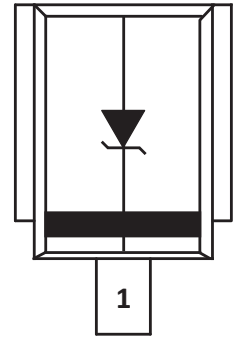


## HIGH POWER TVS ARRAY



### APPLICATIONS

- Digital Audio Tuner for Automotive
- Automotive Entertainment Systems
- Automotive Navigation Systems



**UNIDIRECTIONAL**

### FEATURES

- Junction Passivation Optimized Design Passivated Anisotropic Rectifier Technology
- $T_j = 175^\circ\text{C}$  Capability Suitable for High Reliability and Automotive Requirements
- Unidirectional Configuration
- Low Forward Voltage Drop
- High Surge Capability
- 4600 Watts Peak Pulse Power per Line ( $t_p = 10/1000\mu\text{s}$ )
- Meets ISO7637-2 Surge Specification (Varied by Test Condition)
- Meets MSL Level 1, Per J-STD-020, LF Maximum Peak of  $245^\circ\text{C}$
- Available in Multiple Voltages
- RoHS Compliant
- REACH Compliant

### MECHANICAL CHARACTERISTICS

- Case: DO-218AB Package
- Terminals: Matte Tin Plated Leads, Solderable Per J-STD-002 and JESD 22-B102
- Approximate Weight: 2.7 grams
- Solder Reflow Temperature -  $260^\circ\text{C}$  for 10 seconds at terminals
- 24mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0
- Polarity: Heatsink is Anode

#### MAXIMUM RATINGS @ $25^\circ\text{C}$ Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Operating Junction Temperature	$T_j$	-55 to 175	$^\circ\text{C}$
Storage Temperature	$T_{\text{STG}}$	-55 to 175	$^\circ\text{C}$
Peak Pulse Power Dissipation ( $t_p = 10/1000\mu\text{s}$ )	$P_{\text{PPM}}$	4600	Watts
Peak Pulse Power Dissipation ( $t_p = 10/10000\mu\text{s}$ )	$P_{\text{PPM}}$	3600	Watts
Peak Forward Surge Current, 8.3ms single half sinewave	$I_{\text{FSM}}$	600	Amps
Power Dissipation on Infinite Heatsink, $T_c = 25^\circ\text{C}$ (Figure 2)	$P_D$	6.0	Watts
Typical Thermal Resistance, Junction to Case	$R_{\theta\text{JC}}$	0.95	$^\circ\text{C}/\text{W}$

## TYPICAL DEVICE CHARACTERISTICS

## ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

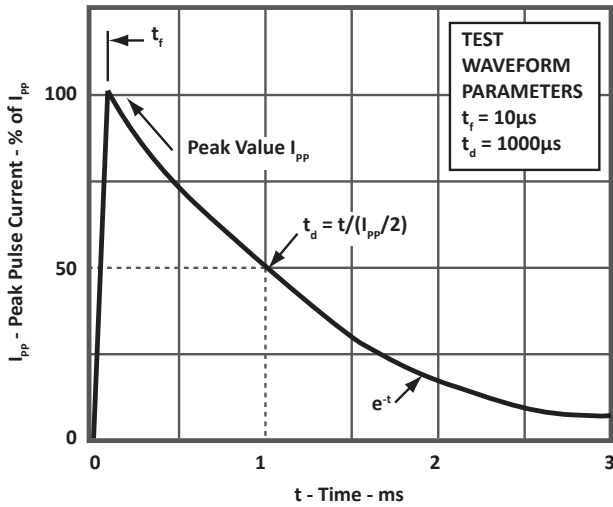
PART NUMBER (Note 1)	REVERSE STAND-OFF VOLTAGE  $V_{RWM}$ VOLTS	BREAKDOWN VOLTAGE  $V_{(BR)}$ @ $I_T$ VOLTS		TEST CURRENT  @ $I_T$ mA	MAXIMUM CLAMPING VOLTAGE (Fig. 1) @ $I_p$ $V_c$ VOLTS	MAXIMUM REVERSE SURGE CURRENT  @ $I_{PP}$ AMPS	MAXIMUM REVERSE LEAKAGE CURRENT @ $V_{RWM}$ $I_R$ $\mu A$	MAXIMUM REVERSE LEAKAGE CURRENT @ $V_{RWM}$ 175°C $I_R$ $\mu A$
		MIN	MAX					
SM6S14A	14.0	15.6	17.2	5.0	23.2	198	10	150
SM6S15A	15.0	16.7	18.5	5.0	24.4	189	10	150
SM6S16A	16.0	17.8	19.7	5.0	26.0	177	10	150
SM6S17A	17.0	18.9	20.9	5.0	27.6	167	10	150
SM6S18A	18.0	20.0	22.1	5.0	29.2	158	10	150
SM6S20A	20.0	22.2	24.5	5.0	32.4	142	10	150
SM6S22A	22.0	24.4	26.9	5.0	35.5	130	10	150
SM6S24A	24.0	26.7	29.5	5.0	38.9	118	10	150
SM6S26A	26.0	28.9	31.9	5.0	42.1	109	10	150
SM6S28A	28.0	31.1	34.4	5.0	45.4	101	10	150
SM6S30A	30.0	33.3	36.8	5.0	48.4	95	10	150
SM6S33A	33.0	36.7	40.6	5.0	53.3	86	10	150
SM6S36A	36.0	40.0	44.2	5.0	58.1	79	10	150

## NOTES

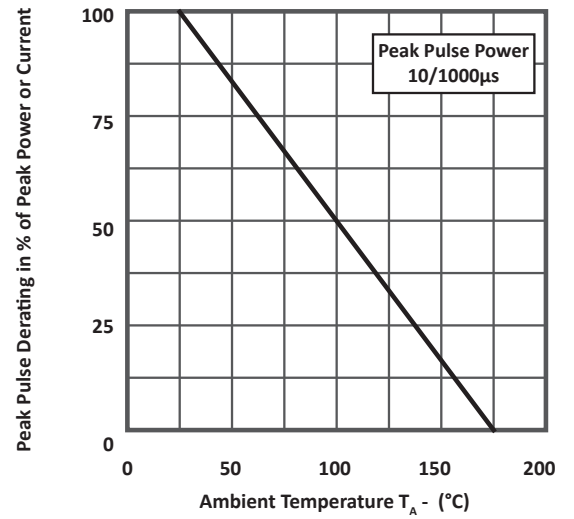
1. For all types, maximum VF = 1.9V at IF 100A, measured on 8.3ms single half-sine wave or equivalent square wave. Maximum duty cycle = 4 pulses per minute.

**TYPICAL DEVICE CHARACTERISTICS**

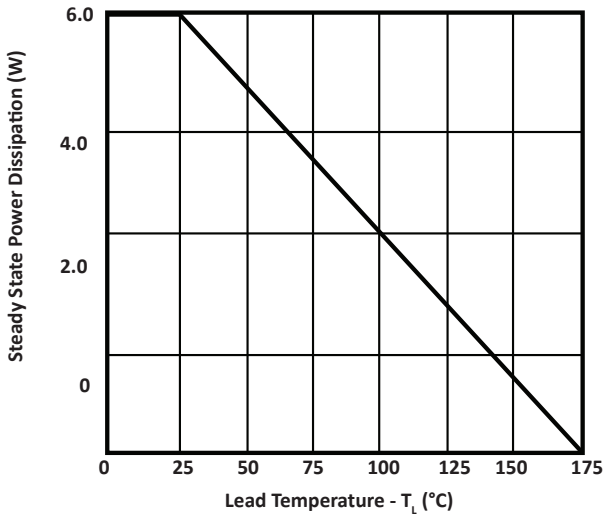
**FIGURE 1  
PULSE WAVEFORM**



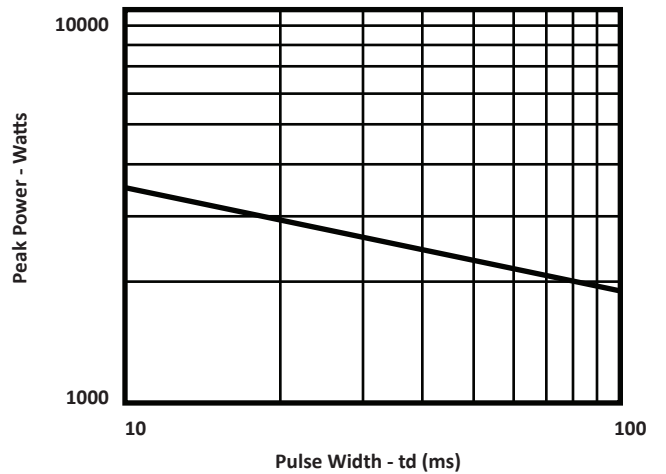
**FIGURE 2  
PULSE DERATING CURVE**



**FIGURE 3  
STEADY STATE POWER DERATING CURVE**



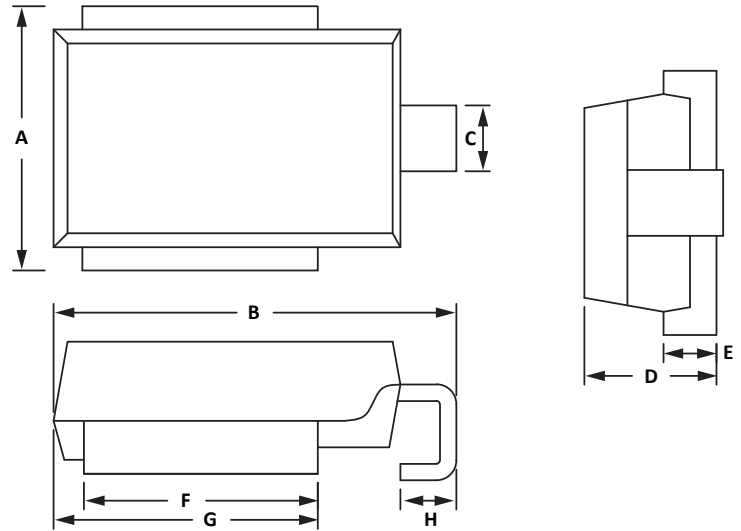
**FIGURE 4  
PEAK PULSE POWER RATING CURVE**



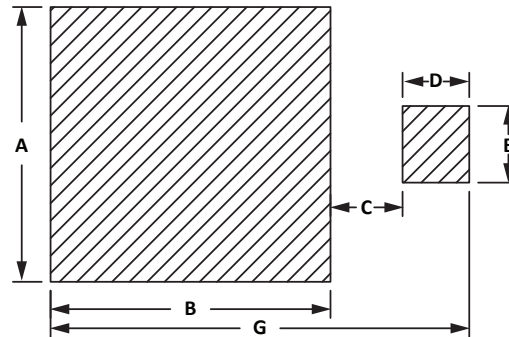
## PACKAGE INFORMATION

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.50	10.50	0.374	0.413
B	15.00	16.00	0.591	0.630
C	2.30	2.90	0.090	0.114
D	4.80	5.20	0.189	0.205
E	1.95	2.11	0.077	0.083
F	8.70	9.30	0.342	0.366
G	9.70	10.30	0.382	0.405
H	1.70	2.70	0.067	0.106

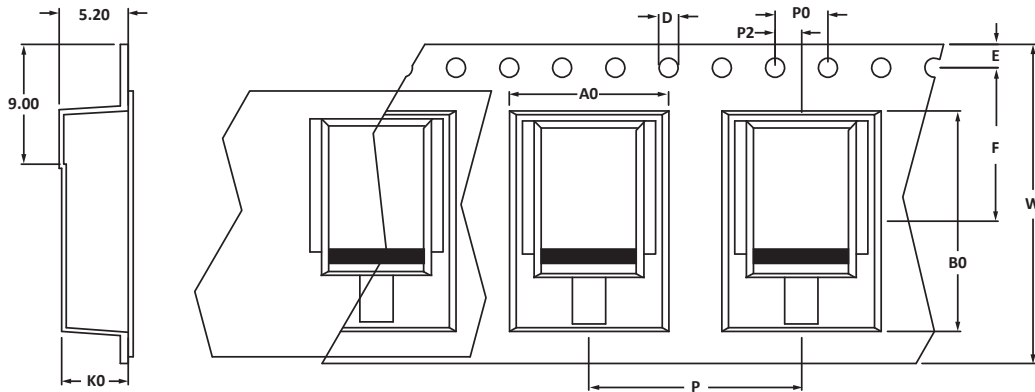
**NOTES**  
1. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT DIMENSIONS		
DIM	MILLIMETERS	INCHES
	NOM	NOM
A	11.0	0.433
B	9.5	0.374
C	3.3	0.130
D	3.0	0.118
E	3.5	0.137
G	15.8	0.662



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P
330mm (13")	24mm	12.00 ± 0.10	16.60 ± 0.10	5.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	11.55 ± 0.05	24.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	16.00 ± 0.10

## NOTES

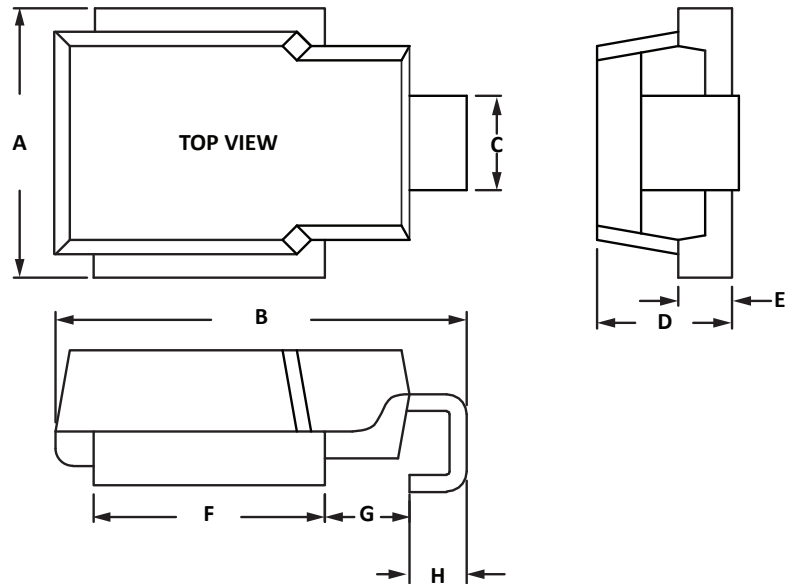
- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Marking on Part - part number, date code, logo and polarity band.

## PACKAGE INFORMATION

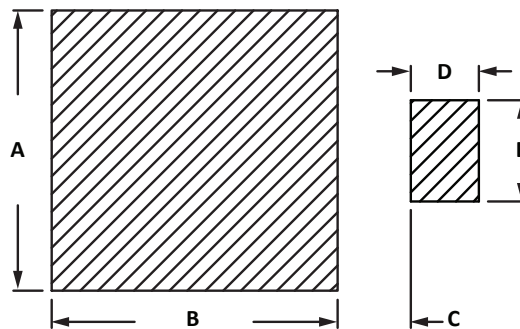
## ALTERNATE PACKAGE

OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.50	10.50	0.374	0.413
B	15.00	16.00	0.592	0.628
C	2.40	3.00	0.094	0.118
D	4.70	5.10	0.185	0.201
E	1.90	2.10	0.075	0.083
F	8.50	9.10	0.335	0.358
G	3.55	3.75	0.139	0.147
H	1.95	2.20	0.076	0.086

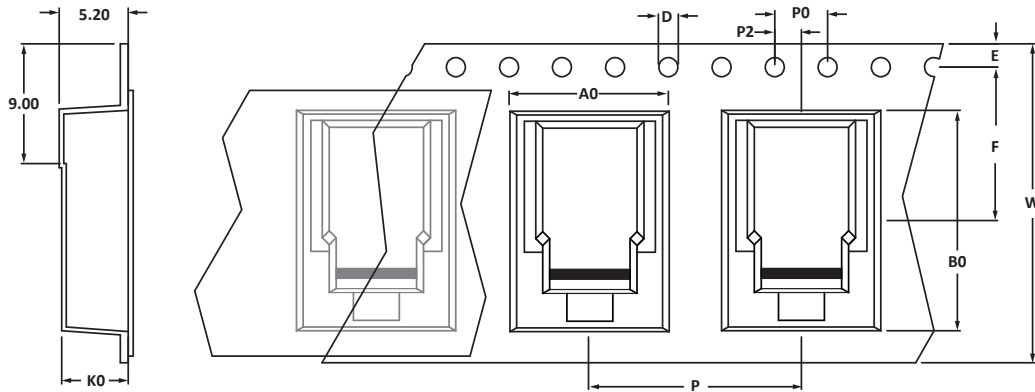
**NOTES**  
1. Dimensions are exclusive of mold flash and metal burrs.



PAD LAYOUT				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.49	10.65	0.413	0.419
B	10.69	10.85	0.421	0.427
C	2.69	2.85	0.106	0.112
D	2.49	2.65	0.098	0.104
E	3.73	3.88	0.147	0.153



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P
330mm (13")	24mm	12.00 ± 0.10	16.60 ± 0.10	5.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	11.55 ± 0.05	24.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	16.00 ± 0.10

## NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Marking on Part - part number, date code, logo and polarity band.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SM6Sxx	N/A	-T500	500	13"	N/A
SM6Sxx	N/A	-T750	750	13"	N/A

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

## COMPANY INFORMATION

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### 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 an ISO 9001 certified company.

### CONTACT US

#### Corporate Headquarters

2929 South Fair Lane  
Tempe, Arizona 85282  
USA

#### By Telephone

General: 602-431-8101  
Sales: & Marketing: 602-414-5109  
Customer Service: 602-414-5114  
Product Technical Support: 602-414-5107

#### By Fax

General: 602-431-2288

#### By E-mail:

Asia Sales: [asiasales@protekdevices.com](mailto:asiasales@protekdevices.com)  
Europe Sales: [europesales@protekdevices.com](mailto:europesales@protekdevices.com)  
U.S. Sales: [ussales@protekdevices.com](mailto:ussales@protekdevices.com)  
Distributor Sales: [distysales@protekdevices.com](mailto:distysales@protekdevices.com)  
Customer Service: [service@protekdevices.com](mailto:service@protekdevices.com)  
Technical Support: [support@protekdevices.com](mailto:support@protekdevices.com)

#### ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19  
Zervex  
Singapore - 408538  
Tel: +65-67488312  
Fax: +65-67488313

#### Web

[www.protekdevices.com](http://www.protekdevices.com)

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