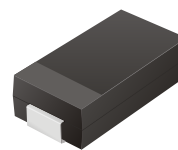


# SMD Transient Voltage Suppressor

## TV06B5V0 Thru TV06B171

Working Peak Reverse Voltage: 5.0 - 170 Volts  
Power Dissipation: 600 Watts

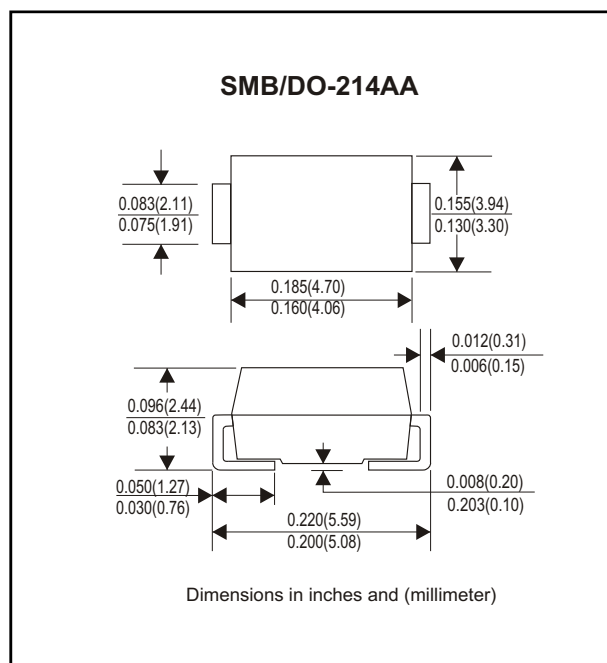


### Features

- Ideal for surface mount applications
- Easy pick and place
- Plastic package has Underwriters Lab. flammability classification 94V-0
- Typical IR less than 1uA above 10V
- Fast reponse time: typically less 1nS for uni-direction, less than 5nS for bi-directiona, from 0 V to BV min.

### Mechanical data

- Case: JEDEC DO-214AA molded plastic
- Terminals: solderable per MIL-STD-750, method 2026
- Polarity: Cathode band denoted
- Mounting position: Any
- Approx. Weight:0.093 gram



### 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%

| Characteristics                                                                                                  | Symbol             | Value       | Units |
|------------------------------------------------------------------------------------------------------------------|--------------------|-------------|-------|
| Peak Power Dissipation on 10/1000uS Waveform (Note 1, Fig. 1)                                                    | P <sub>PPM</sub>   | 600         | Watts |
| Peak Pulse Current of on 10/1000uS Waveform (Note 1, Fig. 3)                                                     | I <sub>PPM</sub>   | See Table 1 | A     |
| Steady State PowerDissipation at T <sub>L</sub> =75° C (Note2)                                                   | P <sub>M(AV)</sub> | 5.0         | Watts |
| Peak Forard Surge Current, 8.3mS Single Half Sine-Wave Superimposed on Rated Load, Uni-Directional Only (Note 3) | I <sub>FSM</sub>   | 100         | A     |
| Maxinum Instantaneous Forward Voltage at 35.0A for Uni-Directional only (Note 3 & 4)                             | V <sub>F</sub>     | 3.5/5.0     | Volts |
| Operation Junction Temperature Range                                                                             | T <sub>j</sub>     | -55 to +150 | °C    |
| Storage Temperature Range                                                                                        | T <sub>STG</sub>   | -55 to +150 | °C    |

Note: 1. Non-Repetitive Current Pulse, per Fig. 3 and Derated above TA=25° C, per Fig. 2.  
2. Mounted on 5.0x5.0mm<sup>2</sup> Copper Pad to Each Terminal.  
3. Measured on 8.3 mS Single Half Sine-Wave or Equivalent Square Wave, Duty Cycle=4 Pulse per Minute Maximum.  
4. V<sub>F</sub>=3.5V on TV06B5V0 thru TV06B900 Devices and V<sub>F</sub>=5.0V on TV06B101 thru TV06B171.

## Rating and Characteristic Curves (TV06B5V0 Thru TV06B171)

Fig. 1 - Reverse Characteristics

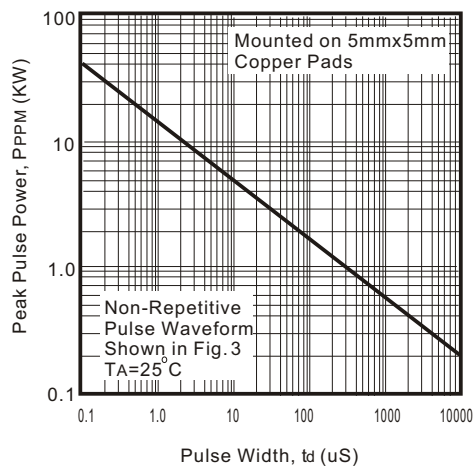


Fig. 2 - Pulse Derating Curve

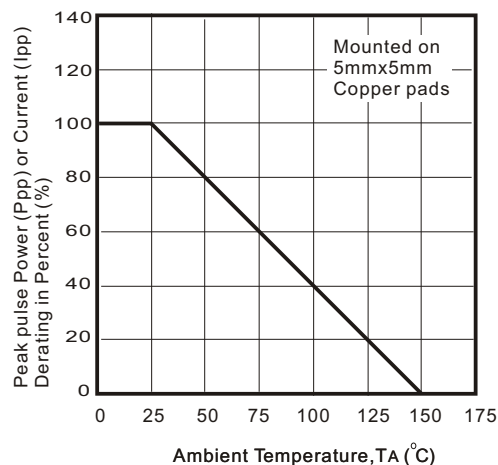


Fig. 3 - Pulse Waveform

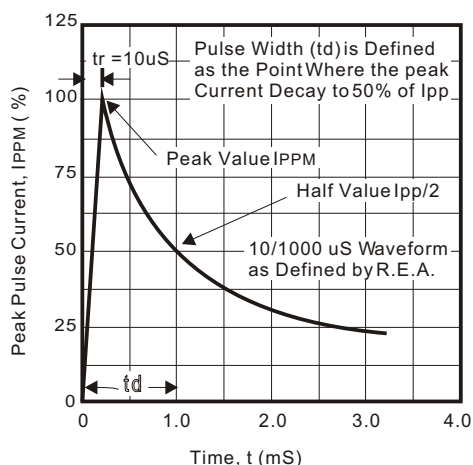


Fig. 4 - Typical Junction Capacitance for Uni-Directional Devices

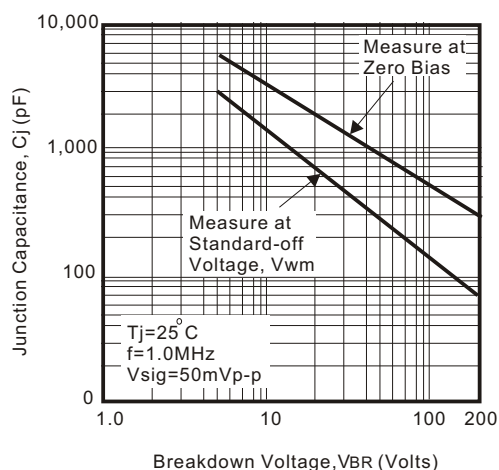


Fig. 5 - Typical Junction Capacitance for Bi-Directional Devices

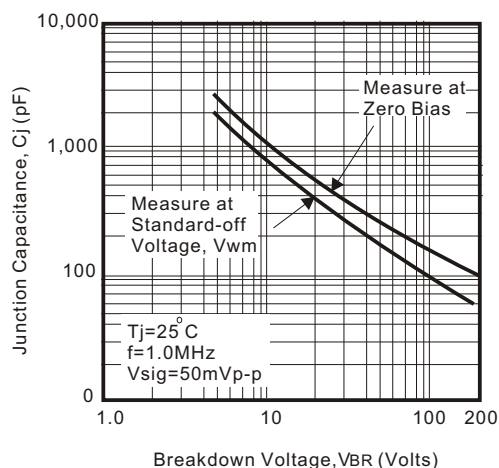
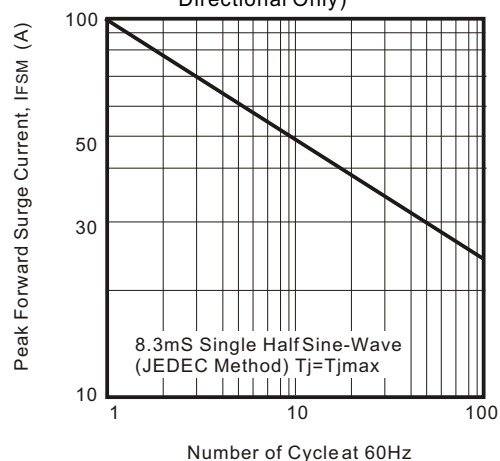


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current (Uni-Directional Only)



**Table 1. Specification**

| PartNo.      | Absolute Maximum Rating (Ta=25°C) |         |         |      |            | Electrical Characteristics (Ta=25°C) |        |          |              |    |
|--------------|-----------------------------------|---------|---------|------|------------|--------------------------------------|--------|----------|--------------|----|
|              | VRWM                              | VBR Min | VBR Max | IT   | IFSM       | Max Vc                               |        | IR @VRWM | Marking Code |    |
|              | (V)                               | (V)     | (V)     | (mA) | (A) @8.3ms | (V)                                  | Ipp(A) | (uA)     | UNI          | BI |
| TV06B5V0K(B) | 5.00                              | 6.40    | 7.55    | 10   | 100        | 9.6                                  | 62.5   | 800      | KD           | AD |
| TV06B5V0J(B) | 5.00                              | 6.40    | 7.25    | 10   | 100        | 9.2                                  | 65.2   | 800      | KE           | AE |
| TV06B6V0K(B) | 6.00                              | 6.67    | 8.45    | 10   | 100        | 11.4                                 | 52.6   | 800      | KF           | AF |
| TV06B6V0J(B) | 6.00                              | 6.67    | 7.67    | 10   | 100        | 10.3                                 | 58.3   | 800      | KG           | AG |
| TV06B6V5K(B) | 6.50                              | 7.22    | 9.14    | 10   | 100        | 12.3                                 | 48.7   | 500      | KH           | AH |
| TV06B6V5J(B) | 6.50                              | 7.22    | 8.30    | 10   | 100        | 11.2                                 | 53.6   | 500      | KK           | AK |
| TV06B7V0K(B) | 7.00                              | 7.78    | 9.86    | 1    | 100        | 13.3                                 | 45.1   | 200      | KL           | AL |
| TV06B7V0J(B) | 7.00                              | 7.78    | 8.95    | 1    | 100        | 12.0                                 | 50.0   | 200      | KM           | AM |
| TV06B7V5K(B) | 7.50                              | 8.33    | 10.67   | 1    | 100        | 14.3                                 | 42.0   | 100      | KN           | AN |
| TV06B7V5J(B) | 7.50                              | 8.33    | 9.58    | 1    | 100        | 12.9                                 | 46.5   | 100      | KP           | AP |
| TV06B8V0K(B) | 8.00                              | 8.89    | 11.30   | 1    | 100        | 15.0                                 | 40.0   | 50       | KQ           | AQ |
| TV06B8V0J(B) | 8.00                              | 8.89    | 10.23   | 1    | 100        | 13.6                                 | 44.1   | 50       | KR           | AR |
| TV06B8V5K(B) | 8.50                              | 9.44    | 11.9    | 1    | 100        | 15.9                                 | 37.7   | 10       | KS           | AS |
| TV06B8V5J(B) | 8.50                              | 9.44    | 10.8    | 1    | 100        | 14.4                                 | 41.7   | 10       | KT           | AT |
| TV06B9V0K(B) | 9.00                              | 10.0    | 12.6    | 1    | 100        | 16.9                                 | 35.5   | 5        | KU           | AU |
| TV06B9V0J(B) | 9.00                              | 10.0    | 11.5    | 1    | 100        | 15.4                                 | 39.0   | 5        | KV           | AV |
| TV06B100K(B) | 10.00                             | 11.1    | 14.1    | 1    | 100        | 18.8                                 | 31.9   | 5        | KW           | AW |
| TV06B100J(B) | 10.00                             | 11.1    | 12.8    | 1    | 100        | 17.0                                 | 35.3   | 5        | KX           | AX |
| TV06B110K(B) | 11.00                             | 12.2    | 15.4    | 1    | 100        | 20.1                                 | 29.9   | 5        | KY           | AY |
| TV06B110J(B) | 11.00                             | 12.2    | 14.0    | 1    | 100        | 18.2                                 | 33.0   | 5        | KZ           | AZ |
| TV06B120K(B) | 12.00                             | 13.3    | 16.9    | 1    | 100        | 22.0                                 | 27.3   | 5        | LD           | BD |
| TV06B120J(B) | 12.00                             | 13.3    | 15.3    | 1    | 100        | 19.9                                 | 30.2   | 5        | LE           | BE |
| TV06B130K(B) | 13.00                             | 14.4    | 18.2    | 1    | 100        | 23.8                                 | 25.2   | 5        | LF           | BF |
| TV06B130J(B) | 13.00                             | 14.4    | 16.5    | 1    | 100        | 21.5                                 | 27.9   | 5        | LG           | BG |
| TV06B140K(B) | 14.00                             | 15.6    | 19.8    | 1    | 100        | 25.8                                 | 23.3   | 5        | LH           | BH |
| TV06B140J(B) | 14.00                             | 15.6    | 17.9    | 1    | 100        | 23.2                                 | 25.8   | 5        | LK           | BK |
| TV06B150K(B) | 15.00                             | 16.7    | 21.1    | 1    | 100        | 26.9                                 | 22.3   | 5        | LL           | BL |
| TV06B150J(B) | 15.00                             | 16.7    | 19.2    | 1    | 100        | 24.4                                 | 24.0   | 5        | LM           | BM |
| TV06B160K(B) | 16.00                             | 17.8    | 22.6    | 1    | 100        | 28.8                                 | 20.8   | 5        | LN           | BN |
| TV06B160J(B) | 16.00                             | 17.8    | 20.5    | 1    | 100        | 26.0                                 | 23.1   | 5        | LP           | BP |
| TV06B170K(B) | 17.00                             | 18.9    | 23.9    | 1    | 100        | 30.5                                 | 19.7   | 5        | LQ           | BQ |
| TV06B170J(B) | 17.00                             | 18.9    | 21.7    | 1    | 100        | 27.6                                 | 21.7   | 5        | LR           | BR |
| TV06B180K(B) | 18.00                             | 20.0    | 25.3    | 1    | 100        | 32.2                                 | 18.6   | 5        | LS           | BS |
| TV06B180J(B) | 18.00                             | 20.0    | 23.3    | 1    | 100        | 29.2                                 | 20.5   | 5        | LT           | BT |
| TV06B200K(B) | 20.00                             | 22.2    | 28.1    | 1    | 100        | 35.8                                 | 16.4   | 5        | LU           | BU |
| TV06B200J(B) | 20.00                             | 22.2    | 25.5    | 1    | 100        | 32.4                                 | 18.5   | 5        | LV           | BV |
| TV06B220K(B) | 22.00                             | 24.4    | 30.9    | 1    | 100        | 39.4                                 | 15.2   | 5        | LW           | BW |
| TV06B220J(B) | 22.00                             | 24.4    | 28.0    | 1    | 100        | 35.5                                 | 16.9   | 5        | LX           | BX |
| TV06B240K(B) | 24.00                             | 26.7    | 33.8    | 1    | 100        | 43.0                                 | 14.0   | 5        | LY           | BY |
| TV06B240J(B) | 24.00                             | 26.7    | 30.7    | 1    | 100        | 38.9                                 | 15.4   | 5        | LZ           | BZ |
| TV06B260K(B) | 26.00                             | 28.9    | 36.6    | 1    | 100        | 46.6                                 | 12.4   | 5        | MD           | CD |
| TV06B260J(B) | 26.00                             | 28.9    | 33.2    | 1    | 100        | 42.1                                 | 14.2   | 5        | ME           | CE |
| TV06B280K(B) | 28.00                             | 31.1    | 39.4    | 1    | 100        | 50.0                                 | 12.0   | 5        | MF           | CF |
| TV06B280J(B) | 28.00                             | 31.1    | 35.8    | 1    | 100        | 45.4                                 | 13.2   | 5        | MG           | CG |
| TV06B300K(B) | 30.00                             | 33.3    | 42.2    | 1    | 100        | 53.5                                 | 11.2   | 5        | MH           | CH |
| TV06B300J(B) | 30.00                             | 33.3    | 38.3    | 1    | 100        | 48.4                                 | 12.4   | 5        | MK           | CK |
| TV06B330K(B) | 33.00                             | 36.7    | 46.5    | 1    | 100        | 59.0                                 | 10.2   | 5        | ML           | CL |
| TV06B330J(B) | 33.00                             | 36.7    | 42.2    | 1    | 100        | 53.3                                 | 11.3   | 5        | MM           | CM |
| TV06B360K(B) | 36.00                             | 40.0    | 50.7    | 1    | 100        | 64.3                                 | 9.3    | 5        | MN           | CN |
| TV06B360J(B) | 36.00                             | 40.0    | 46.0    | 1    | 100        | 58.1                                 | 10.3   | 5        | MP           | CP |
| TV06B400K(B) | 40.00                             | 44.4    | 56.3    | 1    | 100        | 71.4                                 | 8.4    | 5        | MQ           | CQ |
| TV06B400J(B) | 40.00                             | 44.4    | 51.1    | 1    | 100        | 64.5                                 | 9.3    | 5        | MR           | CR |
| TV06B430K(B) | 43.00                             | 47.8    | 60.5    | 1    | 100        | 76.7                                 | 7.8    | 5        | MS           | CS |
| TV06B430J(B) | 43.00                             | 47.8    | 54.9    | 1    | 100        | 69.4                                 | 8.6    | 5        | MT           | CT |
| TV06B450K(B) | 45.00                             | 50.0    | 63.3    | 1    | 100        | 80.3                                 | 7.5    | 5        | MU           | CU |
| TV06B450J(B) | 45.00                             | 50.0    | 57.5    | 1    | 100        | 72.7                                 | 8.3    | 5        | MV           | CV |

| Part No.     | Absolute Maximum Rating (Ta=25°C) |         |         |      |            | Electrical Characteristics (Ta=25°C) |        |          |              |    |
|--------------|-----------------------------------|---------|---------|------|------------|--------------------------------------|--------|----------|--------------|----|
|              | VRWM                              | VBR Min | VBR Max | IT   | IFSM       | Max Vc                               |        | IR @VRWM | Marking Code |    |
|              | (V)                               | (V)     | (V)     | (mA) | (A) @8.3ms | (V)                                  | Ipp(A) | (uA)     | UNI          | BI |
| TV06B480K(B) | 48.00                             | 53.3    | 67.5    | 1    | 100        | 85.5                                 | 7.0    | 5        | MW           | CW |
| TV06B480J(B) | 48.00                             | 53.3    | 61.3    | 1    | 100        | 77.4                                 | 7.7    | 5        | MX           | CX |
| TV06B510K(B) | 51.00                             | 56.7    | 71.8    | 1    | 100        | 91.1                                 | 6.6    | 5        | MY           | CY |
| TV06B510J(B) | 51.00                             | 56.7    | 65.2    | 1    | 100        | 82.4                                 | 7.3    | 5        | MZ           | CZ |
| TV06B540K(B) | 54.00                             | 60.0    | 76.0    | 1    | 100        | 96.3                                 | 6.2    | 5        | ND           | DD |
| TV06B540J(B) | 54.00                             | 60.0    | 69.0    | 1    | 100        | 87.1                                 | 6.9    | 5        | NE           | DE |
| TV06B580K(B) | 58.00                             | 64.4    | 81.6    | 1    | 100        | 103.0                                | 5.8    | 5        | NF           | DF |
| TV06B580J(B) | 58.00                             | 64.4    | 74.1    | 1    | 100        | 93.6                                 | 6.4    | 5        | NG           | DG |
| TV06B600K(B) | 60.00                             | 66.7    | 84.5    | 1    | 100        | 107.0                                | 5.6    | 5        | NH           | DH |
| TV06B600J(B) | 60.00                             | 66.7    | 76.7    | 1    | 100        | 96.8                                 | 6.2    | 5        | NK           | DK |
| TV06B640K(B) | 64.00                             | 71.1    | 90.1    | 1    | 100        | 114.0                                | 5.3    | 5        | NL           | DL |
| TV06B640J(B) | 64.00                             | 71.1    | 81.8    | 1    | 100        | 103.0                                | 5.8    | 5        | NM           | DM |
| TV06B700K(B) | 70.00                             | 77.8    | 98.6    | 1    | 100        | 125.0                                | 4.8    | 5        | NN           | DN |
| TV06B700J(B) | 70.00                             | 77.8    | 89.5    | 1    | 100        | 113.0                                | 5.3    | 5        | NP           | DP |
| TV06B750K(B) | 75.00                             | 83.3    | 105.7   | 1    | 100        | 134.0                                | 4.5    | 5        | NQ           | DQ |
| TV06B750J(B) | 75.00                             | 83.3    | 95.8    | 1    | 100        | 121.0                                | 4.9    | 5        | NR           | DR |
| TV06B780K(B) | 78.00                             | 86.7    | 109.8   | 1    | 100        | 139.0                                | 4.3    | 5        | NS           | DS |
| TV06B780J(B) | 78.00                             | 86.7    | 99.7    | 1    | 100        | 126.0                                | 4.7    | 5        | NT           | DT |
| TV06B850K(B) | 85.00                             | 94.4    | 119.2   | 1    | 100        | 151.0                                | 3.9    | 5        | NU           | DU |
| TV06B850J(B) | 85.00                             | 94.4    | 108.2   | 1    | 100        | 137.0                                | 4.4    | 5        | NV           | DV |
| TV06B900K(B) | 90.00                             | 100.0   | 126.5   | 1    | 100        | 160.0                                | 3.8    | 5        | NW           | DW |
| TV06B900J(B) | 90.00                             | 100.0   | 115.5   | 1    | 100        | 146.0                                | 4.1    | 5        | NX           | DX |
| TV06B101K(B) | 100.00                            | 111.0   | 141.0   | 1    | 100        | 179.0                                | 3.4    | 5        | NY           | DY |
| TV06B101J(B) | 100.00                            | 111.0   | 128.0   | 1    | 100        | 162.0                                | 3.7    | 5        | NZ           | DZ |
| TV06B111K(B) | 110.00                            | 122.0   | 154.5   | 1    | 100        | 196.0                                | 3.0    | 5        | PD           | ED |
| TV06B111J(B) | 110.00                            | 122.0   | 140.5   | 1    | 100        | 177.0                                | 3.4    | 5        | PE           | EE |
| TV06B121K(B) | 120.00                            | 133.0   | 169.0   | 1    | 100        | 214.0                                | 2.8    | 5        | PF           | EF |
| TV06B121J(B) | 120.00                            | 133.0   | 153.0   | 1    | 100        | 193.0                                | 3.1    | 5        | PG           | EG |
| TV06B131K(B) | 130.00                            | 144.0   | 182.5   | 1    | 100        | 231.0                                | 2.6    | 5        | PH           | EH |
| TV06B131J(B) | 130.00                            | 144.0   | 165.5   | 1    | 100        | 209.0                                | 2.9    | 5        | PK           | EK |
| TV06B151K(B) | 150.00                            | 167.0   | 211.5   | 1    | 100        | 268.0                                | 2.2    | 5        | PL           | EL |
| TV06B151J(B) | 150.00                            | 167.0   | 192.5   | 1    | 100        | 243.0                                | 2.5    | 5        | PM           | EM |
| TV06B161K(B) | 160.00                            | 178.0   | 226.0   | 1    | 100        | 287.0                                | 2.1    | 5        | PN           | EN |
| TV06B161J(B) | 160.00                            | 178.0   | 205.0   | 1    | 100        | 259.0                                | 2.3    | 5        | PP           | EP |
| TV06B171K(B) | 170.00                            | 189.0   | 239.5   | 1    | 100        | 304.0                                | 2.0    | 5        | PQ           | EQ |
| TV06B171J(B) | 170.00                            | 189.0   | 217.5   | 1    | 100        | 275.0                                | 2.2    | 5        | PR           | ER |

Note:

- 1) Suffix K denotes 10% tolerance devices, suffix J denotes 5% tolerance devices.
- 2) Suffix B after part number to specify bi-directional devices.
- 3) For bi-directional devices having VR of 10 volts and under, the IR limit is double.