



**Surface Mount Transient Voltage Suppressor**  
**200W Peak Power Pulse Voltage 5.0 to 170V**

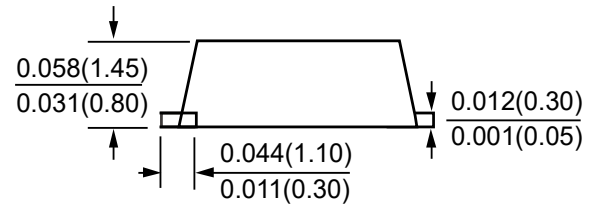
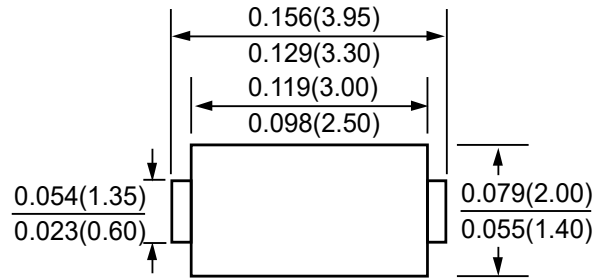


**FEATURES**

- Glass Passivated Chip
- Ultra Fast Switching for High Efficiency
- For Surface Mounted Applications
- Low Forward Voltage Drop and High Current Capability
- Low Reverse Leakage Current
- Plastic Material Has UL Flammability Classification 94V-0
- High Temperature Soldering : 260°C /10 Seconds at Terminals
- Pb Free Product at Available : 99% Sn Above Meet RoHS Environment Substance Directive Request
- Uni-directional

SOD-123FL

Unit:inch(mm)



**MECHANICAL DATA**

- Case : Molded Plastic
- Polarity : Indicated by Cathode Band

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.  
 For Capacitive load derate current by 20%.

| Parameter  | Symbol         | Value          | Unit |
|--|----------------|----------------|------|
| Peak Power Dissipation on 10/1000us Waveform (NOTE 1)            | $P_{PP}$       | 200            | W    |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (NOTE 2) | $I_{FSM}$      | 20             | A    |
| Peak Pulse Current on 10/1000us Waveform (NOTE 1)                | $I_{PP}$       | See Next Table | A    |
| Operating and Storage Temperature Range                          | $T_J, T_{STG}$ | -55~+150       | °C   |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.2.
2. Measured on 8.3ms, single half sine-wave or equivalent square wave.

# DEVICE CHARACTERISTICS

## P2SMLJ Series

| Part Number                              | Reverse Stand-off Voltage | Breakdown Voltage |       | Test Current | Reverse Leakage | Max Clamping Voltage | Peak Pulse Current | Marking Code |
|--|---------------------------|-------------------|-------|--------------|-----------------|----------------------|--------------------|--------------|
|  |                           | $V_{BR@I_T}$      |       |              |                 |                      |                    |              |
|  | $V_{RRM}$                 | Min.              | Max.  | $I_T$        | $I_R@V_{RWM}$   | $V_C@I_{PP}$         | $I_{PP}$           |              |
|  | V                         | V                 | V     | mA           | uA              | V                    | A                  |              |
| <b>200W Transient Voltage Suppressor</b> |                           |                   |       |              |                 |                      |                    |              |
| P2SMLJ5.0A                               | 5.0                       | 6.40              | 7.00  | 10           | 400             | 9.2                  | 21.7               | HE           |
| P2SMLJ6.0A                               | 6.0                       | 6.67              | 7.37  | 10           | 400             | 10.3                 | 19.4               | HG           |
| P2SMLJ6.5A                               | 6.5                       | 7.22              | 7.98  | 10           | 250             | 11.2                 | 17.9               | HK           |
| P2SMLJ7.0A                               | 7.0                       | 7.78              | 8.60  | 10           | 100             | 12.0                 | 16.7               | HM           |
| P2SMLJ7.5A                               | 7.5                       | 8.33              | 9.21  | 1            | 50              | 12.9                 | 15.5               | HP           |
| P2SMLJ8.0A                               | 8.0                       | 8.89              | 9.83  | 1            | 25              | 13.6                 | 14.7               | HR           |
| P2SMLJ8.5A                               | 8.5                       | 9.44              | 10.40 | 1            | 10              | 14.4                 | 13.9               | HT           |
| P2SMLJ9.0A                               | 9.0                       | 10.00             | 11.10 | 1            | 5               | 15.4                 | 13.0               | HV           |
| P2SMLJ10A                                | 10.0                      | 11.10             | 12.30 | 1            | 2.5             | 17.0                 | 11.8               | HX           |
| P2SMLJ11A                                | 11.0                      | 12.20             | 13.50 | 1            | 2.5             | 18.2                 | 11.0               | HZ           |
| P2SMLJ12A                                | 12.0                      | 13.30             | 14.70 | 1            | 2.5             | 19.9                 | 10.1               | IE           |
| P2SMLJ13A                                | 13.0                      | 14.40             | 15.90 | 1            | 1               | 21.5                 | 9.3                | IG           |
| P2SMLJ14A                                | 14.0                      | 15.60             | 17.20 | 1            | 1               | 23.2                 | 8.6                | IK           |
| P2SMLJ15A                                | 15.0                      | 16.70             | 18.50 | 1            | 1               | 24.4                 | 8.2                | IM           |
| P2SMLJ16A                                | 16.0                      | 17.80             | 19.70 | 1            | 1               | 26.0                 | 7.7                | IP           |
| P2SMLJ17A                                | 17.0                      | 18.90             | 20.90 | 1            | 1               | 27.6                 | 7.2                | IR           |
| P2SMLJ18A                                | 18.0                      | 20.00             | 22.10 | 1            | 1               | 29.2                 | 6.8                | IT           |
| P2SMLJ20A                                | 20.0                      | 22.20             | 24.50 | 1            | 1               | 32.4                 | 6.2                | IV           |
| P2SMLJ22A                                | 22.0                      | 24.40             | 26.90 | 1            | 1               | 35.5                 | 5.6                | IX           |
| P2SMLJ24A                                | 24.0                      | 26.70             | 29.50 | 1            | 1               | 38.9                 | 5.1                | IZ           |
| P2SMLJ26A                                | 26.0                      | 28.90             | 31.90 | 1            | 1               | 42.1                 | 4.8                | JE           |
| P2SMLJ28A                                | 28.0                      | 31.10             | 34.40 | 1            | 1               | 45.4                 | 4.4                | JG           |
| P2SMLJ30A                                | 30.0                      | 33.30             | 36.80 | 1            | 1               | 48.4                 | 4.0                | JK           |
| P2SMLJ33A                                | 33.0                      | 36.70             | 40.60 | 1            | 1               | 53.3                 | 3.8                | JM           |
| P2SMLJ36A                                | 36.0                      | 40.00             | 44.20 | 1            | 1               | 58.1                 | 3.4                | JP           |
| P2SMLJ40A                                | 40.0                      | 44.40             | 49.10 | 1            | 1               | 64.5                 | 3.1                | JR           |
| P2SMLJ43A                                | 43.0                      | 47.80             | 52.80 | 1            | 1               | 69.4                 | 2.9                | JT           |
| P2SMLJ45A                                | 45.0                      | 50.00             | 55.30 | 1            | 1               | 72.7                 | 2.8                | JV           |
| P2SMLJ48A                                | 48.0                      | 53.30             | 58.90 | 1            | 1               | 77.4                 | 2.6                | JX           |
| P2SMLJ51A                                | 51.0                      | 56.70             | 62.70 | 1            | 1               | 82.4                 | 2.4                | JZ           |
| P2SMLJ54A                                | 54.0                      | 60.00             | 66.30 | 1            | 1               | 87.1                 | 2.3                | RE           |
| P2SMLJ58A                                | 58.0                      | 64.40             | 71.20 | 1            | 1               | 93.6                 | 2.1                | RG           |
| P2SMLJ60A                                | 60.0                      | 66.70             | 73.70 | 1            | 1               | 96.8                 | 1.8                | RK           |
| P2SMLJ64A                                | 64.0                      | 71.10             | 78.60 | 1            | 1               | 103.0                | 1.7                | RM           |
| P2SMLJ70A                                | 70.0                      | 77.80             | 86.00 | 1            | 1               | 113.0                | 1.5                | RP           |

# DEVICE CHARACTERISTICS

## P2SMLJ Series

| Part Number                              | Reverse Stand-off Voltage | Breakdown Voltage |        | Test Current | Reverse Leakage | Max Clamping Voltage | Peak Pulse Current | Marking Code |
|--|---------------------------|-------------------|--------|--------------|-----------------|----------------------|--------------------|--------------|
|  |                           | $V_{BR@I_T}$      |        |              |                 |                      |                    |              |
|  | $V_{RRM}$                 | Min.              | Max.   | $I_T$        | $I_R@V_{RWM}$   | $V_C@I_{PP}$         | $I_{PP}$           |              |
|  | V                         | V                 | V      | mA           | uA              | V                    | A                  |              |
| <b>200W Transient Voltage Suppressor</b> |                           |                   |        |              |                 |                      |                    |              |
| P2SMLJ75A                                | 75.0                      | 83.30             | 92.10  | 1            | 1               | 121.0                | 1.4                | RR           |
| P2SMLJ78A                                | 78.0                      | 86.70             | 95.80  | 1            | 1               | 126.0                | 1.4                | RT           |
| P2SMLJ85A                                | 85.0                      | 94.40             | 104.00 | 1            | 1               | 137.0                | 1.3                | RV           |
| P2SMLJ90A                                | 90.0                      | 100.00            | 111.00 | 1            | 1               | 146.0                | 1.2                | RX           |
| P2SMLJ100A                               | 100.0                     | 111.00            | 123.00 | 1            | 1               | 162.0                | 1.1                | RZ           |
| P2SMLJ110A                               | 110.0                     | 122.00            | 135.00 | 1            | 1               | 177.0                | 1.0                | SE           |
| P2SMLJ120A                               | 120.0                     | 133.00            | 147.00 | 1            | 1               | 193.0                | 0.9                | SG           |
| P2SMLJ130A                               | 130.0                     | 144.00            | 159.00 | 1            | 1               | 209.0                | 0.8                | SK           |
| P2SMLJ150A                               | 150.0                     | 167.00            | 185.00 | 1            | 1               | 243.0                | 0.7                | SM           |
| P2SMLJ160A                               | 160.0                     | 178.00            | 197.00 | 1            | 1               | 259.0                | 0.7                | SP           |
| P2SMLJ170A                               | 170.0                     | 189.00            | 209.00 | 1            | 1               | 275.0                | 0.6                | SR           |

NOTES :

3. The available parts are 'A' type only, the parts without A( $V_{BR}$  is  $\pm 10\%$ ) is not available.

# DEVICE CHARACTERISTICS

## P2SMLJ Series

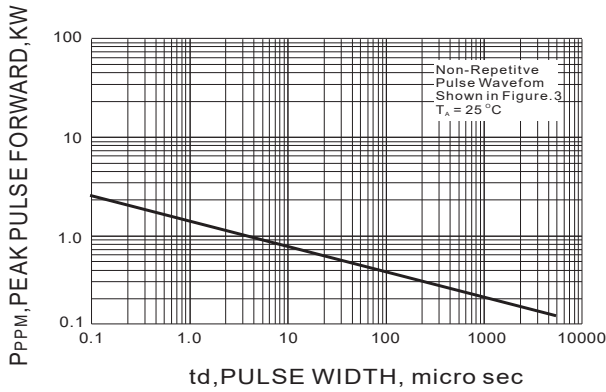


Fig.1 PEAK PULSE POWER RATING CURVE

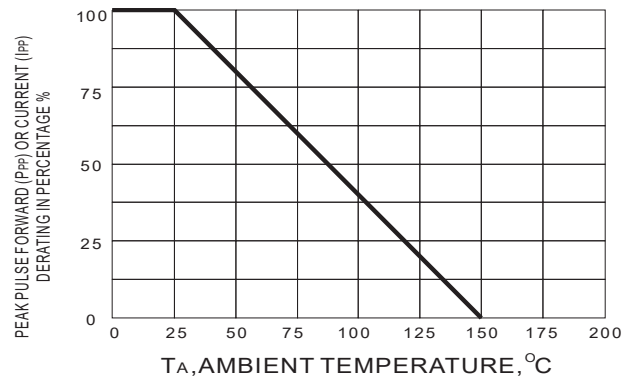


Fig.2 DERATING CURVE

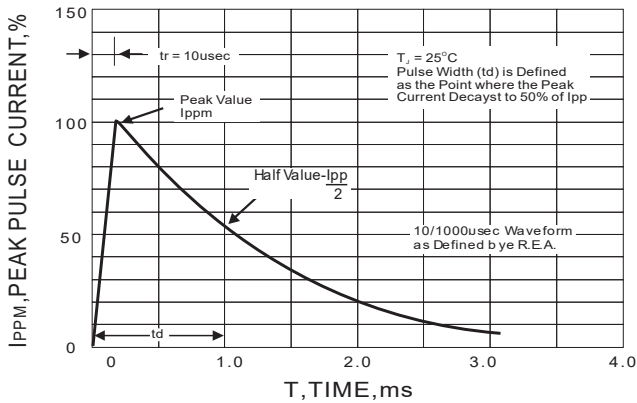


Fig.3 PULSE WAVE FORM

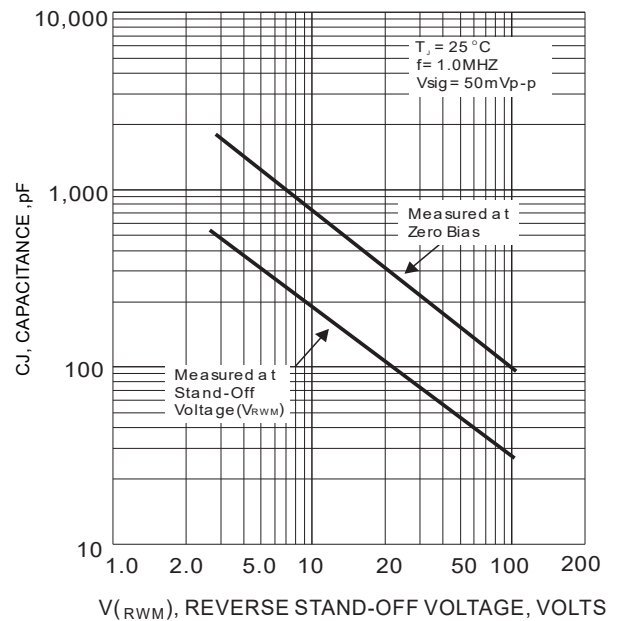


Fig.4 TYPICAL CAPACITANCE

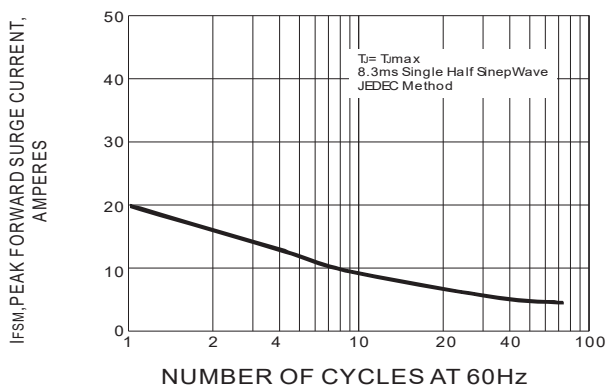


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT