232 | GD32E232E4U7 | 72 | 16K | 4K | up to 23 | 1 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | | 1 | | | 1(13) | 4 | QFN24 |
| | GD32E232E6U7 | 72 | 32K | 6K | up to 23 | 1 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | | 1 | | | 1(13) | 4 | QFN24 |
| | GD32E232E8U7 | 72 | 64K | 8K | up to 23 | 1 | 5 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | | | 1(13) | 4 | QFN24 |
| | GD32E232K4Q7 | 72 | 16K | 4K | up to 28 | 1 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | | 1 | | | 1(16) | 4 | QFN32 |
| | GD32E232K6Q7 | 72 | 32K | 6K | up to 28 | 1 | 4 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | | 1 | | | 1(16) | 4 | QFN32 |
| | GD32E232K8Q7 | 72 | 64K | 8K | up to 28 | 1 | 5 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | | 1 | | | 1(16) | 4 | QFN32 |

GD32E1 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | EXMC | Analog Interface | | Package | | |
|----------|--------------|-----------------|----------------|------|----------|--------------|----------------|----------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Adv TM (16bit) | Bsc TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | | SDIO | Ether-net | | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32E103 | GD32E103T8U6 | 120 | 64K | 20K | up to 26 | 4 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 x FD | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32E103TBU6 | 120 | 128K | 32K | up to 26 | 4 | 1 | 2 | 1 | 2 | 1 | 2+0 | 1 | 1 | 2 x FD | OTG | | | | | 2(10) | 2 | QFN36 |
| | GD32E103C8T6 | 120 | 64K | 20K | up to 37 | 10 | 1 | 2 | 1 | 2 | 1 | 3+0 | 2 | 3 | 2 x FD | OTG | 2 | | | | 2(10) | 2 | LQFP48 |
| | GD32E103CBT6 | 120 | 128K | 32K | up to 37 | 10 | 1 | 2 | 1 | 2 | 1 | 3+0 | 2 | 3 | 2 x FD | OTG | 2 | | | | 2(10) | 2 | LQFP48 |
| | GD32E103R8T6 | 120 | 64K | 20K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 x FD | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32E103RBT6 | 120 | 128K | 32K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 x FD | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32E103V8T6 | 120 | 64K | 20K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 x FD | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32E103VBT6 | 120 | 128K | 32K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 3+2 | 2 | 3 | 2 x FD | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |

GD32F4 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | | | | EXMC/SDRAM | Analog Interface | | Package | |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|----------------|--------------|----------------|-----|-----|--------------|------------------|-----|----------|---------|------------------|------|---------|--------|---------|------------|------------------|-----------------------|---------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Adv TM (16bit) | GPTM (32bit) | Bsc TM (16bit) | WDG | RTC | USART+UART | I ² C | SPI | CAN 2.0B | USB OTG | I ² S | SDIO | LCD-TFT | Camera | ETH MAC | | IPA | 12bit ADC Units (CHs) | | 12bit DAC Units |
| GD32F450 | GD32F450VET6 | 200 | 512K | 256K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 5 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F450VGT6 | 200 | 1024K | 256K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 5 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F450VIT6 | 200 | 2048K | 512K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 5 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F450VKT6 | 200 | 3072K | 256K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 5 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F450ZET6 | 200 | 512K | 256K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F450ZGT6 | 200 | 1024K | 256K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F450ZIT6 | 200 | 2048K | 512K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F450ZKT6 | 200 | 3072K | 256K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F450IGH6 | 200 | 1024K | 256K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | BGA176 |
| | GD32F450IHH6 | 200 | 2048K | 512K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | BGA176 |
| GD32F450IKH6 | 200 | 3072K | 256K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+4 | 3 | 6 | 2 | FS+HS | 2 | 1 | 1 | 1 | 1 | 1 | 1/1 | 3(24) | 2 | BGA176 | |
| GD32F405 | GD32F405RET6 | 168 | 512K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | LQFP64 |
| | GD32F405RGT6 | 168 | 1024K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | LQFP64 |
| | GD32F405RKT6 | 168 | 3072K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | LQFP64 |
| | GD32F405VGT6 | 168 | 1024K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | LQFP100 |
| | GD32F405VKT6 | 168 | 3072K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | LQFP100 |
| | GD32F405VGH6 | 168 | 1024K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | BGA100 |
| | GD32F405VKH6 | 168 | 3072K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(16) | 2 | BGA100 |
| | GD32F405ZGT6 | 168 | 1024K | 192K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(24) | 2 | LQFP144 |
| | GD32F405ZKT6 | 168 | 3072K | 192K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | | | | 3(24) | 2 | LQFP144 |
| GD32F407 | GD32F407RET6 | 168 | 512K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F407RGT6 | 168 | 1024K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F407RKT6 | 168 | 3072K | 192K | up to 51 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F407VET6 | 168 | 512K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F407VGT6 | 168 | 1024K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F407VKT6 | 168 | 3072K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F407VEH6 | 168 | 512K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F407VGH6 | 168 | 1024K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F407VKH6 | 168 | 3072K | 192K | up to 82 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F407ZET6 | 168 | 512K | 192K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F407ZGT6 | 168 | 1024K | 192K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F407ZKT6 | 168 | 3072K | 192K | up to 114 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | LQFP144 |
| | GD32F407IEH6 | 168 | 512K | 192K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | BGA176 |
| | GD32F407IGH6 | 168 | 1024K | 192K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | BGA176 |
| GD32F407IKH6 | 168 | 3072K | 192K | up to 140 | 8 | 2 | 2 | 2 | 2 | 1 | 4+2 | 3 | 3 | 2 | FS+HS | 2 | 1 | | 1 | 1 | | 1/1 | 3(24) | 2 | BGA176 | |

| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | | | | EXMC/SDRAM | Analog Interface | | Package | | |
|----------|--------------|-----------------|----------------|------|-----------|--------------|----------------|--------------|----------------|-----|-----|--------------|------------------|-----|----------|---------|------------------|------|---------|---------|---------|------------|------------------|-----------------------|---------|-----------------|---------|
| | | | Flash | SRAM | | GPTM (16bit) | Adv TM (16bit) | GPTM (32bit) | Bsc TM (16bit) | WDG | RTC | USART +UART | I ² C | SPI | CAN 2.0B | USB OTG | I ² S | SDIO | LCD-TFT | Cam era | ETH MAC | | IPA | 12bit ADC Units (Chs) | | 12bit DAC Units | |
| GD32F403 | GD32F403RCT6 | 168 | 256K | 64K | up to 51 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 0/0 | 3(16) | 2 | LQFP64 |
| | GD32F403RET6 | 168 | 512K | 96K | up to 51 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 0/0 | 3(16) | 2 | LQFP64 |
| | GD32F403RGT6 | 168 | 1024K | 128K | up to 51 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 0/0 | 3(16) | 2 | LQFP64 |
| | GD32F403RIT6 | 168 | 2048K | 128K | up to 51 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 0/0 | 3(16) | 2 | LQFP64 |
| | GD32F403RKT6 | 168 | 3072K | 128K | up to 51 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 0/0 | 3(16) | 2 | LQFP64 |
| | GD32F403VCT6 | 168 | 256K | 64K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F403VET6 | 168 | 512K | 96K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F403VGT6 | 168 | 1024K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F403VIT6 | 168 | 2048K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F403VKT6 | 168 | 3072K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | LQFP100 |
| | GD32F403VCH6 | 168 | 256K | 64K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F403VEH6 | 168 | 512K | 96K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F403VGH6 | 168 | 1024K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F403VIH6 | 168 | 2048K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F403VKH6 | 168 | 3072K | 128K | up to 80 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(16) | 2 | BGA100 |
| | GD32F403ZCT6 | 168 | 256K | 64K | up to 112 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(21) | 2 | LQFP144 |
| | GD32F403ZET6 | 168 | 512K | 96K | up to 112 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(21) | 2 | LQFP144 |
| | GD32F403ZGT6 | 168 | 1024K | 128K | up to 112 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(21) | 2 | LQFP144 |
| | GD32F403ZIT6 | 168 | 2048K | 128K | up to 112 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(21) | 2 | LQFP144 |
| | GD32F403ZKT6 | 168 | 3072K | 128K | up to 112 | 8 | 2 | | 2 | 2 | 1 | 3+2 | 2 | 3 | 2 | OTG | 2 | 1 | | | | | | 1/0 | 3(21) | 2 | LQFP144 |

GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | | EXMC | Analog Interface | | Package | | | | | |
|----------|--------------|-----------------|----------------|------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|-----------|------|-----------------------|-----------------|---------|--|-------|-------|--------|---------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | SDIO | Ether-net | | 12bit ADC Units (Chs) | 12bit DAC Units | | | | | | |
| GD32F303 | GD32F303CCT6 | 120 | 256K | 48K | up to 37 | 4 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 3 | 1 | 1 | 2 | | | | | | | | 3(10) | 2 | LQFP48 | |
| | GD32F303CET6 | 120 | 512K | 64K | up to 37 | 4 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 3 | 1 | 1 | 2 | | | | | | | | | 3(10) | 2 | LQFP48 |
| | GD32F303CGT6 | 120 | 1024K | 96K | up to 37 | 10 | 1 | 2 | 1 | 2 | 1 | 3 | 2 | 3 | 1 | 1 | 2 | | | | | | | | | 3(10) | 2 | LQFP48 |
| | GD32F303RCT6 | 120 | 256K | 48K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP64 |
| | GD32F303RET6 | 120 | 512K | 64K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP64 |
| | GD32F303RGT6 | 120 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP64 |
| | GD32F303RIT6 | 120 | 2048K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP64 |
| | GD32F303RKT6 | 120 | 3072K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP64 |
| | GD32F303VCT6 | 120 | 256K | 48K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP100 |
| | GD32F303VET6 | 120 | 512K | 64K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP100 |
| | GD32F303VGT6 | 120 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP100 |
| | GD32F303VIT6 | 120 | 2048K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP100 |
| | GD32F303VKT6 | 120 | 3072K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(16) | 2 | LQFP100 |
| | GD32F303ZCT6 | 120 | 256K | 48K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(21) | 2 | LQFP144 |
| | GD32F303ZET6 | 120 | 512K | 64K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(21) | 2 | LQFP144 |
| | GD32F303ZGT6 | 120 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(21) | 2 | LQFP144 |
| | GD32F303ZIT6 | 120 | 2048K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(21) | 2 | LQFP144 |
| | GD32F303ZKT6 | 120 | 3072K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | | | | | | 3(21) | 2 | LQFP144 |

GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | EXMC | Analog Interface | | Package | |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------|------------------|-----------------------|---------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART +UART | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | SDIO | | Ether-net | 12bit ADC Units (CHs) | | 12bit DAC Units |
| GD32F305 | GD32F305RBT6 | 120 | 128K | 64K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F305RCT6 | 120 | 256K | 96K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F305RET6 | 120 | 512K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F305RGT6 | 120 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F305VCT6 | 120 | 256K | 96K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F305VET6 | 120 | 512K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F305VGT6 | 120 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F305ZCT6 | 120 | 256K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| | GD32F305ZET6 | 120 | 512K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| GD32F307 | GD32F307ZGT6 | 120 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| | GD32F307RCT6 | 120 | 256K | 96K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP64 |
| | GD32F307RET6 | 120 | 512K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP64 |
| | GD32F307RGT6 | 120 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP64 |
| | GD32F307VCT6 | 120 | 256K | 96K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F307VET6 | 120 | 512K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F307VGT6 | 120 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F307ZCT6 | 120 | 256K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| | GD32F307ZET6 | 120 | 512K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| GD32F307ZGT6 | 120 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 | |

| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | Analog Interface | | Package | | |
|----------|--------------|-----------------|----------------|------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|------------------|-----|------------|------------------|-----|------------------|-----------------------|---------|-----------------|---------|
| | | | Flash | SRAM | | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART | I ² C | SPI | USB 2.0 FS | I ² S | CEC | Comp | 12bit ADC Units (CHs) | | 12bit DAC Units | |
| GD32F330 | GD32F330F4P6 | 84 | 16K | 4K | up to 15 | 1 | 4 | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 1(9) | | TSSOP20 |
| | GD32F330F6P6 | 84 | 32K | 4K | up to 15 | 1 | 4 | 1 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | 1(9) | | TSSOP20 |
| | GD32F330F8P6 | 84 | 64K | 8K | up to 15 | 1 | 4 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(9) | | TSSOP20 |
| | GD32F330G4U6 | 84 | 16K | 4K | up to 23 | 1 | 4 | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 1(10) | | QFN28 |
| | GD32F330G6U6 | 84 | 32K | 4K | up to 23 | 1 | 4 | 1 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | 1(10) | | QFN28 |
| | GD32F330G8U6 | 84 | 64K | 8K | up to 23 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(10) | | QFN28 |
| | GD32F330K4U6 | 84 | 16K | 4K | up to 27 | 1 | 4 | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 1(10) | | QFN32 |
| | GD32F330K6U6 | 84 | 32K | 4K | up to 27 | 1 | 4 | 1 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | 1(10) | | QFN32 |
| | GD32F330K8U6 | 84 | 64K | 8K | up to 27 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(10) | | QFN32 |
| | GD32F330C4T6 | 84 | 16K | 4K | up to 39 | 1 | 4 | 1 | | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 1(10) | | LQFP48 |
| | GD32F330C6T6 | 84 | 32K | 4K | up to 39 | 1 | 4 | 1 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | 1(10) | | LQFP48 |
| | GD32F330C8T6 | 84 | 64K | 8K | up to 39 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(10) | | LQFP48 |
| | GD32F330CBT6 | 84 | 128K | 16K | up to 39 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(10) | | LQFP48 |
| | GD32F330R8T6 | 84 | 64K | 16K | up to 55 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(16) | | LQFP64 |
| | GD32F330RBT6 | 84 | 128K | 16K | up to 55 | 1 | 5 | 1 | | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | 1(16) | | LQFP64 |

GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | Analog Interface | | Package | | | | |
|--------------|--------------|-----------------|----------------|----------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|-----|-----|------------|-----|------------------|-----------------------|---------|-----------------|-------|--------|---------|
| | | | Flash | SRAM | | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART | I²C | SPI | USB 2.0 FS | I²S | CEC | 12bit ADC Units (CHs) | | 12bit DAC Units | | | |
| GD32F130 | GD32F130F4P6 | 48 | 16K | 4K | up to 15 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | | | 1(9) | | TSSOP20 |
| | GD32F130F6P6 | 48 | 32K | 4K | up to 15 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | 1(9) | | TSSOP20 |
| | GD32F130F8P6 | 48 | 64K | 8K | up to 15 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(9) | | TSSOP20 |
| | GD32F130G4U6 | 48 | 16K | 4K | up to 23 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | | | 1(10) | | QFN28 |
| | GD32F130G6U6 | 48 | 32K | 4K | up to 23 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | 1(10) | | QFN28 |
| | GD32F130G8U6 | 48 | 64K | 8K | up to 23 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(10) | | QFN28 |
| | GD32F130K4T6 | 48 | 16K | 4K | up to 27 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | | | 1(10) | | QFN32 |
| | GD32F130K6T6 | 48 | 32K | 4K | up to 27 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | 1(10) | | QFN32 |
| | GD32F130K8T6 | 48 | 64K | 8K | up to 27 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(10) | | QFN32 |
| | GD32F130K4U6 | 48 | 16K | 4K | up to 27 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | | | 1(10) | | QFN32 |
| | GD32F130K6U6 | 48 | 32K | 4K | up to 27 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | 1(10) | | QFN32 |
| | GD32F130K8U6 | 48 | 64K | 8K | up to 27 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(10) | | QFN32 |
| | GD32F130C4T6 | 48 | 16K | 4K | up to 39 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | | | | | | | 1(10) | | LQFP48 |
| | GD32F130C6T6 | 48 | 32K | 4K | up to 39 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | 1(10) | | LQFP48 |
| GD32F130C8T6 | 48 | 64K | 8K | up to 39 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(10) | | LQFP48 | |
| GD32F130R8T6 | 48 | 64K | 8K | up to 55 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 2 | 2 | | | | | | | 1(16) | | LQFP64 | |
| GD32F150 | GD32F150G4U6 | 72 | 16K | 4K | up to 24 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN28 |
| | GD32F150G6U6 | 72 | 32K | 6K | up to 24 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN28 |
| | GD32F150G8U6 | 72 | 64K | 8K | up to 24 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN28 |
| | GD32F150K4U6 | 72 | 16K | 4K | up to 27 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN32 |
| | GD32F150K6U6 | 72 | 32K | 6K | up to 27 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN32 |
| | GD32F150K8U6 | 72 | 64K | 8K | up to 27 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | QFN32 |
| | GD32F150C4T6 | 72 | 16K | 4K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | LQFP48 |
| | GD32F150C6T6 | 72 | 32K | 6K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | LQFP48 |
| | GD32F150C8T6 | 72 | 64K | 8K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1(10) | 1 | LQFP48 |
| | GD32F150R4T6 | 72 | 16K | 4K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(16) | 1 | LQFP64 |
| | GD32F150R6T6 | 72 | 32K | 6K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1(16) | 1 | LQFP64 |
| | GD32F150R8T6 | 72 | 64K | 8K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1(16) | 1 | LQFP64 |

| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | | Analog Interface | | Package | | | | | |
|--------------|--------------|-----------------|----------------|----------|----------|--------------|--------------|---------------------|------------------|-----------------|-----|--------------|-------|-----|-----|----------|------|-----|------------------|------|---------|-----------------------|-----------------|-------|--------|--------|
| | | | Flash | SRAM | | GPTM (32bit) | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART | I²C | SPI | CAN 2.0B | I²S | LCD | OP-amp | Comp | | 12bit ADC Units (CHs) | 12bit DAC Units | | | |
| GD32F170 | GD32F170T4U6 | 48 | 16K | 4K | up to 28 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | 2 | | | | | | | | 1(10) | | QFN36 |
| | GD32F170T6U6 | 48 | 32K | 4K | up to 28 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 2 | | | | | | | | | 1(10) | | QFN36 |
| | GD32F170T8U6 | 48 | 64K | 8K | up to 28 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 3 | 3 | 2 | | | | | | | | 1(10) | | QFN36 |
| | GD32F170C4T6 | 48 | 16K | 4K | up to 39 | 1 | 4 | 1 | | 1 | 2 | 1 | 1 | 1 | 1 | 2 | | | | | | | | 1(10) | | LQFP48 |
| | GD32F170C6T6 | 48 | 32K | 4K | up to 39 | 1 | 4 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 2 | | | | | | | | 1(10) | | LQFP48 |
| | GD32F170C8T6 | 48 | 64K | 8K | up to 39 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 3 | 3 | 2 | | | | | | | | 1(10) | | LQFP48 |
| | GD32F170R8T6 | 48 | 64K | 8K | up to 55 | 1 | 5 | 1 | | 1 | 2 | 1 | 2 | 3 | 3 | 2 | | | | | | | | 1(16) | | LQFP64 |
| | GD32F190T4U6 | 72 | 16K | 4K | up to 28 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | | 2 | 2 | | | | 1(10) | 2 | QFN36 |
| GD32F190T6U6 | 72 | 32K | 6K | up to 28 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | | 2 | 2 | | | | 1(10) | 2 | QFN36 | |
| GD32F190T8U6 | 72 | 64K | 8K | up to 28 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 2 | 2 | | 2 | 2 | | | | 1(10) | 2 | QFN36 | |
| GD32F190C4T6 | 72 | 16K | 4K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 4x18 | 2 | 2 | | | | 1(10) | 2 | LQFP48 | |
| GD32F190C6T6 | 72 | 32K | 6K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 4x18 | 2 | 2 | | | | 1(10) | 2 | LQFP48 | |
| GD32F190C8T6 | 72 | 64K | 8K | up to 39 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 2 | 2 | 4x18 | 2 | 2 | | | | 1(10) | 2 | LQFP48 | |
| GD32F190R4T6 | 72 | 16K | 4K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 8x32 | 3 | 2 | | | | 1(16) | 2 | LQFP64 | |
| GD32F190R6T6 | 72 | 32K | 6K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 8x32 | 3 | 2 | | | | 1(16) | 2 | LQFP64 | |
| GD32F190R8T6 | 72 | 64K | 8K | up to 55 | 1 | 5 | 1 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 2 | 2 | 8x32 | 3 | 2 | | | | 1(16) | 2 | LQFP64 | |

GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | EXMC | Analog Interface | | Package | | |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART (UART) | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | | SDIO | Ether-net | | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32F103 | GD32F103T4U6 | 108 | 16K | 6K | up to 26 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | QFN36 |
| | GD32F103T6U6 | 108 | 32K | 10K | up to 26 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | QFN36 |
| | GD32F103T8U6 | 108 | 64K | 20K | up to 26 | 3 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | QFN36 |
| | GD32F103TBU6 | 108 | 128K | 20K | up to 26 | 3 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | QFN36 |
| | GD32F103C4T6 | 108 | 16K | 6K | up to 37 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | LQFP48 |
| | GD32F103C6T6 | 108 | 32K | 10K | up to 37 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(10) | | LQFP48 |
| | GD32F103C8T6 | 108 | 64K | 20K | up to 37 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | | 2(10) | | LQFP48 |
| | GD32F103CBT6 | 108 | 128K | 20K | up to 37 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | | 2(10) | | LQFP48 |
| | GD32F103R4T6 | 108 | 16K | 6K | up to 51 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(16) | | LQFP64 |
| | GD32F103R6T6 | 108 | 32K | 10K | up to 51 | 2 | 1 | | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | | | | | 2(16) | | LQFP64 |
| | GD32F103R8T6 | 108 | 64K | 20K | up to 51 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | | 2(16) | | LQFP64 |
| | GD32F103RBT6 | 108 | 128K | 20K | up to 51 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | | 2(16) | | LQFP64 |
| | GD32F103RCT6 | 108 | 256K | 48K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RDT6 | 108 | 384K | 64K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RET6 | 108 | 512K | 64K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RFT6 | 108 | 768K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RGT6 | 108 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RIT6 | 108 | 2048K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103RKT6 | 108 | 3072K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | | 3(16) | 2 | LQFP64 |
| | GD32F103V8T6 | 108 | 64K | 20K | up to 80 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | • | 2(16) | | LQFP100 |
| | GD32F103VBT6 | 108 | 128K | 20K | up to 80 | 3 | 1 | | 1 | 2 | 1 | 3 | 2 | 2 | 1 | 1 | | | | • | 2(16) | | LQFP100 |
| | GD32F103VCT6 | 108 | 256K | 48K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VDT6 | 108 | 384K | 64K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VET6 | 108 | 512K | 64K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VFT6 | 108 | 768K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VGT6 | 108 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VIT6 | 108 | 2048K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103VKT6 | 108 | 3072K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(16) | 2 | LQFP100 |
| | GD32F103ZCT6 | 108 | 256K | 48K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 |
| | GD32F103ZDT6 | 108 | 384K | 64K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 |
| | GD32F103ZET6 | 108 | 512K | 64K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 |
| | GD32F103ZFT6 | 108 | 768K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 |
| GD32F103ZGT6 | 108 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 | |
| GD32F103ZIT6 | 108 | 2048K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 | |
| GD32F103ZKT6 | 108 | 3072K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 1 | 2 | 1 | | • | 3(21) | 2 | LQFP144 | |

GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | EXMC | Analog Interface | | Package | | |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART (UART) | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | | SDIO | Ether-net | | 12bit ADC Units (CHs) | 12bit DAC Units |
| GD32F105 | GD32F105R8T6 | 108 | 64K | 64K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RBT6 | 108 | 128K | 64K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RCT6 | 108 | 256K | 96K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RDT6 | 108 | 384K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RET6 | 108 | 512K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RFT6 | 108 | 768K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105RGT6 | 108 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | | 2(16) | 2 | LQFP64 |
| | GD32F105V8T6 | 108 | 64K | 64K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VBT6 | 108 | 128K | 64K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VCT6 | 108 | 256K | 96K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VDT6 | 108 | 384K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VET6 | 108 | 512K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VFT6 | 108 | 768K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105VGT6 | 108 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP100 |
| | GD32F105ZCT6 | 108 | 256K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| | GD32F105ZDT6 | 108 | 384K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| | GD32F105ZET6 | 108 | 512K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 |
| GD32F105ZFT6 | 108 | 768K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 | |
| GD32F105ZGT6 | 108 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | | • | 2(16) | 2 | LQFP144 | |
| GD32F107 | GD32F107RBT6 | 108 | 128K | 96K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 1 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107RCT6 | 108 | 256K | 96K | up to 51 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 1 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107RDT6 | 108 | 384K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107RET6 | 108 | 512K | 96K | up to 51 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107RFT6 | 108 | 768K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107RGT6 | 108 | 1024K | 96K | up to 51 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | | 2(16) | 2 | LQFP64 |
| | GD32F107VBT6 | 108 | 128K | 96K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 1 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107VCT6 | 108 | 256K | 96K | up to 80 | 4 | 1 | 2 | 1 | 2 | 1 | 5 | 1 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107VDT6 | 108 | 384K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107VET6 | 108 | 512K | 96K | up to 80 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107VFT6 | 108 | 768K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107VGT6 | 108 | 1024K | 96K | up to 80 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP100 |
| | GD32F107ZCT6 | 108 | 256K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP144 |
| | GD32F107ZDT6 | 108 | 384K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP144 |
| | GD32F107ZET6 | 108 | 512K | 96K | up to 112 | 4 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP144 |
| | GD32F107ZFT6 | 108 | 768K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP144 |
| | GD32F107ZGT6 | 108 | 1024K | 96K | up to 112 | 10 | 2 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 2 | OTG | 2 | | • | • | 2(16) | 2 | LQFP144 |

GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide



| Series | Part No. | Max Speed (MHz) | Memory (Bytes) | | I/O | Timer | | | | | | Connectivity | | | | | | EXMC | Analog Interface | | Package | | | | | | | | | | | |
|--------------|--------------|-----------------|----------------|-----------|-----------|--------------|---------------------|------------------|-----------------|-----|-----|--------------|------------------|-----|----------|------------|------------------|------|------------------|-----------|---------|-----------------------|-----------------|--|--|--|--|-------|-------|-------|---------|---------|
| | | | Flash | SRAM | | GPTM (16bit) | Advanced TM (16bit) | Basic TM (16bit) | SysTick (24bit) | WDG | RTC | USART (UART) | I ² C | SPI | CAN 2.0B | USB 2.0 FS | I ² S | | SDIO | Ether-net | | 12bit ADC Units (CHs) | 12bit DAC Units | | | | | | | | | |
| GD32F101 | GD32F101T4U6 | 56 | 16K | 4K | up to 26 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | 1(10) | | QFN36 | | |
| | GD32F101T6U6 | 56 | 32K | 6K | up to 26 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(10) | | QFN36 | |
| | GD32F101T8U6 | 56 | 64K | 10K | up to 26 | 3 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(10) | | QFN36 | |
| | GD32F101TBU6 | 56 | 128K | 16K | up to 26 | 3 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(10) | | QFN36 | |
| | GD32F101C4T6 | 56 | 16K | 4K | up to 37 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(10) | | LQFP48 | |
| | GD32F101C6T6 | 56 | 32K | 6K | up to 37 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(10) | | LQFP48 | |
| | GD32F101C8T6 | 56 | 64K | 10K | up to 37 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | 1(10) | | LQFP48 | |
| | GD32F101CBT6 | 56 | 128K | 16K | up to 37 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | 1(10) | | LQFP48 | |
| | GD32F101R4T6 | 56 | 16K | 4K | up to 51 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(16) | | LQFP64 | |
| | GD32F101R6T6 | 56 | 32K | 6K | up to 51 | 2 | | | 1 | 2 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | 1(16) | | LQFP64 | |
| | GD32F101R8T6 | 56 | 64K | 10K | up to 51 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | 1(16) | | LQFP64 | |
| | GD32F101RBT6 | 56 | 128K | 16K | up to 51 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | 1(16) | | LQFP64 | |
| | GD32F101RCT6 | 56 | 256K | 32K | up to 51 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 1(16) | 2 | LQFP64 | |
| | GD32F101RDT6 | 56 | 384K | 48K | up to 51 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 1(16) | 2 | LQFP64 | |
| | GD32F101RET6 | 56 | 512K | 48K | up to 51 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 1(16) | 2 | LQFP64 | |
| | GD32F101RFT6 | 56 | 768K | 80K | up to 51 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 2(16) | 2 | LQFP64 | |
| | GD32F101RGT6 | 56 | 1024K | 80K | up to 51 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 2(16) | 2 | LQFP64 | |
| | GD32F101RIT6 | 56 | 2048K | 80K | up to 51 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 2(16) | 2 | LQFP64 | |
| | GD32F101RKT6 | 56 | 3072K | 80K | up to 51 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | 2(16) | 2 | LQFP64 | |
| | GD32F101V8T6 | 56 | 64K | 10K | up to 80 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | • | 1(16) | | LQFP100 |
| | GD32F101VBT6 | 56 | 128K | 16K | up to 80 | 3 | | | 1 | 2 | 1 | 3 | 2 | 2 | | | | | | | | | | | | | | | • | 1(16) | | LQFP100 |
| | GD32F101VCT6 | 56 | 256K | 32K | up to 80 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP100 |
| | GD32F101VDT6 | 56 | 384K | 48K | up to 80 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP100 |
| | GD32F101VET6 | 56 | 512K | 48K | up to 80 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP100 |
| | GD32F101VFT6 | 56 | 768K | 80K | up to 80 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP100 |
| | GD32F101VGT6 | 56 | 1024K | 80K | up to 80 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP100 |
| | GD32F101VIT6 | 56 | 2048K | 80K | up to 80 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP100 |
| | GD32F101VKT6 | 56 | 3072K | 80K | up to 80 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP100 |
| | GD32F101ZCT6 | 56 | 256K | 32K | up to 112 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP144 |
| | GD32F101ZDT6 | 56 | 384K | 48K | up to 112 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP144 |
| | GD32F101ZET6 | 56 | 512K | 48K | up to 112 | 4 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 1(16) | 2 | LQFP144 |
| | GD32F101ZFT6 | 56 | 768K | 80K | up to 112 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP144 |
| GD32F101ZGT6 | 56 | 1024K | 80K | up to 112 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP144 | |
| GD32F101ZIT6 | 56 | 2048K | 80K | up to 112 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP144 | |
| GD32F101ZKT6 | 56 | 3072K | 80K | up to 112 | 10 | | 2 | 1 | 2 | 1 | 5 | 2 | 3 | | | | | | | | | | | | | | | • | 2(16) | 2 | LQFP144 | |

SPI NOR Flash

GD SPI NOR Flash Features



- ◆ **Single Power Supply Voltage**
- Voltage range: 2.7V~3.6V
- ◆ **High Speed Clock Frequency**
- Maximum 166MHz for fast read with 30pF load*
- Dual I/O Data transfer up to 332Mbits/s
- Quad I/O Data transfer up to 664Mbits/s
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**
- Sector Size: 4K Bytes
- Block Size: 32/64K Bytes

- ◆ **Single Power Supply Voltage**
- Voltage range: 2.3V~3.6V
- ◆ **High Speed Clock Frequency**
- Maximum 104MHz for fast read with 30pF load*
- Dual I/O Data transfer up to 208Mbits/s
- Quad I/O Data transfer up to 416Mbits/s
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**
- Sector Size: 4K Bytes
- Block Size: 32/64K Bytes

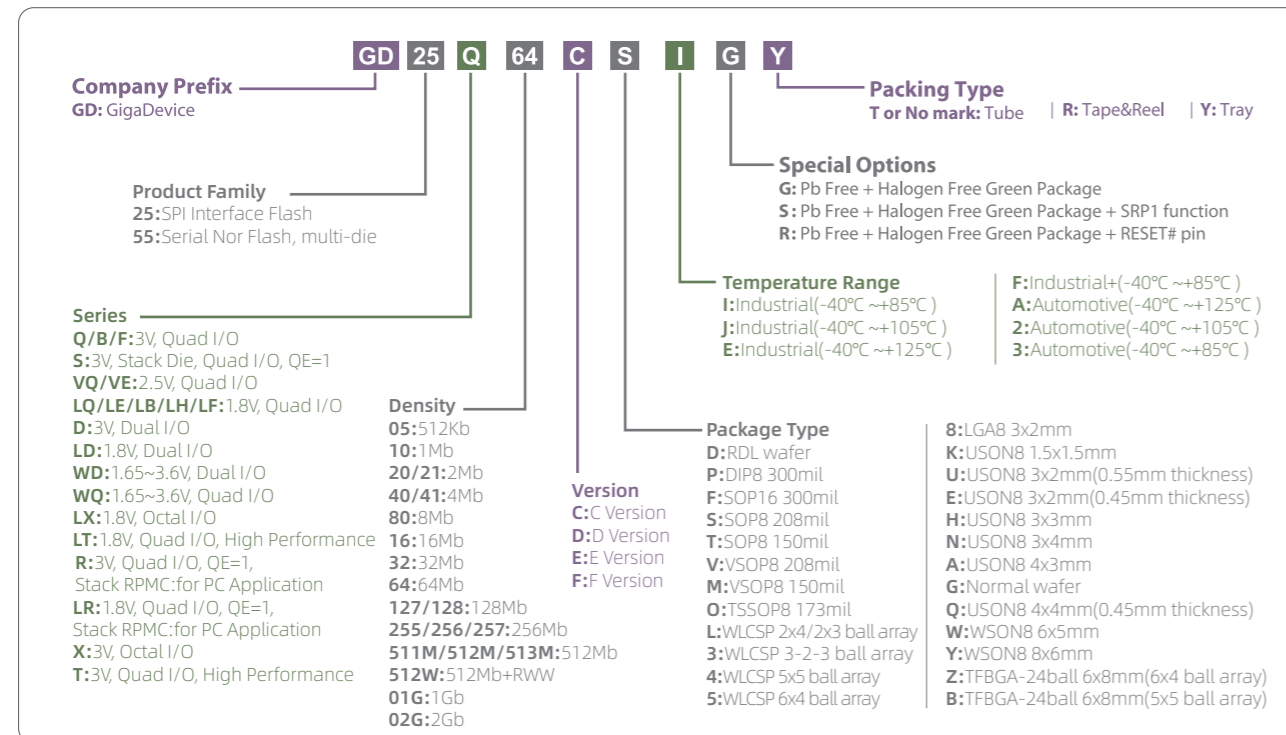
- ◆ **Single Power Supply Voltage**
- Voltage range: 1.65V~2.0V
- ◆ **High Speed Clock Frequency**
- Maximum 166MHz for fast read with 30pF load*
- Dual I/O Data transfer up to 332Mbits/s
- Quad I/O Data transfer up to 664Mbits/s
- QPI Data transfer up to 664Mbits/s
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**
- Sector Size: 4K Bytes
- Block Size: 32/64K Bytes

- ◆ **Single Power Supply Voltage**
- Voltage range: 1.65V~3.6V
- ◆ **High Speed Clock Frequency**
- Maximum 104MHz for fast read with 30pF load*
- Dual I/O Data transfer up to 208Mbits/s
- Quad I/O Data transfer up to 416Mbits/s
- Continuous Read With 8/16/32/64-Byte Wrap
- ◆ **Flexible Memory Architecture**
- Sector Size: 4K Bytes
- Block Size: 32/64K Bytes

* This feature is available on most of devices. Please refer to page 16-19.



GD SPI NOR Flash Part Number Definition



GD SPI NOR Flash Feature List

| Flash Type | 3.0V | | | | | | 2.5V | | 1.8V | | | | | | | | 1.65V-3.6V | | | | |
|---|------------|--------|-------------------|-------------------|-------------------|--------|--------|---------|---------|---------|---------|-------------------|---------|-------------------|-------------------|-------------------|-------------------|---------|---------|---------|---|
| | GD25 F | GD25 X | GD25 Q | GD25 B | GD25 R | GD25 S | GD25 D | GD25 VQ | GD25 VE | GD25 LX | GD25 LT | GD25 LR | GD25 LF | GD25 LQ | GD25 LB | GD25 LH | GD25 LE | GD25 LD | GD25 WQ | GD25 WD | |
| Part No. | xxE xxF | xxE | xxC xxD xxE | xxC xxD xxE | xxC xxD xxE | xxD | xxD | xxC | xxC | xxE | xxE | xxC xxD xxE | xxE | xxC xxD xxE | xxC xxD xxE | xxC xxD xxE | xxC xxD xxE | xxC | xxE | xxC | |
| Single I/O (1-1-1) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Dual Output (1-1-2) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Dual I/O (1-2-2) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Quad Output (1-1-4) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Quad I/O (1-4-4) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Octal Output (1-1-8) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Octal I/O (1-8-8) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| QPI (4-4-4) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| OPI (8-8-8) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| HOLD# Pin | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| H/W Reset (RESET# Pin) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| S/W Reset | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| H/W Write Protection (WP# Pin) | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| S/W Write Protection | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Enhanced Block Protection | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Volatile & Non-volatile Status Register Bit | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| Output Driver Strength | * | . | * | * | * | * | . | * | * | . | . | * | . | . | . | . | . | . | . | . | . |
| Security Registers with OTP Locks | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SFDP Register | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| DTR | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

* This feature is supported by part of family

| Part No. | Density | Voltage | Organization | I/O Bus | Frequency (MHz) | Packages |
|------------|---------|------------|-------------------|----------------------|-----------------------------------|--|
| GD25LE16E | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) 66MHz(DTR) | SOP8 208mil USON8 3x2mm (0.45mm) WLCSP (3-2-3 ball array) |
| GD25LQ16E | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm WLCSP (3-2-3 ball array) |
| GD25LH16E | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm |
| GD25LB16E | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm WSON8 6x5mm |
| GD25LB16C | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm |
| GD25LE16C | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LH16C | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm |
| GD25LQ16C | 16Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) LGA8 3x2mm WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LF80E | 8Mb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual / Quad | 166MHz(x1, x2, x4) 104MHz(DTR) | SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm |
| GD25LE80E | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) 66MHz(DTR) | SOP8 208mil USON8 3x2mm (0.45mm) WLCSP (4-4 or 3-3 ball array) |
| GD25LQ80E | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) |
| GD25LH80E | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil USON8 3x2mm (0.45mm) |
| GD25LD80C | 8Mb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25LE80C | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LH80C | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LQ80C | 8Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm WLCSP (4-4 or 3-3 ball array) |
| GD25LQ40E | 4Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 3x4mm |
| GD25LD40C | 4Mb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LE40C | 4Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LH40C | 4Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LQ40C | 4Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LQ20E | 2Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 133MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 3x4mm |
| GD25LD20C | 2Mb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LE20C | 2Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LH20C | 2Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LQ20C | 2Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LD10C | 1Mb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25LE10C | 1Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LH10C | 1Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LQ10C | 1Mb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LD05C | 512Kb | 1.65V-2.0V | 4KB / 32KB / 64KB | Single / Dual Output | 50MHz(x1) 40MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25LE05C | 512Kb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LH05C | 512Kb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil USON8 3x2mm (0.45mm) USON8 3x2mm (0.55mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25LQ05C | 512Kb | 1.65V-2.1V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil USON8 3x2mm (0.45mm) USON8 3x3mm USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm |
| GD25WQ256E | 256Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP16 300mil WSON8 6x5mm WSON8 8x6mm TFBGA24 8x6mm (5x5 ball array) |
| GD25WQ128E | 128Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 208mil SOP16 300mil USON8 4x4mm (0.45mm) WSON8 6x5mm WSON8 8x6mm TFBGA24 8x6mm (5x5 ball array) |
| GD25WQ64E | 64Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 208mil USON8 3x4mm USON8 4x4mm (0.45mm) WSON8 6x5mm TFBGA24 8x6mm (5x5 ball array) WLCSP (3-2-3 ball array) |
| GD25WQ32E | 32Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) USON8 3x4mm |
| GD25WQ16E | 16Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) |
| GD25WQ80E | 8Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual / Quad | 104MHz(x1, x2, x4) | SOP8 150mil SOP8 208mil USON8 3x2mm (0.45mm) |
| GD25WD80C | 8Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25WD40C | 4Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25WD20C | 2Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25WD10C | 1Mb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |
| GD25WD05C | 512Kb | 1.65V-3.6V | 4KB / 32KB / 64KB | Single / Dual Output | 100MHz(x1) 80MHz(x2) | SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 1.5x1.5mm USON8 3x2mm (0.45mm) |

Product Series

3V

- Q: Quad I/O, General
- B: Quad I/O, QE=1
- F: Quad I/O, DTR, QE=1
- X: Octal I/O
- D: Dual Output
- R: Quad I/O, QE=1, Stack RPMC
- S: Quad I/O, Stack Die, QE=1
- T: Quad I/O, High Performance

2.5V

- VQ: Quad I/O, General
- VE: Quad I/O, Low Power

1.8V

- LT: Quad I/O, High Performance
- LR: Quad I/O, QE=1, Stack RPMC
- LX: Octal I/O
- LQ: Quad I/O, General
- LB: Quad I/O, QE=1
- LF: Quad I/O, DTR, QE=1

- LH: Quad I/O, Faster tpp
- LD: Dual Output
- LE: Quad I/O, Low Power

1.65V~3.6V

- WQ: Quad I/O
- WD: Dual Output



SPI NAND Flash



GD SPI NAND Flash Features

3.3V

- ◆ Power Supply Voltage: 2.7V~3.6V
- ◆ High Speed Clock Frequency:
 - Up to 120MHz for fast read with 30pF load
 - Quad I/O Data transfer up to 480Mbit/s
- ◆ Flexible Memory Architecture:
 - 2048Byte page for read and program
 - 128KByte per block for erase
- ◆ Enhanced Access Performance:
 - 2KByte cache for fast random read
 - Cache Read and Cache Program
- ◆ Advanced Feature for SPI NAND:
 - Internal ECC algorithm
 - Internal data move by page with ECC
 - Promised good block-0 with ECC

1.8V

- ◆ Power Supply Voltage: 1.7V~2.0V
- ◆ High Speed Clock Frequency:
 - Up to 120MHz for fast read with 30pF load
 - Quad I/O Data transfer up to 480Mbit/s
- ◆ Flexible Memory Architecture:
 - 2048Byte page for read and program
 - 128KByte per block for erase
- ◆ Enhanced Access Performance:
 - 2KByte cache for fast random read
 - Cache Read and Cache Program
- ◆ Advanced Feature for SPI NAND:
 - Internal ECC algorithm
 - Internal data move by page with ECC
 - Promised good block-0 with ECC

GD SPI NAND Flash Product List

3.3V

| Part No. | Density | Frequency | I/O Bus | Page Size | Package |
|---------------|---------|-----------|----------|-----------|-----------------------|
| GD5F1GQ4UxxxG | 1Gb | 120MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm/WSO8 6*5mm |
| GD5F1GQ4UxxxH | 1Gb | 120MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm/WSO8 6*5mm |
| GD5F1GQ5UxxxG | 1Gb | 133MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F1GQ5UxxxH | 1Gb | 133MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |
| GD5F2GQ5UxxxG | 2Gb | 104MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F2GQ5UxxxH | 2Gb | 104MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |
| GD5F4GQ6UxxxG | 4Gb | 104MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F4GQ6UxxxH | 4Gb | 104MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |

Note: For other Part Number options, please contact GigaDevice sales.

1.8V

| Part No. | Density | Frequency | I/O Bus | Page Size | Package |
|---------------|---------|-----------|----------|-----------|-----------------------|
| GD5F1GQ4RxxxG | 1Gb | 120MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm/WSO8 6*5mm |
| GD5F1GQ4RxxxH | 1Gb | 120MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm/WSO8 6*5mm |
| GD5F1GQ5RxxxG | 1Gb | 104MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F1GQ5RxxxH | 1Gb | 104MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |
| GD5F2GQ5RxxxG | 2Gb | 80MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F2GQ5RxxxH | 2Gb | 80MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |
| GD5F4GQ6RxxxG | 4Gb | 80MHZ | x1/x2/x4 | 2KB+128B | WSO8 8*6mm |
| GD5F4GQ6RxxxH | 4Gb | 80MHZ | x1/x2/x4 | 2KB+64B | WSO8 8*6mm |

Note: For other Part Number options, please contact GigaDevice sales.

GD SPI NAND Flash Part Number Definition



Parallel NAND Flash

GD Parallel NAND Flash Features



- | | |
|--|---|
| <ul style="list-style-type: none"> ◆ Power Supply: 2.7V ~ 3.6V ◆ Density: 1Gb / 2Gb / 4G / 8G / 16G ◆ Page Size: 2048Byte + 128Byte / 2048Byte + 64Byte ◆ Flash Array to Register Time: 25us ◆ IO Read Performance: 20ns / 25ns ◆ Bus Width: x8 or x16 options ◆ Temperature Range: -40° C to 85° C / -40° C to 105° C ◆ ONFI 1.0 Compatible | <ul style="list-style-type: none"> ◆ Power Supply: 1.7V ~ 1.95V ◆ Density: 1Gb / 2Gb / 4G / 8G / 16G ◆ Page Size: 2048Byte + 128Byte / 2048Byte + 64Byte ◆ Flash Array to Register Time: 25us ◆ IO Read Performance: 25ns / 45ns ◆ Bus Width: x8 or x16 options ◆ Temperature Range: -40° C to 85° C / -40° C to 105° C ◆ ONFI 1.0 Compatible |
|--|---|

GD Parallel NAND Flash Product List

3.3V

| Part No. | Density | Sequential Access Time | I/O Bus | Page Size | ECC Requirement | Package |
|--------------|---------|------------------------|---------|-----------|--------------------|---------------------------------|
| GD9FU1GxF2A | 1Gb | 25ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU1GxF3A | 1Gb | 25ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU2GxF2A | 2Gb | 20ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU2GxF3A | 2Gb | 20ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU4GxF2A | 4Gb | 20ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU4GxF3A | 4Gb | 20ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU8GxE2A | 8Gb | 20ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FU8GxE3A | 8Gb | 20ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FUAGxD2A | 16Gb | 20ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FUAGxD3A | 16Gb | 20ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AU2GxF3A* | 2Gb | 20ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AU4GxF3A* | 4Gb | 20ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AU8GxE3A* | 8Gb | 20ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AUAGxD3A* | 16Gb | 20ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |

Note: The device has internal 4bit/512B ECC, doesn't need host ECC*.

1.8V

| Part No. | Density | Sequential Access Time | I/O Bus | Page Size | ECC Requirement | Package |
|--------------|---------|------------------------|---------|-----------|--------------------|---------------------------------|
| GD9FS1GxF2A | 1Gb | 45ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS1GxF3A | 1Gb | 45ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS2GxF2A | 2Gb | 25ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS2GxF3A | 2Gb | 25ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS4GxF2A | 4Gb | 25ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS4GxF3A | 4Gb | 25ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS8GxE2A | 8Gb | 25ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FS8GxE3A | 8Gb | 25ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FSAGxD2A | 16Gb | 25ns | x8/x16 | 2KB+128B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9FSAGxD3A | 16Gb | 25ns | x8/x16 | 2KB+64B | 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AS2GxF3A* | 2Gb | 25ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AS4GxF3A* | 4Gb | 25ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9AS8GxE3A* | 8Gb | 25ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |
| GD9ASAGxD3A* | 16Gb | 25ns | x8/x16 | 2KB+64B | Internal 4bit/512B | TSOP48 20*12mm/ BGA63 9*11mm |

Note: The device has internal 4bit/512B ECC, doesn't need host ECC*.


GD Parallel NAND Flash Part Number Definition




Flash Package Options


Note:


1. The values provided are the normal values for length, width and pitch, as well as the max values for thickness.
2. The pictures are for reference only. Please always verify your selection with the product data sheet.

| | | |
|---|---|--|
| T |  | SOP8 150mil Length(Normal) 4.90 Width(Normal) 6.00 Thickness(Max) 1.75 Pitch(Normal) 1.27 mm |
|---|---|--|

| | | |
|---|--|--|
| P |  | DIP8 300mil Length(Normal) 9.32 Width(Normal) 7.94 Thickness(Max) 3.50 Pitch(Normal) 2.54 mm |
|---|--|--|


| | | |
|---|---|---|
| U |  | USON8 3*2mm (0.55mm) Length(Normal) 3.00 Width(Normal) 2.00 Thickness(Max) 0.60 Pitch(Normal) 0.50 mm |
|---|---|---|

| | | |
|---|---|---|
| Q |  | USON8 4*4mm (0.45mm) Length(Normal) 4.00 Width(Normal) 4.00 Thickness(Max) 0.50 Pitch(Normal) 0.80 mm |
|---|---|---|

| | | |
|---|---|--|
| S |  | SOP8 208mil Length(Normal) 5.23 Width(Normal) 7.90 Thickness(Max) 2.16 Pitch(Normal) 1.27 mm |
|---|---|--|


| | | |
|---|--|---|
| Z |  | TFBGA-24ball 6*8mm (4*6ball array) Length(Normal) 6.00 Width(Normal) 8.00 Thickness(Max) 1.20 Pitch(Normal) 1.00 mm |
|---|--|---|


| | | |
|---|---|---|
| E |  | USON8 3*2mm (0.45mm) Length(Normal) 3.00 Width(Normal) 2.00 Thickness(Max) 0.50 Pitch(Normal) 0.50 mm |
|---|---|---|

| | | |
|---|---|--|
| W |  | WSON8 6*5mm Length(Normal) 6.00 Width(Normal) 5.00 Thickness(Max) 0.80 Pitch(Normal) 1.27 mm |
|---|---|--|


| | | |
|---|---|---|
| M |  | VSOP8 150mil Length(Normal) 4.90 Width(Normal) 6.00 Thickness(Max) 0.90 Pitch(Normal) 1.27 mm |
|---|---|---|


| | | |
|---|--|---|
| B |  | TFBGA-24ball 6*8mm (5*5ball array) Length(Normal) 6.00 Width(Normal) 8.00 Thickness(Max) 1.20 Pitch(Normal) 1.00 mm |
|---|--|---|

| | | |
|---|---|--|
| H |  | USON8 3*3mm Length(Normal) 3.00 Width(Normal) 3.00 Thickness(Max) 0.60 Pitch(Normal) 0.50 mm |
|---|---|--|

| | | |
|---|---|--|
| Y |  | WSON8 8*6mm Length(Normal) 8.00 Width(Normal) 6.00 Thickness(Max) 0.80 Pitch(Normal) 1.27 mm |
|---|---|--|


| | | |
|---|---|---|
| M |  | TSOP48 Length(Normal) 12.0 Width(Normal) 20.0 Thickness(Max) 1.20 Pitch(Normal) 0.50 mm |
|---|---|---|


| | | |
|---|--|---|
| 8 |  | LGA8 3*2mm Length(Normal) 3.00 Width(Normal) 2.00 Thickness(Max) 0.50 Pitch(Normal) 0.50 mm |
|---|--|---|


| | | |
|---|---|--|
| N |  | USON8 3*4mm Length(Normal) 3.00 Width(Normal) 4.00 Thickness(Max) 0.60 Pitch(Normal) 0.80 mm |
|---|---|--|


| | | |
|---|---|---|
| L |  | WLCSP Depends on specific product |
|---|---|---|


| | | |
|---|---|---|
| V |  | VSOP8 208mil Length(Normal) 5.28 Width(Normal) 7.90 Thickness(Max) 1.00 Pitch(Normal) 1.27 mm |
|---|---|---|

| | | |
|---|--|---|
| 9 |  | LGA8 8*6mm Length(Normal) 8.00 Width(Normal) 6.00 Thickness(Max) 0.80 Pitch(Normal) 1.27 mm |
|---|--|---|

| | | |
|---|---|---|
| J |  | USON8 4*4mm (0.55mm) Length(Normal) 4.00 Width(Normal) 4.00 Thickness(Max) 0.60 Pitch(Normal) 0.80 mm |
|---|---|---|

| | | |
|---|---|---|
| L |  | FBGA63 Length(Normal) 9.00 Width(Normal) 11.0 Thickness(Max) 1.00 Pitch(Normal) 0.80 mm |
|---|---|---|

| | | |
|---|---|---|
| F |  | SOP16 300mil Length(Normal) 10.30 Width(Normal) 10.35 Thickness(Max) 2.75 Pitch(Normal) 1.27 mm |
|---|---|---|

| | | |
|---|--|--|
| K |  | USON8 1.5*1.5mm Length(Normal) 1.50 Width(Normal) 1.50 Thickness(Max) 0.50 Pitch(Normal) 0.40 mm |
|---|--|--|

Capacitive Fingerprint Sensor



Overview

- ◆ Diverse shapes: round, square, rectangular etc
- ◆ All kinds of typical sizes: different diameters, different side lengths, especially ultra-narrow
- ◆ Front/Back/Edge-Mounted package sensor type supported
- ◆ Supports different surface materials: matte / glossy coating, ceramic / glass cover
- ◆ High Sensitivity, High SNR, High quality image.
- ◆ 256 true gray scale values, 8 bits per pixel.
- ◆ Support Standard SPI Bus Interface.
- ◆ Resolution:508 DPI

Fingerprint Identification

- ◆ Adaptive Calibration: automatically adjusts the sensor configuration according to the different types of fingerprint
- ◆ Adaptive for many kinds of algorithm includes finger pattern and feature points
- ◆ Getting the high definition fingerprint image without a metal ring module.
- ◆ Smart wake-up feature

Electrical Properties

- ◆ Supply Voltage: 2.6V~3.6V
- ◆ VDDIO Voltage: 1.8V~AVDD;
- ◆ Power Consumption:
 - Image scan Mode (Frame Rate>20F/s or custom):8.5mA (configurable)
 - Sleep Mode (Before awaken):100µA (Typically)
 - Deep sleep Mode: 30~100µA

Reliability

- ◆ Sensor ESD Performance
 - Air discharge : ±25.0 kV
 - Direct discharge : ±8.0 kV
- ◆ Sensor Latch-up Performance: ±400.00mA

Capacitive Fingerprint

| Part No. | Type | Position | LGA Square Size | | LGA Round size | | Sensing Area | Pixel Array |
|----------|---------|---------------------|-----------------|--------------|----------------|----------|--------------|-------------|
| GSL6157N | Coating | Side (super narrow) | 14.3*2.4 | | | | 8 x 1.8mm | 160 x 36 |
| GSL6150N | Coating | Postposition | Max:12x12 | Min:7.5x7.5 | Max:φ12 | Min:φ8.5 | 4.0 x 3.2 mm | 80 x 64 |
| GSL6156E | Coating | Side | Max:16.4x6.9 | Min:12x2.9 | ———— | ———— | 6.8 x 2.4mm | 192 x 68 |
| GSL6182E | Coating | Smart door lock /PC | Max:16x16 | Min:13x13 | Max:φ16 | Min:φ13 | 8 x 8mm | 160 x 160 |
| GSL6185E | Coating | Smart door lock /PC | Max:16x16 | Min:13x13 | Max:φ16 | Min:φ13 | 5.7 x 6.6mm | 114 x 132 |
| GSL6275E | Cover | Preposition | Max:16.4x6.9 | Min:12.5x4.0 | ———— | ———— | 8.8 x 3.2 mm | 176 x 64 |
| GSL6250N | Cover | Postposition | Max:12x12 | Min:7.5x7.5 | Max:φ12 | Min:φ8.5 | 4.0 x 3.2 mm | 80 x 64 |
| GSL6257N | Cover | Side (super narrow) | 14.3*2.4 | | | | 8 x 1.8mm | 160 x 36 |

Optical Fingerprint Sensor



Overview

- ◆ Different types of optical sensors under the display: CCM (CSM), ultra-thin, TFT large area
- ◆ All kinds of OLED type supported(both rigid and flexible OLED)
- ◆ FRR ≤ 1.5%@FAR ≤ 1/50,000
- ◆ Enroll times ≤ 12 times
- ◆ All 360 degrees can be identified

CCM Sensor

- ◆ Large size pixel design for low-light under display fingerprint application
- ◆ Advanced Single-chip architecture
- ◆ Optimized lens design matching pixel array
- ◆ No flash supported
- ◆ Firstly introduce Chip-Scale Package in under-display fingerprint application

Ultrathin Sensor

- ◆ Ultrathin module thickness
- ◆ Optimized collimator design
- ◆ No lamination with OLED for high-yield manufacture
- ◆ High sensitivity and resolution for better fingerprint recognition

TFT Large Area Sensor

- ◆ System Optimized Design (ROIC/GateIC self-designed matching TFT sensor)
- ◆ Low TFT sensor leakage 10^{-14} (Ion/Ioff 1E8, better than normal 1E6)
- ◆ High-speed Scanning Supported(small size sensing with fast-read-out data)
- ◆ Both glass and PI substrate type supported
- ◆ High QE with optimized TFT sensor design

Optical Fingerprint Under OLED

| Part No. | Position | Finger Sensing Area | Chip Sensing Area | Pixel Array | Supported Under Screen Height |
|----------|----------------|---------------------|-------------------|-------------|-------------------------------|
| GSL7000A | CCM | 6.0 x 6.0 mm | 2.0 x 2.0 mm | 320 x 320 | 3.5~3.9mm |
| GSL7001A | CCM | 6.0 x 6.0 mm | 2.0 x 2.0 mm | 320 x 320 | 3.5~3.9mm |
| GSL7301A | Ultrathin | 6.0 x 6.0 mm | 6.0 x 6.0 mm | 88 x 86 | 0.5~1.0mm |
| GSL7303A | Ultrathin | 6.0 x 9.0 mm | 6.0 x 9.0 mm | 180 x 280 | 0.3~0.8mm |
| GSL7305A | Ultrathin | 6.0 x 6.0 mm | 6.0 x 6.0 mm | 180 x 180 | 0.3~0.8mm |
| GSL7253 | TFT large area | 30 x 20 mm | 30 x 20 mm | 300 x 200 | 0.3~0.6mm |
| GSL7001F | CSM | 6.0 x 6.0 mm | 2.0 x 2.0 mm | 320 x 320 | 3.5~3.9mm |

MEMS Ultrasonic Sensor



Fingerprint Identification

- ◆ High resolution 3D fingerprint image with epidermal and dermal skin
- ◆ Advanced ultrasonic sensor design in fingerprint application
- ◆ Creative CMOS and MEMS monolithic chip design
- ◆ Pulse echo and Beam-forming supported for higher sensitivity
- ◆ Better identification with water, cream, lotion fingerprint
- ◆ Capacitive smart wake-up supported
- ◆ Ultrathin thickness design (0.3mm supported)
- ◆ Under Flexible OLED supported
- ◆ Under different materials like cover-glass/metal/plastic etc

Ultrasonic FP Under OLED

| Part No. | Position | Finger Sensing Area | Chip Sensing Area | Pixel Array | Supported Under Screen Height | Transmission Thickness |
|----------|----------------------|---------------------|-------------------|-------------|-------------------------------|--------------------------|
| GSL8165A | Ultrathin | 4.8 x 4.8 mm | 4.8 x 4.8 mm | 80 x 80 | 0.3~1mm | 1mm glass/metal/OLED/etc |
| GSL8252 | Ultrathin large area | | 30 x 20 mm | 428 x 285 | 0.3~0.6mm | 1mm glass/metal/OLED/etc |

Ultrasonic-TOF

| Part No. | Dimensions | Operating Range | Accuracy | Interface | Power @1 sample/sec @ max range | Power @30 sample/sec@ max range | Samlpe Rate | FOV | Application |
|----------|--------------------|-----------------|-------------|-----------|---------------------------------|---------------------------------|-------------------------------|------------------|---|
| GSL8300 | 3.5 x 3.5 x 1.25mm | Up to 60cm | <1.3 mm RMS | I2C | 20 u A | 230 u A | Up to 100 samples /sec @ 60cm | Up to 180 degree | Touchless gesture UI; VR/AR, Range & presense detection |

Ultrasonic- Blood Pressure Monitoring

| Part No. | Position | Dimensions | Operating Range | Accuracy | Samlpe Rate |
|----------|----------|-------------------|-----------------|----------|------------------------|
| GSL8011 | wrist | 6.4 x 6.4 x 0.5mm | Up to 1cm | <5 mmHg | Up to 1000 samples/sec |

Capacitive Touchscreen Controller



Overview:

- ◆ Outstanding anti RF, LCD and power supply interference
- ◆ Detect up to 10 fingers
- ◆ Panel Thickness: glass up to 2.5mm, plastic up to 1.2mm
- ◆ I2C compatible slave mode 400KHz.
- ◆ I/O Interface: 1.8V /3.3V compatible

Recommended Capacitive Touch IC for Mobile Phone

| Part No. | TP Type Supported | Channel Number | Recommended Dimensions |
|----------|--|----------------|------------------------|
| GSL1688F | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 16 x 10 | <4 inch |
| GSL1691F | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, full ITO, sito | 18 x 12 | 5 ~ 6 inch |
| GSL2682C | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 23 x 12 | <5 inch |
| GSL915 | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 26 x 14 | <5 inch |
| GSL968 | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 17 x 10 | 4 inch |
| GSL2688 | Single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 26 x 16 | 5 ~ 6 inch |
| GSL2691 | S+D37:D46 single layer multi-point (including double end pin, silver paste jumper), traditional DITO, silver paste free DITO, single-layer bridge building process | 29 x 14 | 5 ~ 6 inch |
| GSL2038 | Two points of single-layer partition (with silver paste, all ITO) | 25 | <3 inch |
| GSL2232 | Two points of single-layer partition (with silver paste, all ITO) | 32 | 3.5 ~ 4.5 inch |
| GSL2336 | Two points of single-layer partition (with silver paste, all ITO) | 36 | 4 ~ 5 inch |
| GSL2338 | Two points of single-layer partition (with silver paste, all ITO) | 40 | 4 ~ 6 inch |

Recommended Capacitive Touch IC for Flat Panel

| Part No. | TP Type Supported | Channel Number | Recommended Dimensions |
|----------|---|----------------|------------------------|
| GSL1680F | Traditional DITO (including dual-mode GFF), silver-free DITO, single-layer bridge | 16 x 10 | 7 inch |
| GSL1686F | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 16 x 10 | 7 inch |
| GSL1681F | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 18 x 12 | 7 inch |
| GSL2681C | Traditional DITO (including dual-mode GFF), silver-free DITO, single-layer bridge | 23 x 12 | 7 ~ 7.85 inch |
| GSL3670D | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 26 x 14 | 7.85 ~ 9 inch |
| GSL3676 | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 28 x 18 | 9 ~ 10.1 inch |
| GSL3680 | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 31 x 20 | 9 ~ 10.1 inch |
| GSL3692 | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 32 x 24 | 9.7 ~ 12 inch |
| GSL5680 | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 42 x 30 | 9.7 ~ 15 inch |
| GSL5690 | Single-layer multi-point (all ITO), single-layer multi-point double-terminal PIN, sliver jumper, traditional DITO, sliver free DITO, SITO | 72 x 40 | <21.6 inch |