

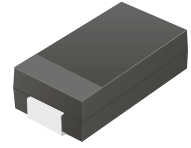
TV06B5V0-HF Thru. TV06B441-HF

Working Peak Reverse voltage: 5.0 to 440Volts


Power Dissipation: 600 Watts

RoHS Device

Halogen Free

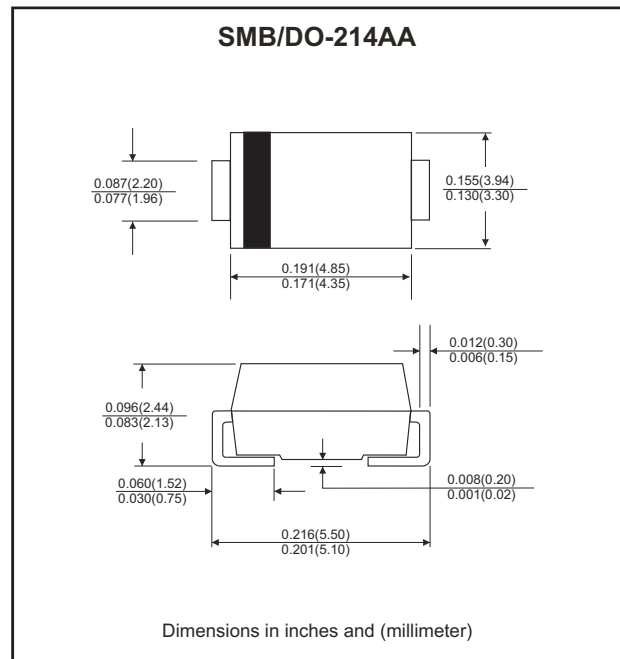


Features

- Glass passivated chip.
- 600W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01%.
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- UL recognized file # E349157  Range: TV06B5V0J(B) thru. TV06B400J(B)

Mechanical Data

- Case: JEDEC DO-214AA, molded plastic.
- Epoxy: UL 94V-0 rate flame retardant.
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar.
- Mounting position: Any.
- Weight: 0.108 gram (approx.)



Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Parameter | Symbol | Value | Units |
|--|-----------------------------------|----------------|-------|
| Peak power dissipation with a 10/1000 μ s waveform (Note 1) | P _{PP} | 600 | Watts |
| Peak pulse current with a 10/1000 μ s waveform (Note 1) | I _{PP} | See Next Table | A |
| Power dissipation on infinite heatsink at T _L =75°C | P _D | 5.0 | Watts |
| Peak forward surge current, 8.3ms single half sine-wave unidirectional only (Note 2) | I _{FSM} | 100 | A |
| Maximum instantaneous forward voltage at 50 A for unidirectional only (Note 3) | V _F | 3.5/5.0 | V |
| Operating junction and Storage temperature range | T _J , T _{STG} | -55 to +150 | °C |

- Note: 1. Non-repetitive current pulse per Fig. 5 and derated above T_A=25°C per Fig.1
2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3. V_F<3.5V for devices of V_{BR} <200V and V_F <5.0V for devices of V_{BR} >201V

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Rating and Characteristics Curves (TV06B5V0-HF Thru. TV06B441-HF)

Fig.1 - Pulse Derating Curve

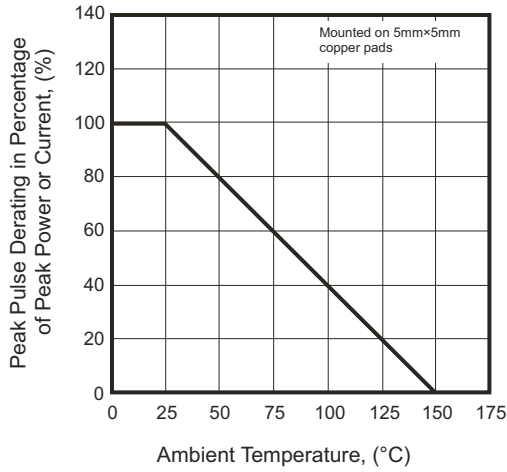


Fig.2 - Max. Non-Repetitive Surge Current

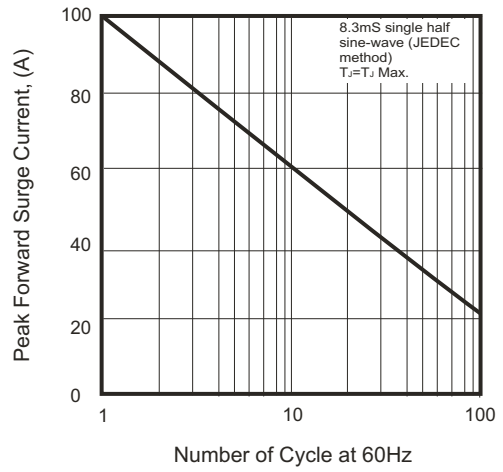


Fig.3 - Steady State Power Derating Curve

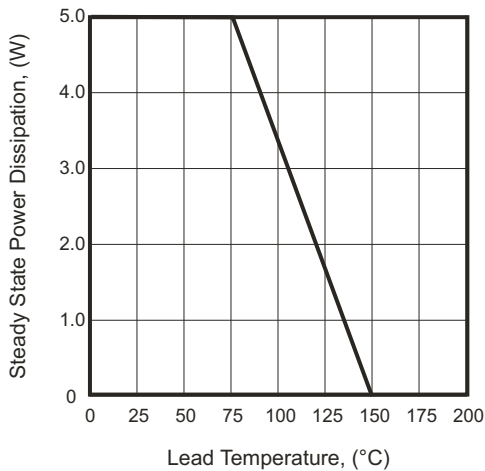


Fig.4 - Peak Pulse Power Rating Curve



Fig.5 - Pulse Waveform

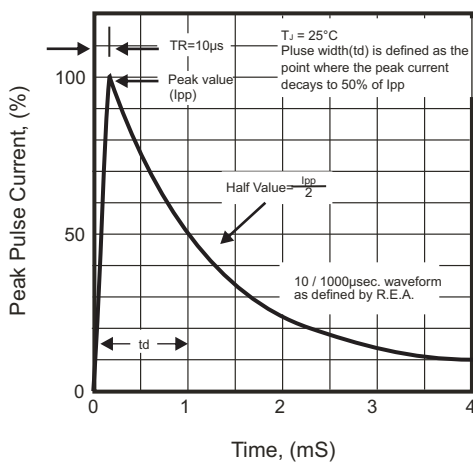
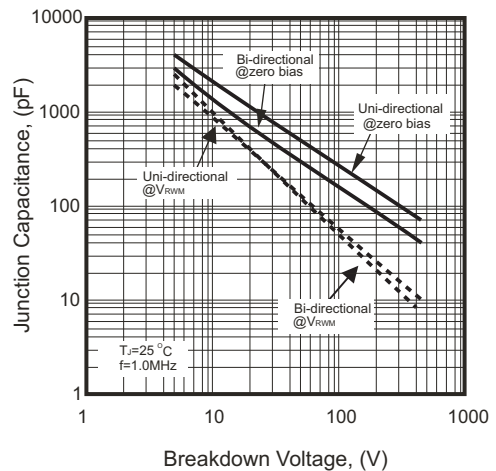


Fig.6 - Typical Junction Capacitance



SMD Transient Voltage Suppressor



Electrical Characteristics (TV06B5V0-HF Thru. TV06B441-HF)

| Part No. | Breakdown voltage V _{BR} @ I _T | | | Maximum Reverse Leakage @V _{VRWM} I _R (uA) | Working Peak Reverse Voltage V _{VRWM} (V) | Maximum Reverse Surge Current I _{PP} (A) | Maximum Clamping Voltage @I _{PP} V _C (V) | Device Marking Code | |
|-----------------|---|-------------|------------------------|--|--|---|--|---------------------------|----|
| | Min. (V) | Max. (V) | I _T (mA) | | | | | UNI | BI |
| TV06B5V0J(B)-HF | 6.40 | 7.00 | 10 | 800 | 5.0 | 65.22 | 9.2 | KE | AE |
| TV06B6V0J(B)-HF | 6.67 | 7.37 | 10 | 800 | 6.0 | 58.25 | 10.3 | KG | AG |
| TV06B6V5J(B)-HF | 7.22 | 7.98 | 10 | 500 | 6.5 | 53.57 | 11.2 | KK | AK |
| TV06B7V0J(B)-HF | 7.78 | 8.60 | 10 | 200 | 7.0 | 50.00 | 12.0 | KM | AM |
| TV06B7V5J(B)-HF | 8.33 | 9.21 | 1 | 100 | 7.5 | 46.51 | 12.9 | KP | AP |
| TV06B8V0J(B)-HF | 8.89 | 9.83 | 1 | 50 | 8.0 | 44.12 | 13.6 | KR | AR |
| TV06B8V5J(B)-HF | 9.44 | 10.40 | 1 | 20 | 8.5 | 41.67 | 14.4 | KT | AT |
| TV06B9V0J(B)-HF | 10.00 | 11.10 | 1 | 10 | 9.0 | 38.96 | 15.4 | KV | AV |
| TV06B100J(B)-HF | 11.10 | 12.30 | 1 | 5.0 | 10.0 | 35.29 | 17.0 | KX | AX |
| TV06B110J(B)-HF | 12.20 | 13.50 | 1 | 1.0 | 11.0 | 32.97 | 18.2 | KZ | AZ |
| TV06B120J(B)-HF | 13.30 | 14.70 | 1 | 1.0 | 12.0 | 30.15 | 19.9 | LE | BE |
| TV06B130J(B)-HF | 14.40 | 15.90 | 1 | 1.0 | 13.0 | 27.91 | 21.5 | LG | BG |
| TV06B140J(B)-HF | 15.60 | 17.20 | 1 | 1.0 | 14.0 | 25.86 | 23.2 | LK | BK |
| TV06B150J(B)-HF | 16.70 | 18.50 | 1 | 1.0 | 15.0 | 24.59 | 24.4 | LM | BM |
| TV06B160J(B)-HF | 17.80 | 19.70 | 1 | 1.0 | 16.0 | 23.08 | 26.0 | LP | BP |
| TV06B170J(B)-HF | 18.90 | 20.90 | 1 | 1.0 | 17.0 | 21.74 | 27.6 | LR | BR |
| TV06B180J(B)-HF | 20.00 | 22.10 | 1 | 1.0 | 18.0 | 20.55 | 29.2 | LT | BT |
| TV06B190J(B)-HF | 21.10 | 23.30 | 1 | 1.0 | 19.0 | 19.49 | 30.8 | LB | BB |
| TV06B200J(B)-HF | 22.20 | 24.50 | 1 | 1.0 | 20.0 | 18.52 | 32.4 | LV | BV |
| TV06B220J(B)-HF | 24.40 | 26.90 | 1 | 1.0 | 22.0 | 16.90 | 35.5 | LX | BX |
| TV06B240J(B)-HF | 26.70 | 29.50 | 1 | 1.0 | 24.0 | 15.42 | 38.9 | LZ | BZ |
| TV06B260J(B)-HF | 28.90 | 31.90 | 1 | 1.0 | 26.0 | 14.25 | 42.1 | ME | CE |
| TV06B280J(B)-HF | 31.10 | 34.40 | 1 | 1.0 | 28.0 | 13.22 | 45.4 | MG | CG |
| TV06B300J(B)-HF | 33.30 | 36.80 | 1 | 1.0 | 30.0 | 12.40 | 48.4 | MK | CK |
| TV06B330J(B)-HF | 36.70 | 40.60 | 1 | 1.0 | 33.0 | 11.26 | 53.3 | MM | CM |
| TV06B360J(B)-HF | 40.00 | 44.20 | 1 | 1.0 | 36.0 | 10.33 | 58.1 | MP | CP |
| TV06B400J(B)-HF | 44.40 | 49.10 | 1 | 1.0 | 40.0 | 9.30 | 64.5 | MR | CR |
| TV06B430J(B)-HF | 47.80 | 52.80 | 1 | 1.0 | 43.0 | 8.65 | 69.4 | MT | CT |
| TV06B450J(B)-HF | 50.00 | 55.30 | 1 | 1.0 | 45.0 | 8.25 | 72.7 | MV | CV |
| TV06B480J(B)-HF | 53.30 | 58.90 | 1 | 1.0 | 48.0 | 7.75 | 77.4 | MX | CX |
| TV06B510J(B)-HF | 56.70 | 62.70 | 1 | 1.0 | 51.0 | 7.28 | 82.4 | MZ | CZ |
| TV06B540J(B)-HF | 60.00 | 66.30 | 1 | 1.0 | 54.0 | 6.89 | 87.1 | NE | DE |
| TV06B580J(B)-HF | 64.40 | 71.20 | 1 | 1.0 | 58.0 | 6.41 | 93.6 | NG | DG |
| TV06B600J(B)-HF | 66.70 | 73.70 | 1 | 1.0 | 60.0 | 6.20 | 96.8 | NK | DK |
| TV06B640J(B)-HF | 71.10 | 78.60 | 1 | 1.0 | 64.0 | 5.83 | 103.0 | NM | DM |
| TV06B700J(B)-HF | 77.80 | 86.00 | 1 | 1.0 | 70.0 | 5.31 | 113.0 | NP | DP |
| TV06B750J(B)-HF | 83.30 | 92.10 | 1 | 1.0 | 75.0 | 4.96 | 121.0 | NR | DR |
| TV06B780J(B)-HF | 86.70 | 95.80 | 1 | 1.0 | 78.0 | 4.76 | 126.0 | NT | DT |
| TV06B800J(B)-HF | 88.80 | 97.60 | 1 | 1.0 | 80.0 | 4.63 | 129.6 | NB | DB |
| TV06B850J(B)-HF | 94.40 | 104.00 | 1 | 1.0 | 85.0 | 4.38 | 137.0 | NV | DV |
| TV06B900J(B)-HF | 100.00 | 111.00 | 1 | 1.0 | 90.0 | 4.11 | 146.0 | NX | DX |
| TV06B101J(B)-HF | 111.00 | 123.00 | 1 | 1.0 | 100.0 | 3.70 | 162.0 | NZ | DZ |
| TV06B111J(B)-HF | 122.00 | 135.00 | 1 | 1.0 | 110.0 | 3.39 | 177.0 | PE | EE |
| TV06B121J(B)-HF | 133.00 | 147.00 | 1 | 1.0 | 120.0 | 3.11 | 193.0 | PG | EG |

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REV:D

SMD Transient Voltage Suppressor

Electrical Characteristics (TV06B5V0-HF Thru. TV06B441-HF)

| Part No. | Breakdown voltage V _{BR} @ I _T | | | Maximum Reverse Leakage @V _{RWM} I _R (uA) | Working Peak Reverse Voltage V _{RWM} (V) | Maximum Reverse Surge Current I _{PP} (A) | Maximum Clamping Voltage @I _{PP} V _C (V) | Device Marking Code | |
|-----------------|---|-------------|------------------------|---|---|---|--|---------------------------|----|
| | Min. (V) | Max. (V) | I _T (mA) | | | | | UNI | BI |
| TV06B131J(B)-HF | 144.0 | 159.0 | 1 | 1.0 | 130.0 | 2.87 | 209.0 | PK | EK |
| TV06B141J(B)-HF | 155.0 | 171.0 | 1 | 1.0 | 140.0 | 2.65 | 226.8 | PB | EB |
| TV06B151J(B)-HF | 167.0 | 185.0 | 1 | 1.0 | 150.0 | 2.47 | 243.0 | PM | EM |
| TV06B161J(B)-HF | 178.0 | 197.0 | 1 | 1.0 | 160.0 | 2.32 | 259.0 | PP | EP |
| TV06B171J(B)-HF | 189.0 | 209.0 | 1 | 1.0 | 170.0 | 2.18 | 275.0 | PR | ER |
| TV06B181J(B)-HF | 200.0 | 220.0 | 1 | 1.0 | 180.0 | 2.06 | 291.6 | PT | ET |
| TV06B191J(B)-HF | 211.0 | 232.0 | 1 | 1.0 | 190.0 | 1.95 | 307.8 | PV | EV |
| TV06B201J(B)-HF | 224.0 | 247.0 | 1 | 1.0 | 200.0 | 1.85 | 324.0 | PW | EW |
| TV06B221J(B)-HF | 246.0 | 272.0 | 1 | 1.0 | 220.0 | 1.69 | 356.0 | PX | EX |
| TV06B251J(B)-HF | 279.0 | 309.0 | 1 | 1.0 | 250.0 | 1.48 | 405.0 | PZ | EZ |
| TV06B301J(B)-HF | 335.0 | 371.0 | 1 | 1.0 | 300.0 | 1.23 | 486.0 | QE | FE |
| TV06B351J(B)-HF | 391.0 | 432.0 | 1 | 1.0 | 350.0 | 1.06 | 567.0 | QG | FG |
| TV06B401J(B)-HF | 447.0 | 494.0 | 1 | 1.0 | 400.0 | 0.93 | 648.0 | QK | FK |
| TV06B441J(B)-HF | 492.0 | 543.0 | 1 | 1.0 | 440.0 | 0.84 | 713.0 | QM | FM |

Note:

- 1) Suffix J denotes 5% tolerance devices.
- 2) Suffix B after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double.

Reel Taping Specification



| DO-214AA (SMB) | SYMBOL | A | B | C | d | D | D1 | D2 |
|-------------------|--------|-------------------|-------------------|-------------|-------------------|--------|-------------|-------------------|
| | (mm) | 3.67 ± 0.10 | 5.69 ± 0.10 | 4.50 (max) | 1.55 ± 0.10 | 330.00 | 50.00 (min) | 13.00 ± 0.20 |
| | (inch) | 0.144 ± 0.004 | 0.224 ± 0.004 | 0.177 (max) | 0.061 ± 0.004 | 13.000 | 1.969 (min) | 0.512 ± 0.008 |

| DO-214AA (SMB) | SYMBOL | E | F | P | P0 | P1 | W | W1 |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
| | (mm) | 1.75 ± 0.10 | 5.50 ± 0.05 | 8.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 12.00 ± 0.30 | 18.40 (max) |
| | (inch) | 0.069 ± 0.004 | 0.217 ± 0.002 | 0.315 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.472 ± 0.012 | 0.724 (max) |

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