

SMCG Plastic-Encapsulate Diodes

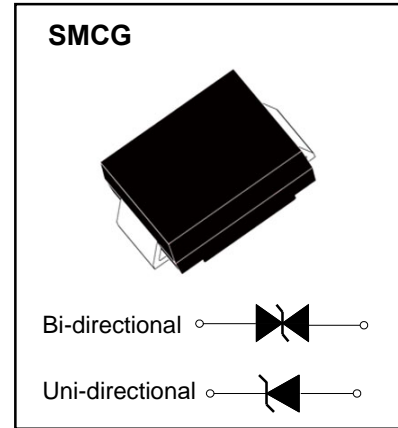
CJSMCJ SERIES Transient Voltage Suppressor Diodes

Features

- P_{PP} 1500W
- 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 | 1500 |
| Peak pulse current(note1) | I_{PPM} | A | with a 10/1000us waveform | See Next Table |
| Power dissipation | P_D | W | On infinite heat sink at $T_L=50^\circ\text{C}$ | 6.5 |
| Peak forward surge current | I_{FSM} | A | 8.3 ms single half sine-wave uni-directional only (note 2) | 200 |
| 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 100A for uni-directional only | 3.5 |
| Thermal resistance | $R_{\theta JL}$ | $^\circ\text{C}/\text{W}$ | junction to lead $T_L=50^\circ\text{C}$ | 15 |
| | $R_{\theta JA}$ | $^\circ\text{C}/\text{W}$ | junction to ambient $T_A=25^\circ\text{C}$ | 75 |

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 $V_{BR}@I_T$ | | Test Current | Max Reverse Leakage @VRWM | Reverse Standoff Voltage | Max Peak Pulse Current | Max Clamping Voltage @Ipp |
|-------------|-------------|---------------------------|--------------|--------------------------------|---------|--------------|---------------------------|--------------------------|------------------------|---------------------------|
| UNI | BI | UNI | BI | Min.(V) | Max.(V) | IT(mA) | IR(uA) | $V_{RWM}(V)$ | IPP(A) | $V_c(V)$ |
| CJSMCJ10A | CJSMCJ10CA | C10A XX ⁽²⁾ | C10CA XX | 11.14 | 12.29 | 1 | 5 | 10 | 88.3 | 16.8 |
| CJSMCJ11A | CJSMCJ11CA | C11A XX | C11CA XX | 12.25 | 13.49 | 1 | 5 | 11 | 82.5 | 18 |
| CJSMCJ12A | CJSMCJ12CA | C12A XX | C12CA XX | 13.35 | 14.69 | 1 | 5 | 12 | 75.4 | 19.7 |
| CJSMCJ13A | CJSMCJ13CA | C13A XX | C13CA XX | 14.46 | 15.89 | 1 | 5 | 13 | 69.8 | 21.3 |
| CJSMCJ14A | CJSMCJ14CA | C14A XX | C14CA XX | 15.66 | 17.19 | 1 | 5 | 14 | 64.7 | 23 |
| CJSMCJ15A | CJSMCJ15CA | C15A XX | C15CA XX | 16.77 | 18.49 | 1 | 5 | 15 | 61.5 | 24.2 |
| CJSMCJ16A | CJSMCJ16CA | C16A XX | C16CA XX | 17.87 | 19.69 | 1 | 5 | 16 | 57.7 | 25.7 |
| CJSMCJ17A | CJSMCJ17CA | C17A XX | C17CA XX | 18.98 | 20.89 | 1 | 5 | 17 | 54.4 | 27.3 |
| CJSMCJ18A | CJSMCJ18CA | C18A XX | C18CA XX | 20.08 | 22.08 | 1 | 5 | 18 | 51.4 | 28.9 |
| CJSMCJ20A | CJSMCJ20CA | C20A XX | C20CA XX | 22.29 | 24.48 | 1 | 5 | 20 | 46.3 | 32.1 |
| CJSMCJ22A | CJSMCJ22CA | C22A XX | C22CA XX | 24.5 | 26.88 | 1 | 5 | 22 | 42.3 | 35.1 |
| CJSMCJ24A | CJSMCJ24CA | C24A XX | C24CA XX | 26.81 | 29.48 | 1 | 5 | 24 | 38.6 | 38.5 |
| CJSMCJ26A | CJSMCJ26CA | C26A XX | C26CA XX | 29.02 | 31.88 | 1 | 5 | 26 | 35.7 | 41.7 |
| CJSMCJ28A | CJSMCJ28CA | C28A XX | C28CA XX | 31.22 | 34.38 | 1 | 5 | 28 | 33.1 | 44.9 |
| CJSMCJ30A | CJSMCJ30CA | C30A XX | C30CA XX | 33.43 | 36.77 | 1 | 5 | 30 | 31 | 47.9 |
| CJSMCJ33A | CJSMCJ33CA | C33A XX | C33CA XX | 36.85 | 40.57 | 1 | 5 | 33 | 28.2 | 52.8 |
| CJSMCJ36A | CJSMCJ36CA | C36A XX | C36CA XX | 40.16 | 44.17 | 1 | 5 | 36 | 25.9 | 57.5 |
| CJSMCJ40A | CJSMCJ40CA | C40A XX | C40CA XX | 44.58 | 49.07 | 1 | 5 | 40 | 23.3 | 63.9 |
| CJSMCJ43A | CJSMCJ43CA | C43A XX | C43CA XX | 47.99 | 52.76 | 1 | 5 | 43 | 21.7 | 68.7 |
| CJSMCJ45A | CJSMCJ45CA | C45A XX | C45CA XX | 50.2 | 55.26 | 1 | 5 | 45 | 20.6 | 72 |
| CJSMCJ48A | CJSMCJ48CA | C48A XX | C48CA XX | 53.51 | 58.86 | 1 | 5 | 48 | 19.4 | 76.6 |
| CJSMCJ51A | CJSMCJ51CA | C51A XX | C51CA XX | 56.93 | 62.66 | 1 | 5 | 51 | 18.2 | 81.6 |
| CJSMCJ54A | CJSMCJ54CA | C54A XX | C54CA XX | 60.24 | 66.25 | 1 | 5 | 54 | 17.3 | 86.2 |
| CJSMCJ58A | CJSMCJ58CA | C58A XX | C58CA XX | 64.66 | 71.15 | 1 | 5 | 58 | 16.1 | 92.7 |
| CJSMCJ60A | CJSMCJ60CA | C60A XX | C60CA XX | 66.97 | 73.65 | 1 | 5 | 60 | 15.5 | 95.8 |
| CJSMCJ64A | CJSMCJ64CA | C64A XX | C64CA XX | 71.39 | 78.54 | 1 | 5 | 64 | 14.6 | 102 |
| CJSMCJ70A | CJSMCJ70CA | C70A XX | C70CA XX | 78.11 | 85.94 | 1 | 5 | 70 | 13.3 | 111.9 |
| CJSMCJ75A | CJSMCJ75CA | C75A XX | C75CA XX | 83.63 | 92.04 | 1 | 5 | 75 | 12.4 | 119.8 |
| CJSMCJ78A | CJSMCJ78CA | C78A XX | C78CA XX | 87.05 | 95.73 | 1 | 5 | 78 | 11.9 | 124.7 |
| CJSMCJ85A | CJSMCJ85CA | C85A XX | C85CA XX | 94.78 | 103.93 | 1 | 5 | 85 | 11 | 135.6 |
| CJSMCJ90A | CJSMCJ90CA | C90A XX | C90CA XX | 100.4 | 110.92 | 1 | 5 | 90 | 10.3 | 144.5 |
| CJSMCJ100A | CJSMCJ100CA | C100A XX | C100CA XX | 111.45 | 122.91 | 1 | 5 | 100 | 9.3 | 160.4 |

Notes:

- (1) Waveform of CJSMCJ10A -CJSMCJ100CA are defined as per fig.3
- (2) XX=Code

Figure 1. Peak Pulse Power Rating Curve

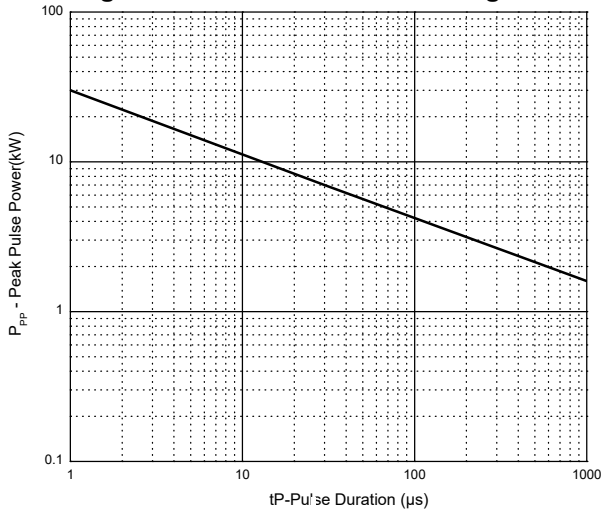


Figure 2. Pulse Derating Curve

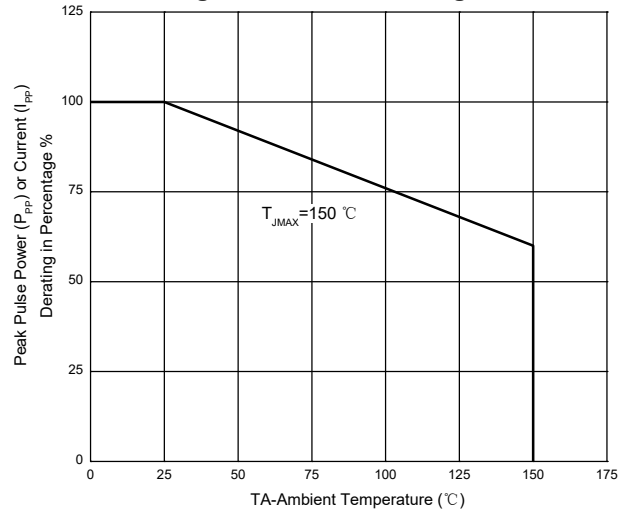


Figure 3. Pulse Waveform



Figure 4. Typical Junction Capacitance

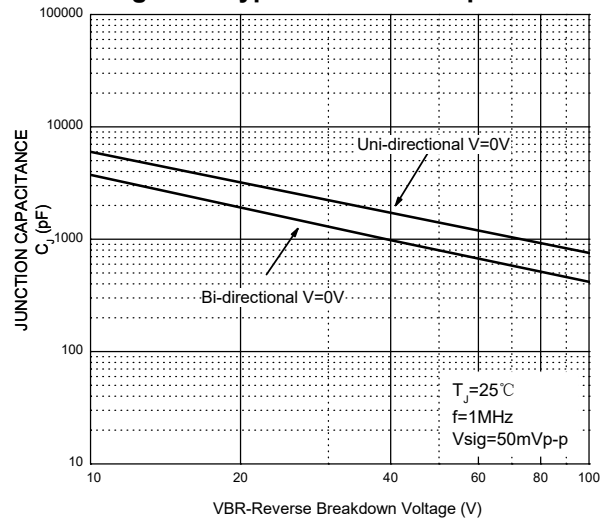


Figure 5. Steady State Power Dissipation Derating Curve

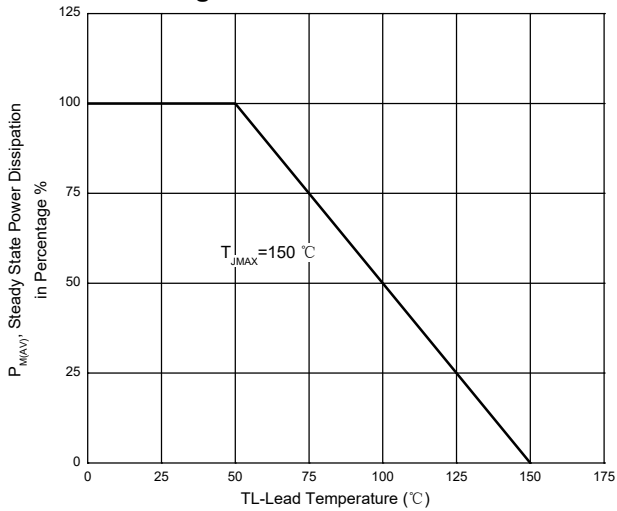
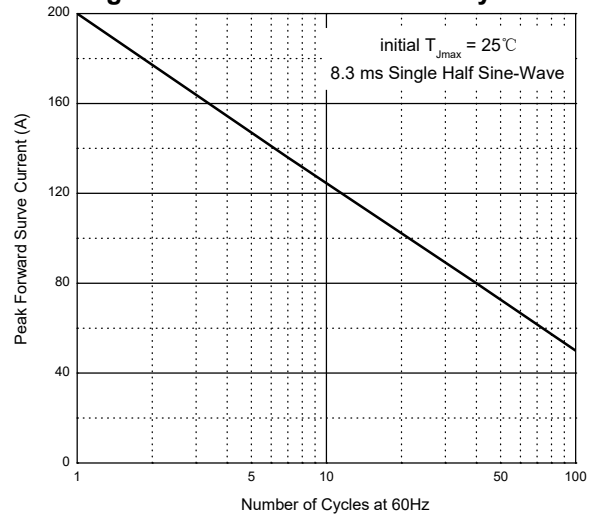
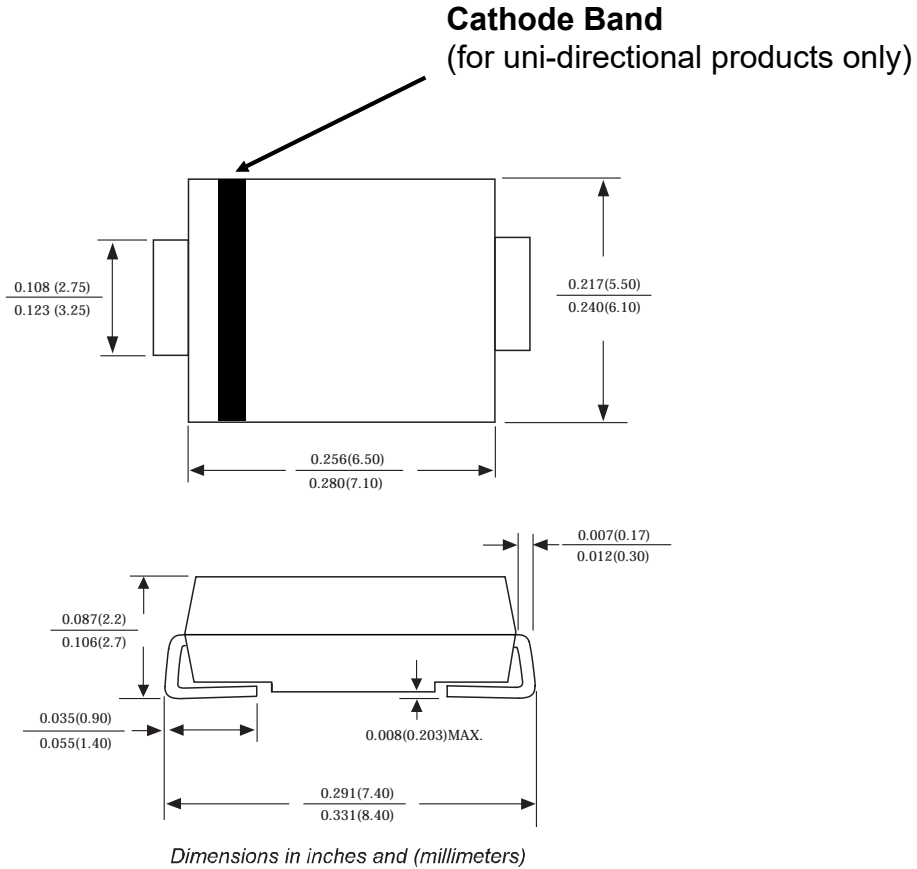


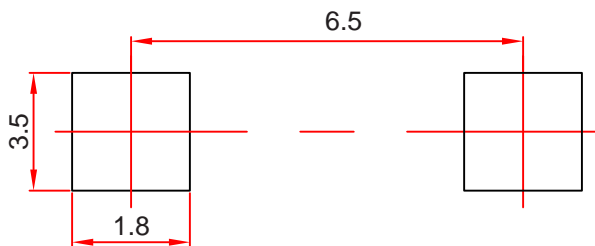
Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



SMCG Package Outline Dimensions



SMCG 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- SMCG

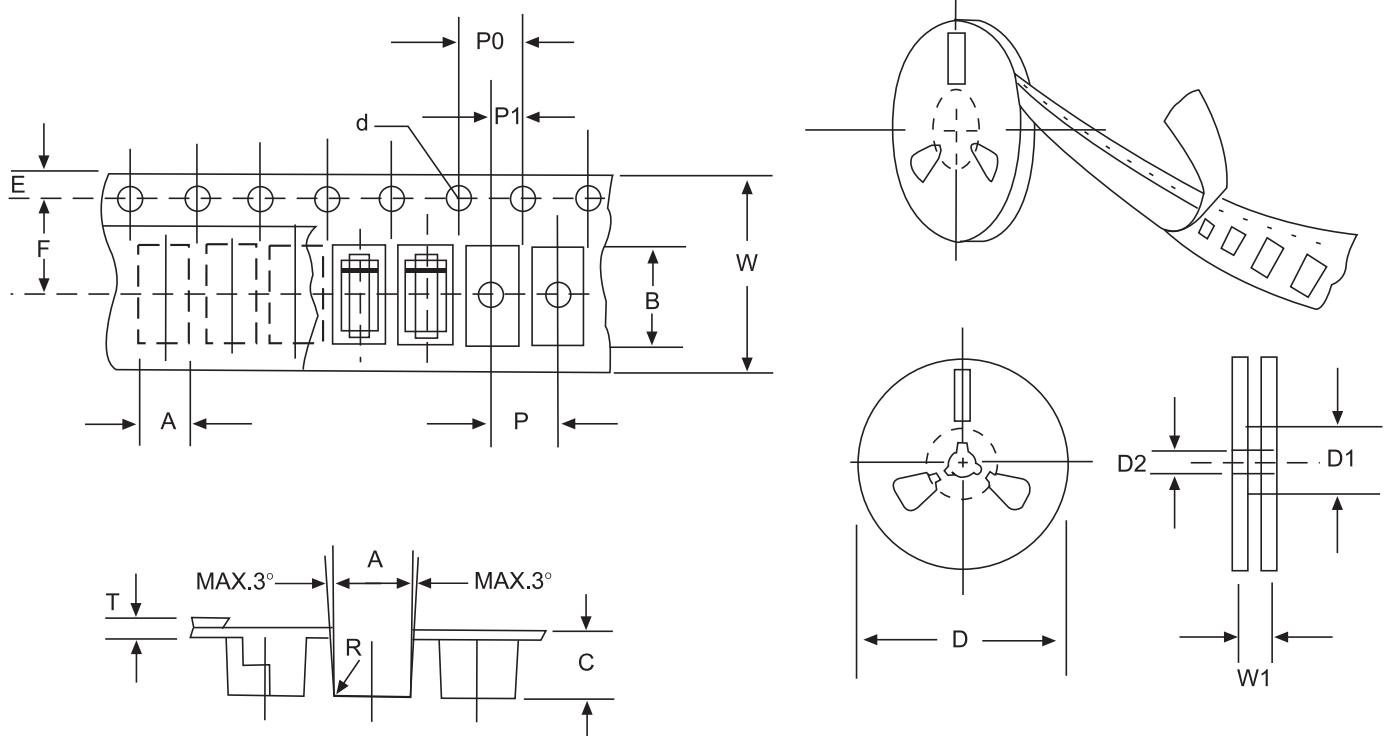


FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

| ITEM | SYMBOL | SMCG mm(inch) |
|------------------------|--------|------------------------|
| Carrier width | A | 6.05±0.1(0.238±0.004) |
| Carrier length | B | 8.31±0.1(0.327±0.004) |
| Carrier depth | C | 2.70±0.1(0.106±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 | 7.65±0.05(0.301±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 | 0.3±0.1(0.012±0.004) |
| Tape width | W | 16.0±0.2(0.630±0.008) |
| Reel width | W1 | 24.0±2.0(0.945±0.079) |

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

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