



SMB10J5.0A THRU SMB10J440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

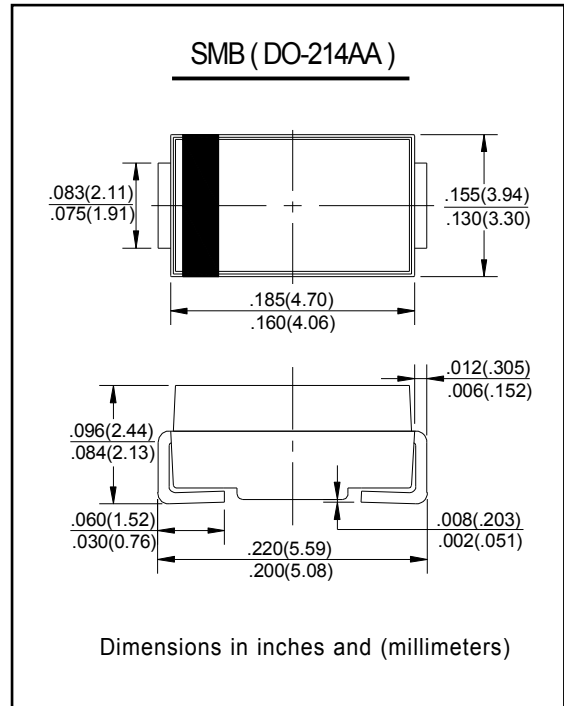
Stand - Off Voltage - 5.0 to 440 Volts Peak Pulse Power - 1000 Watt

FEATURES

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- Typical IR less than 1 μ A above 10V
- Fast Response Time : typically less than 1.0ns from 0v to VBR

MECHANICAL DATA

- Case: JEDEC SMB(DO-214AA), Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band Except Bi-Directional
- Marking: Device Code
- Weight: 0.093 grams (approx.)



Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

| Parameter | Symbols | Value | Unit |
|--|----------------|----------------|--------------------|
| Peak power dissipation with a 10/1000 us waveform ⁽¹⁾ | P_{PP} | 1000 | W |
| Peak pulse current with a 10/1000 us waveform ⁽¹⁾ | I_{PP} | See Next Table | A |
| Power dissipation on infinite heatsink at $T_L = 75^{\circ}\text{C}$ | P_D | 5.0 | W |
| Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾ | I_{FSM} | 100 | A |
| Maximum instantaneous forward voltage at 50 A for unidirectional only ⁽³⁾ | V_F | 3.5 / 6.5 | V |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | $^{\circ}\text{C}$ |

Note:

1)Non-repetitive current pulse per Fig.5 and derated above $T_A= 25^{\circ}\text{C}$ 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) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for devices of $V_{BR} > 201\text{V}$



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| Part Number | | Device Marking Code | | Reverse Stand-off Voltage | Breakdown Voltage $V_{BR} @ I_T$ | | Test Current | Max. Clamping Voltage @ I_{PP} | Max. Peak Pulse Current | Max. Reverse Leakage @ V_{RWM} |
|-------------|-------------|---------------------|-----|---------------------------|----------------------------------|---------|--------------|----------------------------------|-------------------------|----------------------------------|
| UNI-POLAR | BI-POLAR | UNI | BI | $V_{RWM}(V)$ | Min.(V) | Max.(V) | $I_T(mA)$ | $V_{C MAX.}(V)$ | $I_{PP}(A)$ | $I_R(\mu A)$ |
| SMB10J5.0A | SMB10J5.0CA | KKE | KAE | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 65.3 | 800 |
| SMB10J6.0A | SMB10J6.0CA | KKG | KAG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 58.3 | 800 |
| SMB10J6.5A | SMB10J6.5CA | KKK | KAK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 53.6 | 500 |
| SMB10J7.0A | SMB10J7.0CA | KKM | KAM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 50.0 | 200 |
| SMB10J7.5A | SMB10J7.5CA | KKP | KAP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 46.6 | 100 |
| SMB10J8.0A | SMB10J8.0CA | KKR | KAR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 44.2 | 50 |
| SMB10J8.5A | SMB10J8.5CA | KKT | KAT | 8.5 | 9.44 | 10.40 | 1 | 14.4 | 41.7 | 20 |
| SMB10J9.0A | SMB10J9.0CA | KKV | KAV | 9.0 | 10.00 | 11.10 | 1 | 15.4 | 39.0 | 10 |
| SMB10J10A | SMB10J10CA | KKX | KAX | 10.0 | 11.10 | 12.30 | 1 | 17.0 | 35.3 | 5 |
| SMB10J11A | SMB10J11CA | KKZ | KAZ | 11.0 | 12.20 | 13.50 | 1 | 18.2 | 33.0 | 1 |
| SMB10J12A | SMB10J12CA | KLE | KBE | 12.0 | 13.30 | 14.70 | 1 | 19.9 | 30.2 | 1 |
| SMB10J13A | SMB10J13CA | KLG | KBG | 13.0 | 14.40 | 15.90 | 1 | 21.5 | 28.0 | 1 |
| SMB10J14A | SMB10J14CA | KLK | KBK | 14.0 | 15.60 | 17.20 | 1 | 23.2 | 25.9 | 1 |
| SMB10J15A | SMB10J15CA | KLM | KBM | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 24.6 | 1 |
| SMB10J16A | SMB10J16CA | KLP | KBP | 16.0 | 17.80 | 19.70 | 1 | 26.0 | 23.1 | 1 |
| SMB10J17A | SMB10J17CA | KLR | KBR | 17.0 | 18.90 | 20.90 | 1 | 27.6 | 21.8 | 1 |
| SMB10J18A | SMB10J18CA | KLT | KBT | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 20.6 | 1 |
| SMB10J20A | SMB10J20CA | KLV | KBV | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 18.6 | 1 |
| SMB10J22A | SMB10J22CA | KLX | KBX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 16.9 | 1 |
| SMB10J24A | SMB10J24CA | KLZ | KBZ | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 15.5 | 1 |
| SMB10J26A | SMB10J26CA | KME | KCE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 14.3 | 1 |
| SMB10J28A | SMB10J28CA | KMG | KCG | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 13.3 | 1 |
| SMB10J30A | SMB10J30CA | KMK | KCK | 30.0 | 33.50 | 36.80 | 1 | 48.4 | 12.4 | 1 |
| SMB10J33A | SMB10J33CA | KMM | KCM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 11.3 | 1 |
| SMB10J36A | SMB10J36CA | KMP | KCP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 10.4 | 1 |
| SMB10J40A | SMB10J40CA | KMR | KCR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 9.3 | 1 |
| SMB10J43A | SMB10J43CA | KMT | KCT | 43.0 | 47.80 | 52.80 | 1 | 69.4 | 8.7 | 1 |
| SMB10J45A | SMB10J45CA | KMV | KCV | 45.0 | 50.00 | 55.30 | 1 | 72.7 | 8.3 | 1 |
| SMB10J48A | SMB10J48CA | KMX | KCX | 48.0 | 53.30 | 58.90 | 1 | 77.4 | 7.8 | 1 |
| SMB10J51A | SMB10J51CA | KMZ | KCZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 7.3 | 1 |
| SMB10J54A | SMB10J54CA | KNE | KDE | 54.0 | 60.00 | 66.30 | 1 | 87.1 | 6.9 | 1 |
| SMB10J58A | SMB10J58CA | KNG | KDG | 58.0 | 64.40 | 71.20 | 1 | 93.6 | 6.5 | 1 |
| SMB10J60A | SMB10J60CA | KNK | KDK | 60.0 | 66.70 | 73.70 | 1 | 96.8 | 6.2 | 1 |
| SMB10J64A | SMB10J64CA | KNM | KDM | 64.0 | 71.10 | 78.60 | 1 | 103.0 | 5.9 | 1 |
| SMB10J70A | SMB10J70CA | KNP | KDP | 70.0 | 77.80 | 86.00 | 1 | 113.0 | 5.3 | 1 |
| SMB10J75A | SMB10J75CA | KNR | KDR | 75.0 | 83.30 | 92.10 | 1 | 121.0 | 5.0 | 1 |
| SMB10J78A | SMB10J78CA | KNT | KDT | 78.0 | 86.70 | 95.80 | 1 | 126.0 | 4.8 | 1 |
| SMB10J85A | SMB10J85CA | KNV | KDV | 85.0 | 94.4 | 104.0 | 1 | 137.0 | 4.4 | 1 |
| SMB10J90A | SMB10J90CA | KNX | KDX | 90.0 | 100.0 | 111.0 | 1 | 146.0 | 4.1 | 1 |
| SMB10J100A | SMB10J100CA | KNZ | KDZ | 100.0 | 111.0 | 123.0 | 1 | 162.0 | 3.7 | 1 |
| SMB10J110A | SMB10J110CA | KPE | KEE | 110.0 | 122.0 | 135.0 | 1 | 177.0 | 3.4 | 1 |
| SMB10J120A | SMB10J120CA | KPG | KEG | 120.0 | 133.0 | 147.0 | 1 | 193.0 | 3.1 | 1 |
| SMB10J130A | SMB10J130CA | KPK | KEK | 130.0 | 144.0 | 159.0 | 1 | 209.0 | 2.9 | 1 |
| SMB10J150A | SMB10J150CA | KPM | KEM | 150.0 | 167.0 | 185.0 | 1 | 243.0 | 2.5 | 1 |
| SMB10J160A | SMB10J160CA | KPP | KEP | 160.0 | 178.0 | 197.0 | 1 | 259.0 | 2.3 | 1 |
| SMB10J170A | SMB10J170CA | KPR | KER | 170.0 | 189.0 | 209.0 | 1 | 275.0 | 2.2 | 1 |
| SMB10J180A | SMB10J180CA | KPT | KET | 180.0 | 201.0 | 222.0 | 1 | 292.0 | 2.1 | 1 |
| SMB10J190A | SMB10J190CA | KPA | KEC | 190.0 | 209.0 | 243.0 | 1 | 308.0 | 2.0 | 1 |
| SMB10J200A | SMB10J200CA | KPV | KEV | 200.0 | 224.0 | 247.0 | 1 | 324.0 | 1.9 | 1 |
| SMB10J210A | SMB10J210CA | KPB | KED | 210.0 | 231.0 | 268.0 | 1 | 340.0 | 1.8 | 1 |
| SMB10J220A | SMB10J220CA | KPX | KEX | 220.0 | 246.0 | 272.0 | 1 | 356.0 | 1.7 | 1 |
| SMB10J250A | SMB10J250CA | KPZ | KEZ | 250.0 | 279.0 | 309.0 | 1 | 405.0 | 1.5 | 1 |
| SMB10J300A | SMB10J300CA | KQE | KFE | 300.0 | 335.0 | 371.0 | 1 | 486.0 | 1.3 | 1 |
| SMB10J350A | SMB10J350CA | KQG | KFG | 350.0 | 391.0 | 432.0 | 1 | 567.0 | 1.1 | 1 |
| SMB10J400A | SMB10J400CA | KQK | KFK | 400.0 | 447.0 | 494.0 | 1 | 648.0 | 0.9 | 1 |
| SMB10J440A | SMB10J440CA | KQM | KFM | 440.0 | 492.0 | 543.0 | 1 | 713.0 | 0.9 | 1 |



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RATINGS AND CHARACTERISTIC CURVES

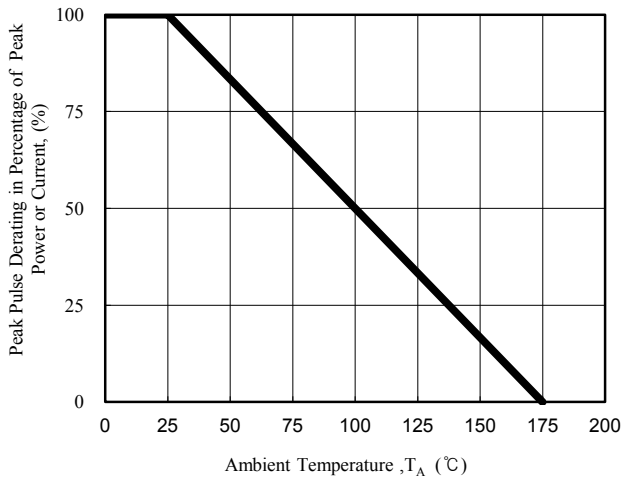


Fig. 1 - Pulse Derating Curve

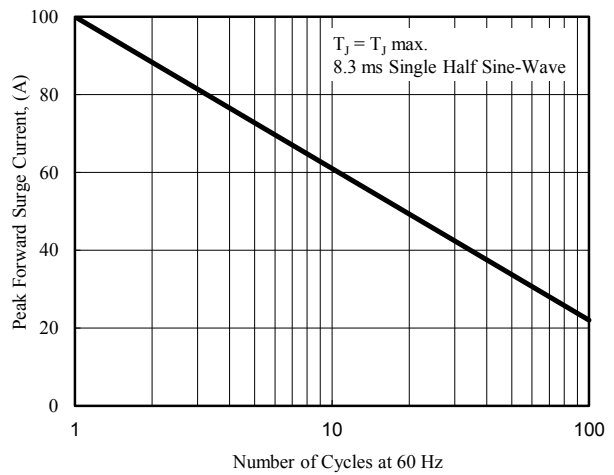


Fig. 2 - Maximum Non-Repetitive Surge Current

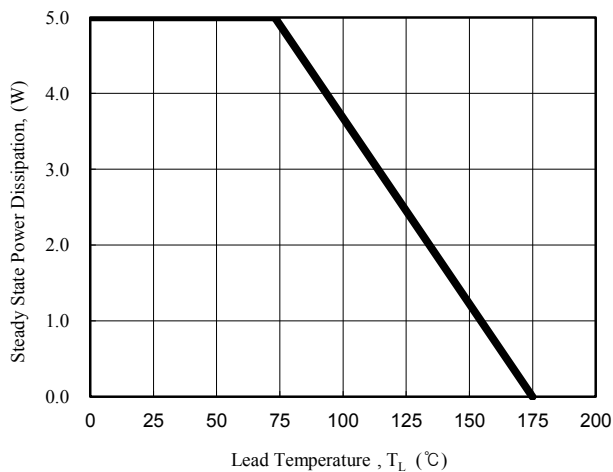


Fig. 3 - Steady State Power Derating Curve

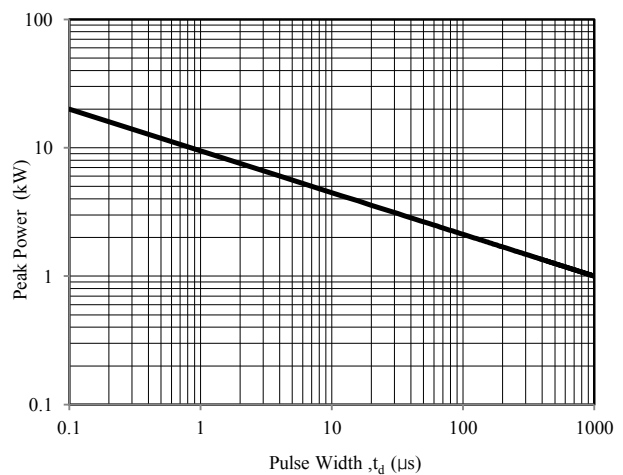


Fig. 4 - Peak Pulse Power Rating Curve

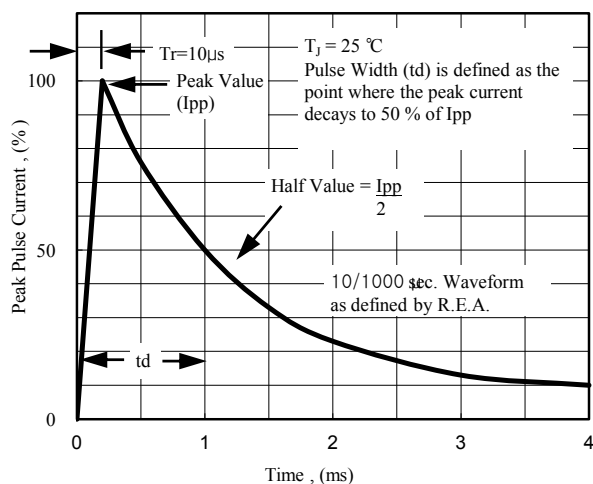


Fig. 5 - Pulse Waveform

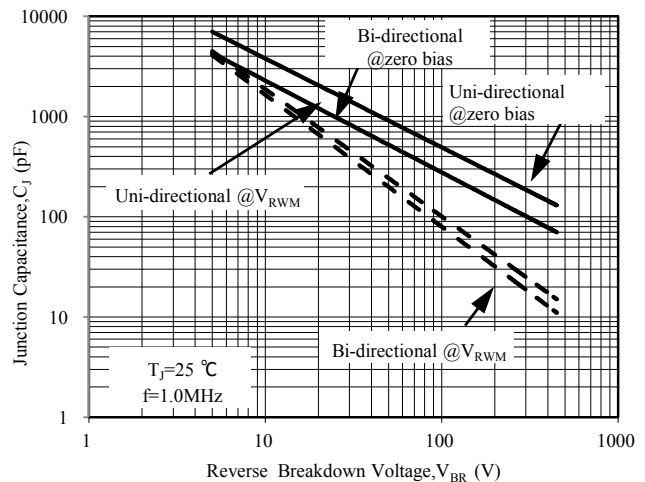


Fig. 6 - Typical Junction Capacitance