

SMBG Plastic-Encapsulate Diodes

CJSMBJ SERIES Transient Voltage Suppressor Diodes

Features

- P_{PP} 600W
- V_{RWM} 10V- 100V
- Glass passivated chip

Applications

- Clamping Voltage



Limiting Values (Absolute Maximum Rating)

| Item | Symbol | Unit | Conditions | Max |
|--|----------------|------------------|--|----------------|
| Peak pulse power dissipation | P_{PPM} | W | with a 10/1000us waveform | 600 |
| Peak pulse current(note 1) | I_{PPM} | A | with a 10/1000us waveform | See Next Table |
| Power dissipation | P_D | W | On infinite heat sink at $T_L=50^\circ\text{C}$ | 5.0 |
| Peak forward surge current | I_{FSM} | A | 8.3 ms single half sine-wave uni-directional only (note 2) | 100 |
| Operating junction and storage temperature range | T_J, T_{STG} | $^\circ\text{C}$ | | -55 to +150 |

Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

| Item | Symbol | Unit | Conditions | Max |
|---------------------------------------|-----------------|---------------------------|--|-----|
| Maximum instantaneous forward Voltage | V_F | V | at 50A for uni-directional only | 3.5 |
| Thermal resistance | $R_{\theta JL}$ | $^\circ\text{C}/\text{W}$ | junction to lead $T_L=50^\circ\text{C}$ | 20 |
| | $R_{\theta JA}$ | $^\circ\text{C}/\text{W}$ | junction to ambient $T_A=25^\circ\text{C}$ | 100 |

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig.2
- (2) 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number | | Device Marking Code | | Breakdown Voltage VBR@IT | | Test Current | Max Reverse Leakage @VRWM IR(μA) | | Reverse Standoff Voltage | Max Peak Pulse Current ⁽¹⁾ | Max Clamping Voltage @Ipp |
|-------------|-------------|---------------------------|--------------|--------------------------|---------|--------------|---|----|--------------------------|---------------------------------------|---------------------------|
| UNI | BI | UNI | BI | Min.(V) | Max.(V) | IT(mA) | UNI | BI | V _{RWM} (V) | IPP(A) | V _c (V) |
| CJSMBJ10A | CJSMBJ10CA | B10A XX ⁽²⁾ | B10CA XX | 11.14 | 12.29 | 1 | 5 | 5 | 10 | 35.3 | 16.8 |
| CJSMBJ11A | CJSMBJ11CA | B11A XX | B11CA XX | 12.25 | 13.49 | 1 | 5 | 5 | 11 | 33 | 18 |
| CJSMBJ12A | CJSMBJ12CA | B12A XX | B12CA XX | 13.35 | 14.69 | 1 | 5 | 5 | 12 | 30.2 | 19.7 |
| CJSMBJ13A | CJSMBJ13CA | B13A XX | B13CA XX | 14.46 | 15.89 | 1 | 5 | 5 | 13 | 28 | 21.3 |
| CJSMBJ14A | CJSMBJ14CA | B14A XX | B14CA XX | 15.66 | 17.19 | 1 | 5 | 5 | 14 | 25.9 | 23 |
| CJSMBJ15A | CJSMBJ15CA | B15A XX | B15CA XX | 16.77 | 18.49 | 1 | 5 | 5 | 15 | 24.6 | 24.2 |
| CJSMBJ16A | CJSMBJ16CA | B16A XX | B16CA XX | 17.87 | 19.69 | 1 | 5 | 5 | 16 | 23.1 | 25.7 |
| CJSMBJ17A | CJSMBJ17CA | B17A XX | B17CA XX | 18.98 | 20.89 | 1 | 5 | 5 | 17 | 21.8 | 27.3 |
| CJSMBJ18A | CJSMBJ18CA | B18A XX | B18CA XX | 20.08 | 22.08 | 1 | 5 | 5 | 18 | 20.6 | 28.9 |
| CJSMBJ20A | CJSMBJ20CA | B20A XX | B20CA XX | 22.29 | 24.48 | 1 | 5 | 5 | 20 | 18.6 | 32.1 |
| CJSMBJ22A | CJSMBJ22CA | B22A XX | B22CA XX | 24.5 | 26.88 | 1 | 5 | 5 | 22 | 16.9 | 35.1 |
| CJSMBJ24A | CJSMBJ24CA | B24A XX | B24CA XX | 26.81 | 29.48 | 1 | 5 | 5 | 24 | 15.5 | 38.5 |
| CJSMBJ26A | CJSMBJ26CA | B26A XX | B26CA XX | 29.02 | 31.88 | 1 | 5 | 5 | 26 | 14.3 | 41.7 |
| CJSMBJ28A | CJSMBJ28CA | B28A XX | B28CA XX | 31.22 | 34.38 | 1 | 5 | 5 | 28 | 13.3 | 44.9 |
| CJSMBJ30A | CJSMBJ30CA | B30A XX | B30CA XX | 33.43 | 36.77 | 1 | 5 | 5 | 30 | 12.4 | 47.9 |
| CJSMBJ33A | CJSMBJ33CA | B33A XX | B33CA XX | 36.85 | 40.57 | 1 | 5 | 5 | 33 | 11.3 | 52.8 |
| CJSMBJ36A | CJSMBJ36CA | B36A XX | B36CA XX | 40.16 | 44.17 | 1 | 5 | 5 | 36 | 10.4 | 57.5 |
| CJSMBJ40A | CJSMBJ40CA | B40A XX | B40CA XX | 44.58 | 49.07 | 1 | 5 | 5 | 40 | 9.3 | 63.9 |
| CJSMBJ43A | CJSMBJ43CA | B43A XX | B43CA XX | 47.99 | 52.76 | 1 | 5 | 5 | 43 | 8.7 | 68.7 |
| CJSMBJ45A | CJSMBJ45CA | B45A XX | B45CA XX | 50.2 | 55.26 | 1 | 5 | 5 | 45 | 8.3 | 72 |
| CJSMBJ48A | CJSMBJ48CA | B48A XX | B48CA XX | 53.51 | 58.86 | 1 | 5 | 5 | 48 | 7.8 | 76.6 |
| CJSMBJ51A | CJSMBJ51CA | B51A XX | B51CA XX | 56.93 | 62.66 | 1 | 5 | 5 | 51 | 7.3 | 81.6 |
| CJSMBJ54A | CJSMBJ54CA | B54A XX | B54CA XX | 60.24 | 66.25 | 1 | 5 | 5 | 54 | 6.9 | 86.2 |
| CJSMBJ58A | CJSMBJ58CA | B58A XX | B58CA XX | 64.66 | 71.15 | 1 | 5 | 5 | 58 | 6.5 | 92.7 |
| CJSMBJ60A | CJSMBJ60CA | B60A XX | B60CA XX | 66.97 | 73.65 | 1 | 5 | 5 | 60 | 6.2 | 95.8 |
| CJSMBJ64A | CJSMBJ64CA | B64A XX | B64CA XX | 71.39 | 78.54 | 1 | 5 | 5 | 64 | 5.9 | 102 |
| CJSMBJ70A | CJSMBJ70CA | B70A XX | B70CA XX | 78.11 | 85.94 | 1 | 5 | 5 | 70 | 5.3 | 111.9 |
| CJSMBJ75A | CJSMBJ75CA | B75A XX | B75CA XX | 83.63 | 92.04 | 1 | 5 | 5 | 75 | 5 | 119.8 |
| CJSMBJ78A | CJSMBJ78CA | B78A XX | B78CA XX | 87.05 | 95.73 | 1 | 5 | 5 | 78 | 4.8 | 124.7 |
| CJSMBJ85A | CJSMBJ85CA | B85A XX | B85CA XX | 94.78 | 103.93 | 1 | 5 | 5 | 85 | 4.4 | 135.6 |
| CJSMBJ90A | CJSMBJ90CA | B90A XX | B90CA XX | 100.4 | 110.92 | 1 | 5 | 5 | 90 | 4.1 | 144.5 |
| CJSMBJ100A | CJSMBJ100CA | B100A XX | B100CA XX | 111.45 | 122.91 | 1 | 5 | 5 | 100 | 3.7 | 160.4 |

Notes:

- (1) Waveform of CJSMBJ10A -CJSMBJ100CA are defined as per fig.3
- (2) XX=Code

Figure 1. Peak Pulse Power Rating Curve



Figure 2. Pulse Derating Curve

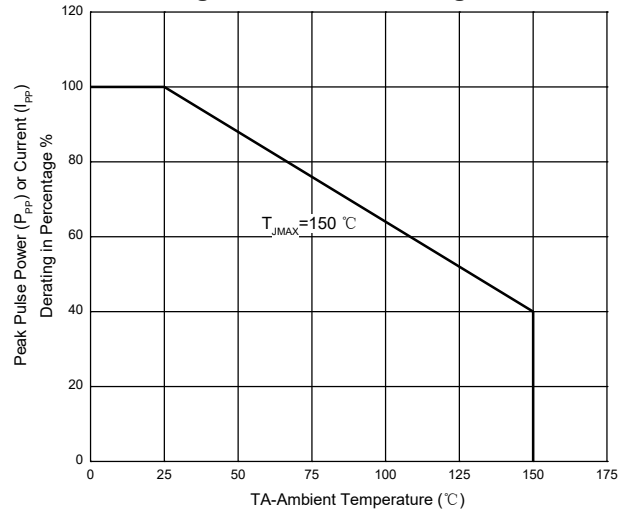


Figure 3. Pulse Waveform



Figure 4. Typical Junction Capacitance



Figure 5. Steady State Power Dissipation Derating Curve



Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

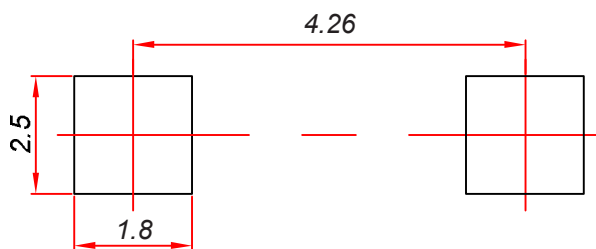


SMBG Package Outline Dimensions



Dimensions in inches and (millimeters)

SMBG Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

NOTICE

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Reel Taping Specifications For Surface Mount Devices- SMBG



FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

| ITEM | SYMBOL | SMBG mm(inch) |
|------------------------|--------|------------------------|
| Carrier width | A | 4.09±0.1(0.161±0.004) |
| Carrier length | B | 5.82±0.1(0.229±0.004) |
| Carrier depth | C | 2.50±0.1(0.100±0.004) |
| Sprocket hole | d | 1.55±0.05(0.061±0.002) |
| Reel outside diameter | D | 330±2.0(13±0.079) |
| Reel inner diameter | D1 | 75±1.0(2.95±0.039) |
| Feed hole diameter | D2 | 13±0.5(0.512±0.020) |
| Sprocket hole position | E | 1.75±0.1(0.069±0.004) |
| Punch hole position | F | 5.65±0.05(0.222±0.002) |
| Punch hole pitch | P | 8.0±0.1(0.315±0.004) |
| Sprocket hole pitch | P0 | 4.0±0.1(0.157±0.004) |
| Embossment center | P1 | 2.0±0.1(0.079±0.004) |
| Total tape thickness | T | 0.32±0.1(0.013±0.004) |
| Tape width | W | 12.0±0.2(0.472±0.008) |
| Reel width | W1 | 16.8±2.0(0.661±0.079) |

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

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