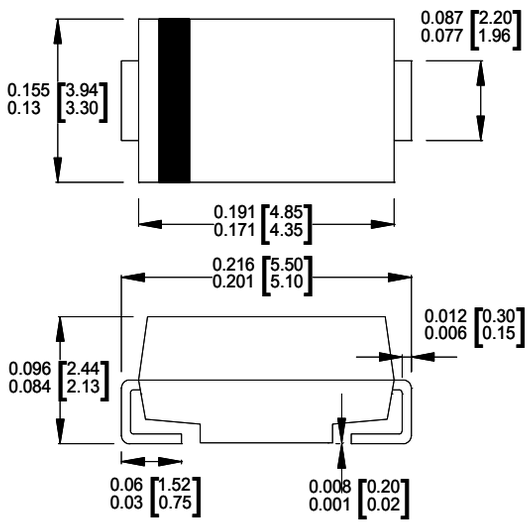
# TV06B5V0-G Series

## Surface Mount Transient Voltage Suppressors

SMB/ DO-214AA




Dimensions : inch [ mm ]

**Working Voltage: 5.0 to 440 V**
**Peak Pulse Power: 600 W**

### Features :

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Mechanical Data :

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

### Maximum Ratings($T_A$=25℃ unless otherwise noted)

| Parameter | Symbol | Value | UNIT |
|---|---|---|---|
| Peak power dissipation with a 10/1000μs waveform(1) | $P_{PP}$ | 600 | W |
| Peak pulse current wih a 10/1000μs waveform(1) | $I_{PP}$ | See Next Table | A |
| Power dissipation on infinite heatsink at $T_L$ = 75 °C | $P_D$ | 5.0 | W |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2) | $I_{FSM}$ | 100 | A |
| Maximum instantaneous forward voltage at 50 A for unidirectional only(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

## Ratings and Characteristics Curves ($T_A$=25℃ unless otherwise noted)

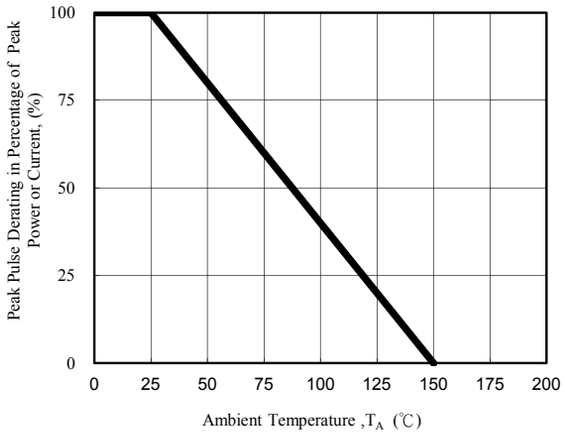



Fig. 1 - Pulse Derating Curve

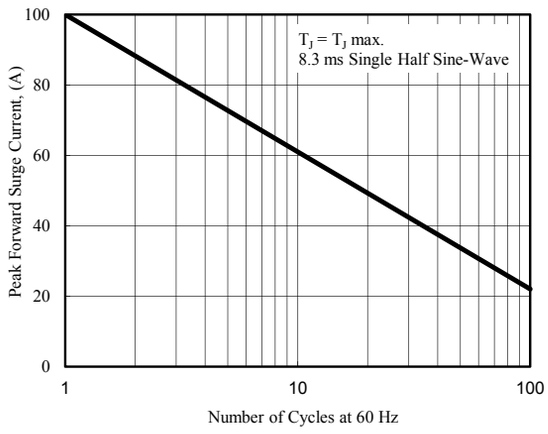



Fig. 2 - Maximum Non-Repetitive Surge Current

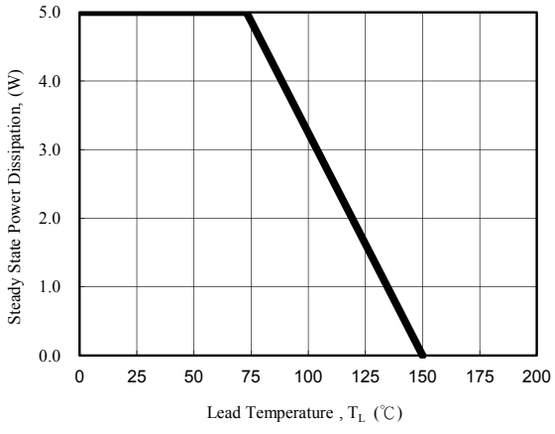



Fig. 3 - Steady State Power Derating Curve

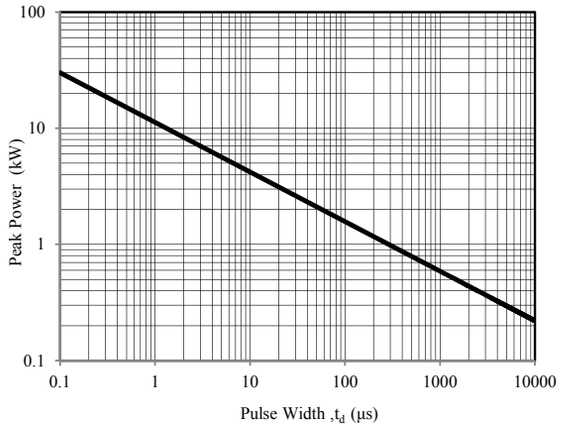



Fig. 4 - Peak Pulse Power Rating Curve

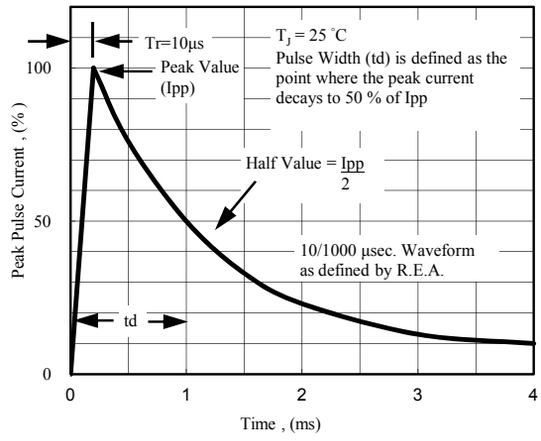



Fig. 5 - Pulse Waveform

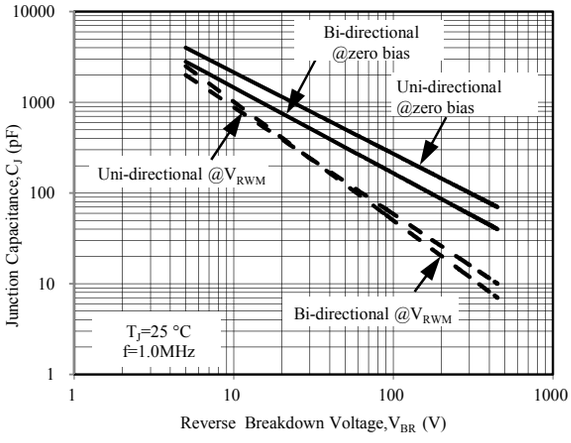



Fig. 6 - Typical Junction Capacitance

## Electrical Characteristics($T_A$=25℃ unless otherwise noted)

| Part Number (Uni) | Part Number (Bi) | Device Marking Code | | Breakdown Voltage $V_{BR}$ @$I_T$ | | | Maximum Reverse Leakage $I_R$ @$V_{RWM}$ (uA) | Working Peak Reverse Voltage $V_{RWM}$ (V) | Maximum Reverse Surge Current $I_{PP}$ (A) | Maximum Clamping Voltage $V_C$ @$I_{PP}$ (V) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Uni | Bi | Min (V) | Max (V) | $I_T$ (mA) | | | | |
| TV06B5V0J-G | TV06B5V0JB-G | KE | AE | 6.40 | 7.00 | 10 | 800 | 5.0 | 65.22 | 9.2 |
| TV06B6V0J-G | TV06B6V0JB-G | KG | AG | 6.67 | 7.37 | 10 | 800 | 6.0 | 58.25 | 10.3 |
| TV06B6V5J-G | TV06B6V5JB-G | KK | AK | 7.22 | 7.98 | 10 | 500 | 6.5 | 53.57 | 11.2 |
| TV06B7V0J-G | TV06B7V0JB-G | KM | AM | 7.78 | 8.60 | 10 | 200 | 7.0 | 50.00 | 12.0 |
| TV06B7V5J-G | TV06B7V5JB-G | KP | AP | 8.33 | 9.21 | 1 | 100 | 7.5 | 46.51 | 12.9 |
| TV06B8V0J-G | TV06B8V0JB-G | KR | AR | 8.89 | 9.83 | 1 | 50 | 8.0 | 44.12 | 13.6 |
| TV06B8V5J-G | TV06B8V5JB-G | KT | AT | 9.44 | 10.40 | 1 | 10 | 8.5 | 41.67 | 14.4 |
| TV06B9V0J-G | TV06B9V0JB-G | KV | AV | 10.00 | 11.10 | 1 | 5 | 9.0 | 38.96 | 15.4 |
| TV06B100J-G | TV06B100JB-G | KX | AX | 11.10 | 12.30 | 1 | 5 | 10.0 | 35.29 | 17.0 |
| TV06B110J-G | TV06B110JB-G | KZ | AZ | 12.20 | 13.50 | 1 | 1 | 11.0 | 32.97 | 18.2 |
| TV06B120J-G | TV06B120JB-G | LE | BE | 13.30 | 14.70 | 1 | 1 | 12.0 | 30.15 | 19.9 |
| TV06B130J-G | TV06B130JB-G | LG | BG | 14.40 | 15.90 | 1 | 1 | 13.0 | 27.91 | 21.5 |
| TV06B140J-G | TV06B140JB-G | LK | BK | 15.60 | 17.20 | 1 | 1 | 14.0 | 25.86 | 23.2 |
| TV06B150J-G | TV06B150JB-G | LM | BM | 16.70 | 18.50 | 1 | 1 | 15.0 | 24.59 | 24.4 |
| TV06B160J-G | TV06B160JB-G | LP | BP | 17.80 | 19.70 | 1 | 1 | 16.0 | 23.08 | 26.0 |
| TV06B170J-G | TV06B170JB-G | LR | BR | 18.90 | 20.90 | 1 | 1 | 17.0 | 21.74 | 27.6 |
| TV06B180J-G | TV06B180JB-G | LT | BT | 20.00 | 22.10 | 1 | 1 | 18.0 | 20.55 | 29.2 |
| TV06B190J-G | TV06B190JB-G | LB | BB | 21.10 | 23.30 | 1 | 1 | 19.0 | 19.49 | 30.8 |
| TV06B200J-G | TV06B200JB-G | LV | BV | 22.20 | 24.50 | 1 | 1 | 20.0 | 18.52 | 32.4 |
| TV06B220J-G | TV06B220JB-G | LX | BX | 24.40 | 26.90 | 1 | 1 | 22.0 | 16.90 | 35.5 |
| TV06B240J-G | TV06B240JB-G | LZ | BZ | 26.70 | 29.50 | 1 | 1 | 24.0 | 15.42 | 38.9 |
| TV06B260J-G | TV06B260JB-G | ME | CE | 28.90 | 31.90 | 1 | 1 | 26.0 | 14.25 | 42.1 |
| TV06B280J-G | TV06B280JB-G | MG | CG | 31.10 | 34.40 | 1 | 1 | 28.0 | 13.22 | 45.4 |
| TV06B300J-G | TV06B300JB-G | MK | CK | 33.30 | 36.80 | 1 | 1 | 30.0 | 12.40 | 48.4 |
| TV06B330J-G | TV06B330JB-G | MM | CM | 36.70 | 40.60 | 1 | 1 | 33.0 | 11.26 | 53.3 |
| TV06B360J-G | TV06B360JB-G | MP | CP | 40.00 | 44.20 | 1 | 1 | 36.0 | 10.33 | 58.1 |
| TV06B400J-G | TV06B400JB-G | MR | CR | 44.40 | 49.10 | 1 | 1 | 40.0 | 9.30 | 64.5 |
| TV06B430J-G | TV06B430JB-G | MT | CT | 47.80 | 52.80 | 1 | 1 | 43.0 | 8.65 | 69.4 |
| TV06B450J-G | TV06B450JB-G | MV | CV | 50.00 | 55.30 | 1 | 1 | 45.0 | 8.25 | 72.7 |
| TV06B480J-G | TV06B480JB-G | MX | CX | 53.30 | 58.90 | 1 | 1 | 48.0 | 7.75 | 77.4 |
| TV06B510J-G | TV06B510JB-G | MZ | CZ | 56.70 | 62.70 | 1 | 1 | 51.0 | 7.28 | 82.4 |
| TV06B540J-G | TV06B540JB-G | NE | DE | 60.00 | 66.30 | 1 | 1 | 54.0 | 6.89 | 87.1 |
| TV06B580J-G | TV06B580JB-G | NG | DG | 64.40 | 71.20 | 1 | 1 | 58.0 | 6.41 | 93.6 |
| TV06B600J-G | TV06B600JB-G | NK | DK | 66.70 | 73.70 | 1 | 1 | 60.0 | 6.20 | 96.8 |
| TV06B640J-G | TV06B640JB-G | NM | DM | 71.10 | 78.60 | 1 | 1 | 64.0 | 5.83 | 103.0 |
| TV06B700J-G | TV06B700JB-G | NP | DP | 77.80 | 86.00 | 1 | 1 | 70.0 | 5.31 | 113.0 |
| TV06B750J-G | TV06B750JB-G | NR | DR | 83.30 | 92.10 | 1 | 1 | 75.0 | 4.96 | 121.0 |
| TV06B780J-G | TV06B780JB-G | NT | DT | 86.70 | 95.80 | 1 | 1 | 78.0 | 4.76 | 126.0 |
| TV06B800J-G | TV06B800JB-G | NB | DB | 88.80 | 97.60 | 1 | 1 | 80.0 | 4.63 | 129.6 |
| TV06B850J-G | TV06B850JB-G | NV | DV | 94.40 | 104.0 | 1 | 1 | 85.0 | 4.38 | 137.0 |
| TV06B900J-G | TV06B900JB-G | NX | DX | 100.0 | 111.0 | 1 | 1 | 90.0 | 4.11 | 146.0 |
| TV06B101J-G | TV06B101JB-G | NZ | DZ | 111.0 | 123.0 | 1 | 1 | 100.0 | 3.70 | 162.0 |
| TV06B111J-G | TV06B111JB-G | PE | EE | 122.0 | 135.0 | 1 | 1 | 110.0 | 3.39 | 177.0 |
| TV06B121J-G | TV06B121JB-G | PG | EG | 133.0 | 147.0 | 1 | 1 | 120.0 | 3.11 | 193.0 |
| TV06B131J-G | TV06B131JB-G | PK | EK | 144.0 | 159.0 | 1 | 1 | 130.0 | 2.87 | 209.0 |
| TV06B141J-G | TV06B141JB-G | PB | EB | 155.0 | 171.0 | 1 | 1 | 140.0 | 2.65 | 226.8 |
| TV06B151J-G | TV06B151JB-G | PM | EM | 167.0 | 185.0 | 1 | 1 | 150.0 | 2.47 | 243.0 |
| TV06B161J-G | TV06B161JB-G | PP | EP | 178.0 | 197.0 | 1 | 1 | 160.0 | 2.32 | 259.0 |
| TV06B171J-G | TV06B171JB-G | PR | ER | 189.0 | 209.0 | 1 | 1 | 170.0 | 2.18 | 275.0 |
| TV06B181J-G | TV06B181JB-G | PT | ET | 200.0 | 220.0 | 1 | 1 | 180.0 | 2.06 | 291.6 |
| TV06B191J-G | TV06B191JB-G | PV | EV | 211.0 | 232.0 | 1 | 1 | 190.0 | 1.95 | 307.8 |
| TV06B201J-G | TV06B201JB-G | PW | EW | 224.0 | 247.0 | 1 | 1 | 200.0 | 1.85 | 324.0 |
| TV06B221J-G | TV06B221JB-G | PX | EX | 246.0 | 272.0 | 1 | 1 | 220.0 | 1.69 | 356.0 |
| TV06B251J-G | TV06B251JB-G | PZ | EZ | 279.0 | 309.0 | 1 | 1 | 250.0 | 1.48 | 405.0 |
| TV06B301J-G | TV06B301JB-G | QE | FE | 335.0 | 371.0 | 1 | 1 | 300.0 | 1.23 | 486.0 |
| TV06B351J-G | TV06B351JB-G | QG | FG | 391.0 | 432.0 | 1 | 1 | 350.0 | 1.06 | 567.0 |
| TV06B401J-G | TV06B401JB-G | QK | FK | 447.0 | 494.0 | 1 | 1 | 400.0 | 0.93 | 648.0 |
| TV06B441J-G | TV06B441JB-G | QM | FM | 492.0 | 543.0 | 1 | 1 | 440.0 | 0.84 | 713.0 |

**Note:**

1. Suffix 'A ' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C 'or ' CA ' 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