

HIGH CURRENT TVS DIODES



DESCRIPTION

The SMEJxxCA Series of high current bidirectional TVS diodes are designed for use in high power DC bus clamping applications. The SMEJxxCA meets or exceeds the IEEE 62.41 Cat B3 (6kV 1.5/50 μ s, 3kA 8/20 μ s). These devices come in a plastic encapsulated surface mount package with a maximum height of 5mm and maximum board space of 94 square millimeters. These devices are available in 58V, 66V and 76V.

APPLICATIONS

- High Power DC Bus

FEATURES

- Compatible with IEC 61000-4-5
- 3.5kA, 8/20 μ s Surge Capability
- Low Clamping Voltage Under Surge
- Bidirectional
- Surface Mount Package
- Snapback Technology
- ROHS & REACH Compliant

MECHANICAL CHARACTERISTICS

- Plastic Encapsulated Device
- Flammability Rating UL 94V-0
- Marking: Logo, Date Code & Marking Code

Bidirectional



MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_S	-55 to 150	°C
Peak Current Rating per 8/20 μ s IEC 61000-4-5	I_{PPM}	3.5	kA
Maximum Energy 8/20 μ s, 3.5kA	E_M	10	Joule
Peak Current 10/1000 μ s	I_{PPM}	350	A

TYPICAL DEVICE CHARACTERISTICS

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	MARKING CODE	REPETITIVE STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM STANDBY CURRENT	MAXIMUM CLAMPING VOLTAGE (Note 1)	TEMPERATURE COEFFICIENT OF $V_{(BR)}$	TYPICAL CAPACITANCE
		V_{WM} VOLTS	$V_{(BR)}$ @ 10mA VOLTS	I_D @ V_{WM} μ A	@ $I_{PP} = 3kA$ V_C VOLTS	$qV_{(BR)}$ mV/°C	@ 1V, 10kHz C nF
SMEJ48CA	E48V	48.0	53.3	5	92	0.1	3.5
SMEJ58CA	E58V	58.0	64.0	5	110	0.1	3.0
SMEJ66CA	E66V	66.0	72.0	5	120	0.1	2.5
SMEJ76CA	E76V	76.0	85.0	5	140	0.1	2.0

NOTE

1. V_C measured at the time which is coincident with the peak surge current.

FIGURE 1
PULSE WAVE FORM

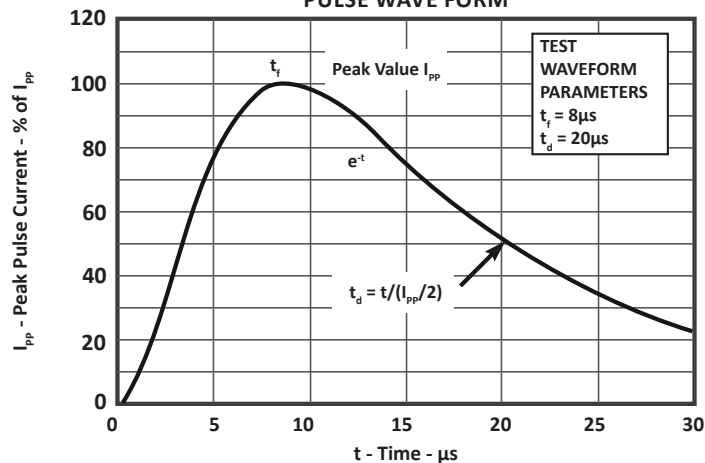
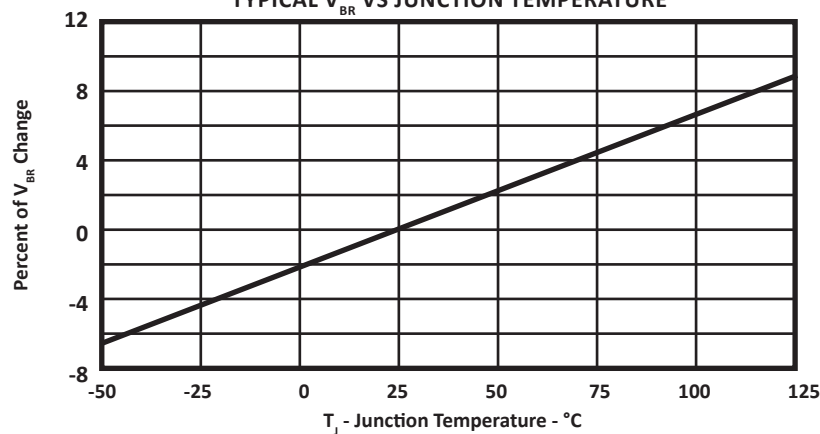


FIGURE 2
TYPICAL V_{BR} VS JUNCTION TEMPERATURE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 3
V-I CHARACTERISTIC
CURRENT I

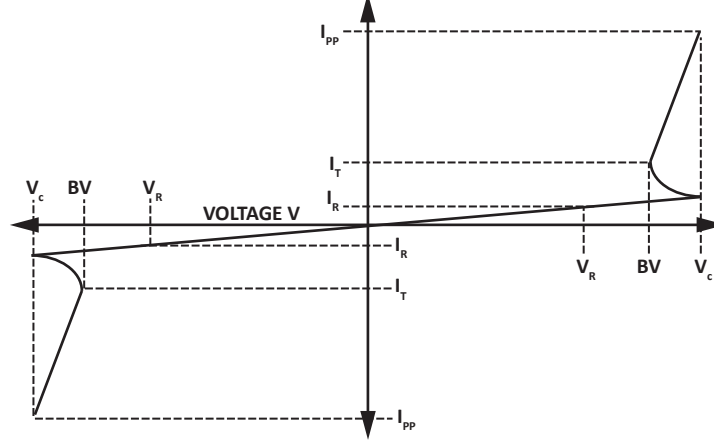
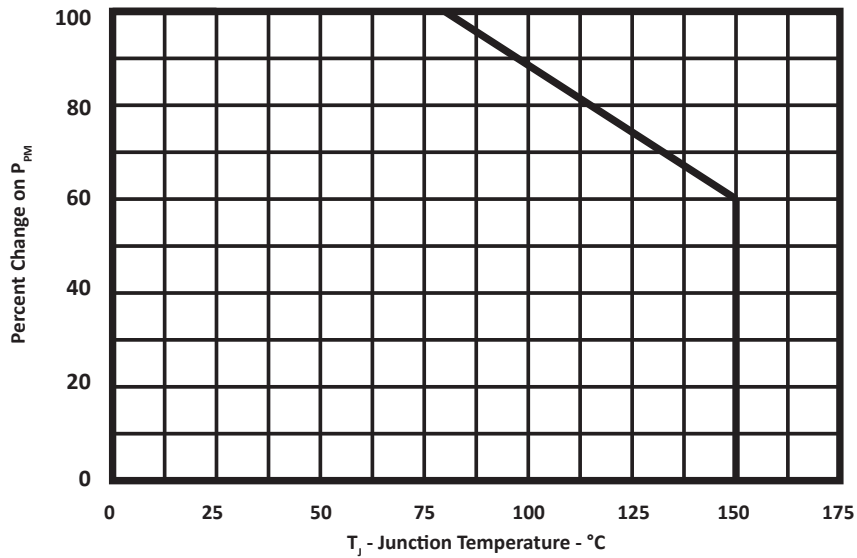


FIGURE 4
SURGE POWER DERATING VS JUNCTION TEMPERATURE



PACKAGE INFORMATION

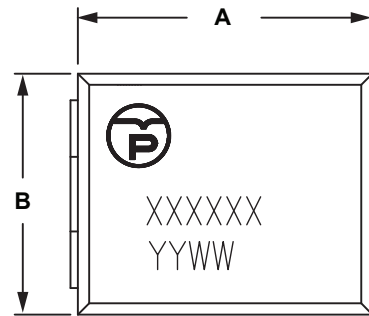
OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.20	11.00	0.402	0.433
B	7.90	8.50	0.311	0.335
C	4.70	5.30	0.185	0.208
D	1.20	1.80	0.047	0.071
E	2.70	3.30	0.106	0.130

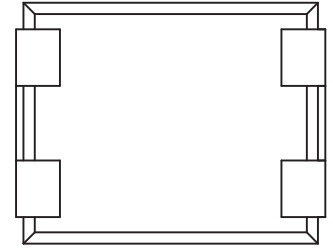
NOTES

1. Dimensions are exclusive of mold flash and metal burrs.

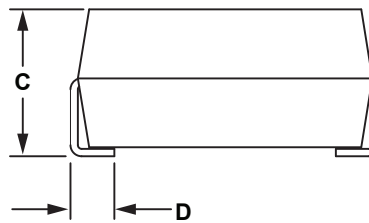
TOP VIEW



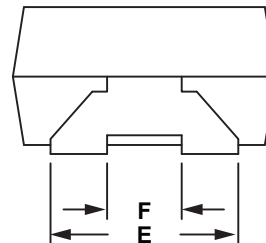
BOTTOM VIEW



SIDE VIEW



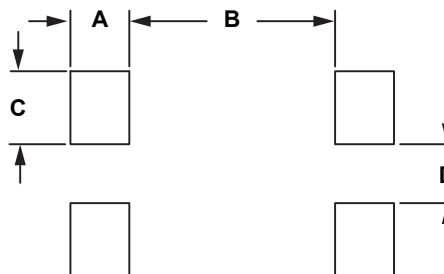
END VIEW



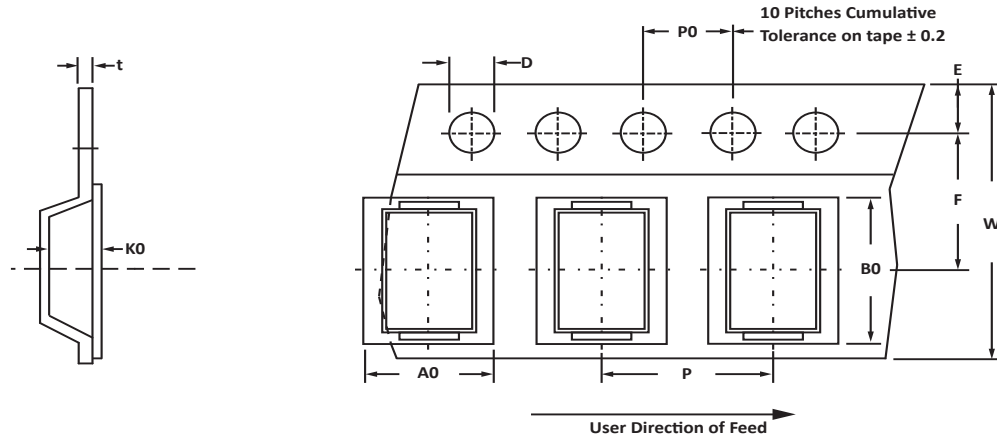
PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	6.5	0.256
B	3.51	0.138
C	2.79	0.110

PAD LAYOUT



TAPE AND REEL



SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
330mm (13")	12mm	8.50 ± 0.3	10.80 ± 0.3	5.2 ± 0.1	1.50 ± 0.1	1.75 ± 0.1	11.50 ± 0.05	24.00 ± 0.3	4.00 ± 0.1	2.00 ± 0.1	16.00 ± 0.2	0.4

NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T13 = 13" Reel - 1000 pieces per 12mm tape.
- Marking on Part - marking code (see page 2), date code and logo.

ORDERING INFORMATION

BASE PART NUMBER (Voltage = xx)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SMEJxxCA	N/A	-T13	1000	13"	N/A

This device is only available in a Lead-Free configuration.

COMPANY INFORMATION

COMPANY PROFILE

In business more than 25 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers LED wafer die for ESD protection and related high frequency products. ProTek Devices is ISO 9001:2015 certified.

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