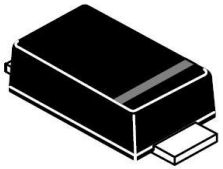
Description

The PT1A051V is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.



Features

- 500W peak pulsepower capability at 10 x 1000μs waveform, repetition rate (duty cycle): 0.01%
- Glass Passivated chip junction
- For surface mounted applications to optimize board space
- Low profile package
- Built-in strain relief
- Low incremental surge resistance
- Excellent clamping capability
- Plastic package has UL flammability classification 94V-O
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Typical IR less than 1uA above 12V
- High temperature soldering: 260° C/40 seconds at terminals
- IEC-61000-4-2 ESD ±30KV (Air/Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
- EFT protection of data lines in accordance with IEC61000-4-4(IEC801-4)

Applications

TVS devices are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

Maximum Ratings and Electrical Characteristics
(TA=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25℃ by 10x1000μs waveform (Fig.1)(Note 1) (Note 2)	P_{PPM}	500	W
Power Dissipation on infinite heat sink at TA=50℃	P_D	1.5	W
Peak Pulse Current (tp=8/20uS)	I_{PP}	60	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	VF	3.5V/5.0	V
Operating Junction and Storage Temperature Range	TJ, TSTG	-55 to ＋150	℃
Typical Thermal Resistance Junction to Lead	RuJL	30	℃/W
Typical Thermal Resistance Junction to Ambient	RuJA	120	℃/W

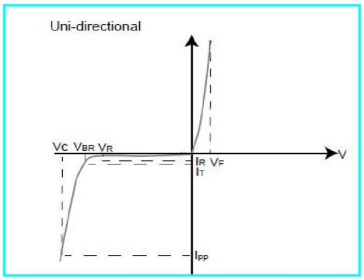
Notes:

1. Non-repetitive current pulse, per Fig.3and derated above TA=25℃ per Fig. 1.
2. Mounted on copper pad area of 0.31x0.31” (8.0 x 8.0mm) to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristics

PART NUMBER	REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE VBR(V)MAX @IT		TEST CURRENT	REVERSE LEAKAGE @VRWM	PEAKPULSECURRENT	MAXIMUM CLAMPING VOLTAGE @Ipp
PT1A051V	VRWM (V)	VBR MIN(V)	VBR MAX(V)	IT (mA)	IR (μA)	Ipp (A)	Vc (v)
	5.0	6.4	7.15	10	900	60	21.74

I-V Curve Characteristics



Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 1 - Pulse Derating Curve

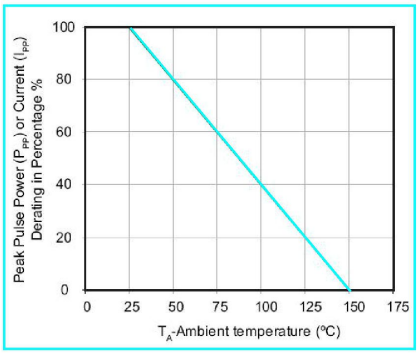
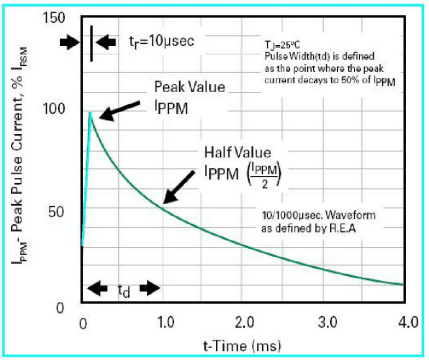


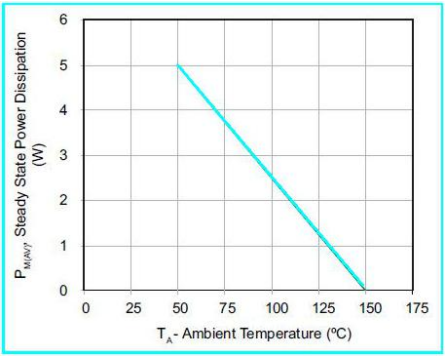
Figure 2 - Pulse Waveform



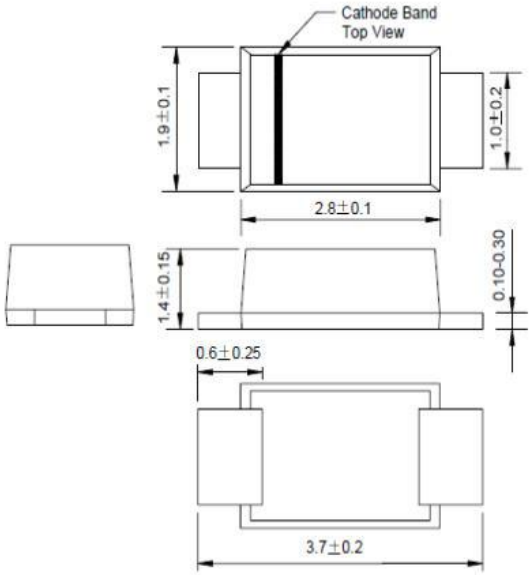
Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure3-Steady State Power Dissipation

Derating Curve



Product Dimensions



Part Numbering System

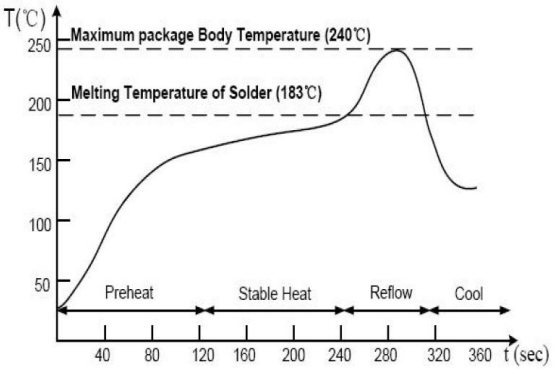
PT1A 051V

(1) (2)

(1) SERIES.

(2) VR VOLTAGE.

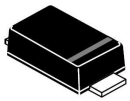
Solder Reflow Recommendations



- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- Thedevice can be exposed to a maximum temperature of 265°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.

Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Summary of Packing Options

Package Type	Description	Packing Quantity	Industry Standard
SOD123-FL 	Embossed Carrier Reel Pack	3000PCS	EIA-481-D