

## Features

- For surface mounted applications
- Low-profile package
- Optimized for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
- Ideal for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-4)
- Low incremental surge resistance
- IEC 1000-4-2 (ESD) 15 kV (air) 8 kV (contact)  
IEC 1000-4-4 (EFT) 40 A (tp = 5/ 50 ns)  
IEC 1000-4-5 (Lightning) 24 A (tp = 8/ 20 μs)
- Low incremental surge resistance, excellent clamping capability
- 200 W peak pulse power capability with a 10/1000 μs waveform, repetition rate (duty cycle): 0.01 %
- Very fast response time
- High temperature soldering guaranteed: 260°C/ 10 seconds at terminals

## Applications

TVS devices are ideal for the protection of I/O interfaces,  $V_{CC}$  bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

## Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by 10x1000μs waveform (Fig.1)(Note 1), (Note 2)	$P_{PPM}$	200	Watts
Power Dissipation on infinite heat sink at $T_A=50^{\circ}\text{C}$	$P_D$	2	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	$I_{FSM}$	20	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4)	$V_F$	3.5V/6.5	V
Operating junction and Storage Temperature Range.	$T_J, T_{STG}$	-55 to 150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	$^{\circ}\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	120	$^{\circ}\text{C}/\text{W}$

### 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, duty cycle=4 per minute maximum.
3.  $V_F < 3.5\text{V}$  for devices of  $V_{BR\_} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR\_} > 201\text{V}$ .

**Electrical Characteristics**

Type Number	Reverse Stand-Off Voltage	Breakdown Voltage@I <sub>T</sub>		Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RWM</sub>
(UNI)	V <sub>RWM</sub> (V)	V <sub>BR MIN.</sub> (V)	V <sub>BR MAX.</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (μA)
SMFJ3.0A SMFJ3.0CA	3.0	4.10	4.50	10	8.0	25.0	400
SMFJ5.0A SMFJ5.0CA	5.0	6.40	7.25	10	9.2	21.7	400
SMFJ6.0A SMFJ6.0CA	6.0	6.67	7.67	10	10.3	19.4	400
SMFJ6.5A SMFJ6.5CA	6.5	7.22	8.30	10	11.2	17.9	400
SMFJ7.0A SMFJ7.0CA	7.0	7.78	8.95	10	12.0	16.7	250
SMFJ7.5A SMFJ7.5CA	7.5	8.33	9.58	1	12.9	15.5	100
SMFJ8.0A SMFJ8.0CA	8.0	8.89	10.23	1	13.6	14.7	50
SMFJ8.5A SMFJ8.5CA	8.5	9.44	10.82	1	14.4	13.9	10
SMFJ9.0A SMFJ9.0CA	9.0	10.00	11.50	1	15.4	13.5	5.0
SMFJ10A SMFJ10CA	10.0	11.10	12.80	1	17.0	11.8	2.5
SMFJ11A SMFJ11CA	11.0	12.20	14.00	1	18.2	11.0	2.5
SMFJ12A SMFJ12CA	12.0	13.30	15.30	1	19.9	10.1	2.5
SMFJ13A SMFJ13CA	13.0	14.40	16.50	1	21.5	9.30	2.5
SMFJ14A SMFJ14CA	14.0	15.60	17.90	1	23.2	8.60	2.5
SMFJ15A SMFJ15CA	15.0	16.70	19.20	1	24.4	8.20	2.5
SMFJ16A SMFJ16CA	16.0	17.80	20.50	1	26.0	7.70	2.5
SMFJ17A SMFJ17CA	17.0	18.90	21.70	1	27.6	7.20	2.5
SMFJ18A SMFJ18CA	18.0	20.00	23.30	1	29.2	5.80	2.5
SMFJ20A SMFJ20CA	20.0	22.20	25.50	1	32.4	6.20	2.5
SMFJ22A SMFJ22CA	22.0	24.40	28.00	1	35.5	5.60	2.5
SMFJ24A SMFJ24CA	24.0	26.70	30.70	1	38.9	5.10	2.5
SMFJ26A SMFJ26CA	26.0	28.90	33.20	1	42.1	4.80	2.5
SMFJ28A SMFJ28CA	28.0	31.10	35.80	1	45.4	4.40	2.5
SMFJ30A SMFJ30CA	30.0	33.30	38.30	1	48.4	4.10	2.5
SMFJ33A SMFJ33CA	33.0	36.70	42.20	1	53.3	3.80	2.5
SMFJ36A SMFJ36CA	36.0	40.00	46.00	1	58.1	3.40	2.5
SMFJ40A SMFJ40CA	40.0	44.40	51.10	1	64.5	3.10	2.5
SMFJ43A SMFJ43CA	43.0	47.80	54.90	1	69.4	2.90	2.5
SMFJ45A SMFJ45CA	45.0	50.00	57.50	1	72.7	2.80	2.5
SMFJ48A SMFJ48CA	48.0	53.30	61.30	1	77.4	2.60	2.5
SMFJ51A SMFJ51CA	51.0	56.70	65.20	1	82.4	2.40	2.5
SMFJ54A SMFJ54CA	54.0	60.00	69.00	1	87.1	2.30	2.5
SMFJ58A SMFJ58CA	58.0	64.40	74.10	1	93.6	2.10	2.5
SMFJ60A SMFJ60CA	60.0	66.70	76.70	1	96.8	1.80	2.5
SMFJ64A SMFJ64CA	64.0	71.10	81.80	1	103.0	1.70	2.5
SMFJ70A SMFJ70CA	70.0	77.80	89.50	1	113.0	1.50	2.5
SMFJ75A SMFJ75CA	75.0	83.30	95.80	1	121.0	1.40	2.5
SMFJ78A SMFJ78CA	78.0	86.70	99.70	1	126.0	1.40	2.5
SMFJ85A SMFJ85CA	85.0	94.40	108.20	1	137.0	1.30	2.5
SMFJ90A SMFJ90CA	90.0	100.00	115.50	1	146.0	1.20	2.5
SMFJ100A SMFJ100CA	100.0	111.00	128.00	1	162.0	1.10	2.5
SMFJ110A SMFJ110CA	110.0	122.00	140.50	1	177.0	1.00	2.5
SMFJ120A SMFJ120CA	120.0	133.00	153.00	1	193.0	0.90	2.5
SMFJ130A SMFJ130CA	130.0	144.00	165.50	1	209.0	0.80	2.5
SMFJ150A SMFJ150CA	150.0	167.00	192.60	1	243.0	0.70	2.5
SMFJ160A SMFJ160CA	160.0	178.00	205.00	1	259.0	0.70	2.5
SMFJ170A SMFJ170CA	170.0	189.00	217.50	1	275.0	0.60	2.5

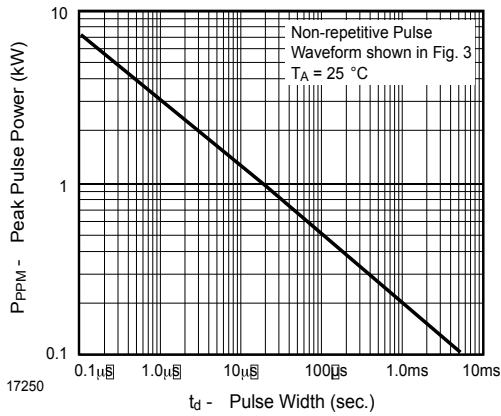


Figure 1. Peak Pulse Power Rating

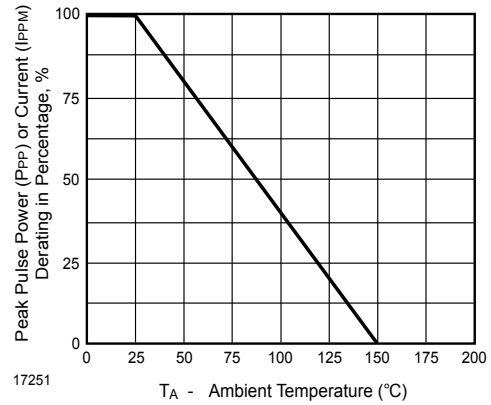


Figure 2. Pulse Derating Curve

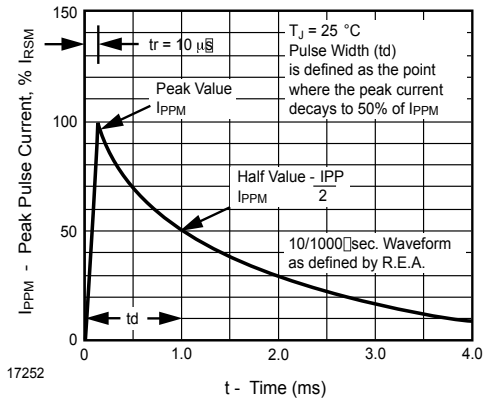
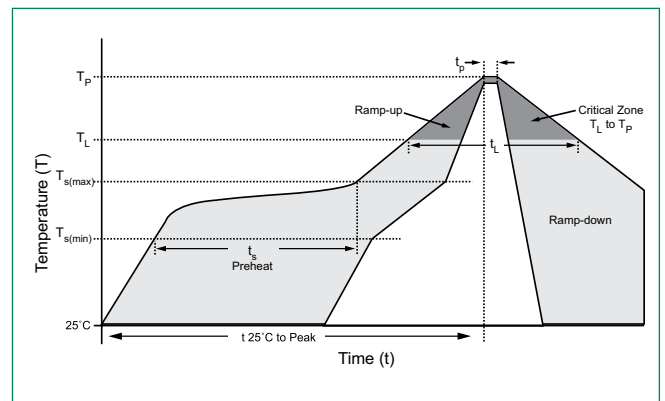


Figure 3. Pulse Waveform

### Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_s$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes Max.
Do not exceed		280°C



### Physical Specifications

Weight	0.002 ounce, 0.061 gram
Case	JEDEC SOD123 Molded Plastic over glass passivated junction
Polarity	Color band denotes cathode except Bipolar
Terminal	Matte Tin-plated leads, Solderable per JESD22-B102D

### Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

### Package Dimensions in mm

