

**BIDIRECTIONAL MONOLITHIC TVS DIODE ARRAY**

**APPLICATIONS**

- RS-232, RS-422 & RS-423 Data Lines
- Microprocessor Based Equipment
- Controller & Monitoring Systems
- Portable Electronics

**FEATURES**

- IEC 1000-4-2, -4 & -5 Industry Requirements
- 300 Watts Peak Pulse Power Dissipation (8/20  $\mu$ s)
- ESD Protection > 40 kilovolts
- Available in 4 Voltage Types Ranging from 5.0V to 24V
- Bidirectional Monolithic Design
- UL 94V-0 Flammability Classification

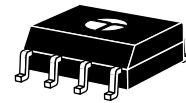
**DESCRIPTION**

The SMDAxxCN-5 family is a series of bidirectional, surface mount, monolithic, silicon transient voltage suppressor (TVS) arrays designed for use in applications which require multiple line protection where space is at a premium. This series provides board level ESD and EFT protection to I/O ports, TTL and MOS bus lines in accordance with IEC 1000-4-2, -4, -5 and European standard EN50082 and EN61000-4.

The SMDAxxCN-5 series has a peak pulse power rating ( $P_{PP}$ ) of 300 Watts for an 8/20  $\mu$ s waveshape. This device can be used to protect up to five (5) line pairs.

MAXIMUM RATINGS	
$P_{PP}$ @ 25°C (See Figure 1)	300 Watts, 8/20 $\mu$ s Waveshape
Operating & Storage Temperature	-55° to +150°C
Repetition Rate (Duty Cycle)	0.01%
$t_{Clamping}$ (0 Volts to $V_{(BR)}$ Min.)	Bidirectional: < 10 x 10 <sup>-9</sup> seconds
MECHANICAL CHARACTERISTICS	
Package	Molded SO-8 Surface Mount Package
Packaging	Tube or 12mm Tape per EIA 481
Approximate Weight	0.1 grams
Device Markings	Logo & Marking Code
Miscellaneous	Pin No. 1 Indicated by Dot on Top of Package

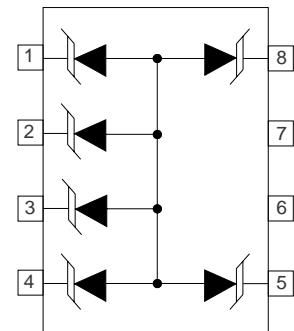
**IEC 1000-4 COMPATIBLE**



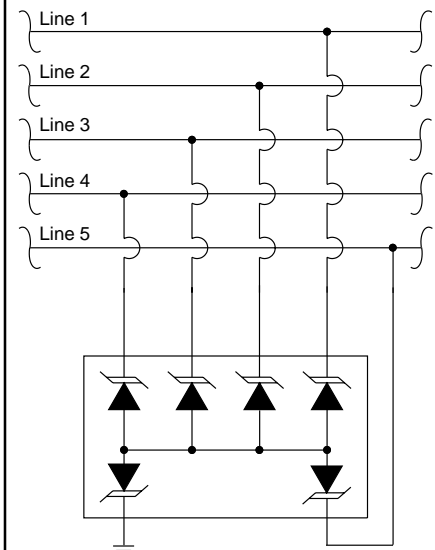
**SO-8 PACKAGE**

**CIRCUIT DIAGRAM**

SMDA05CN-5  
 SMDA12CN-5  
 SMDA15CN-5  
 SMDA24CN-5



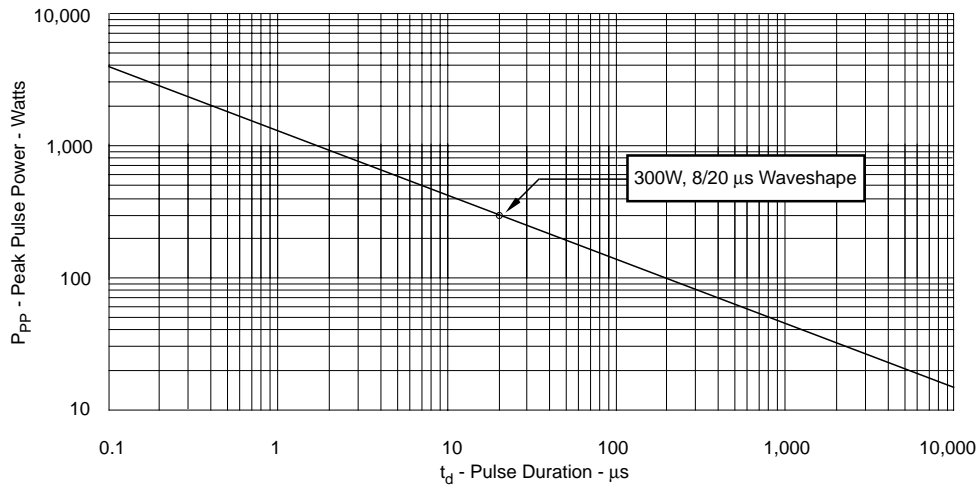
**TYPICAL DATA LINE APPLICATION**



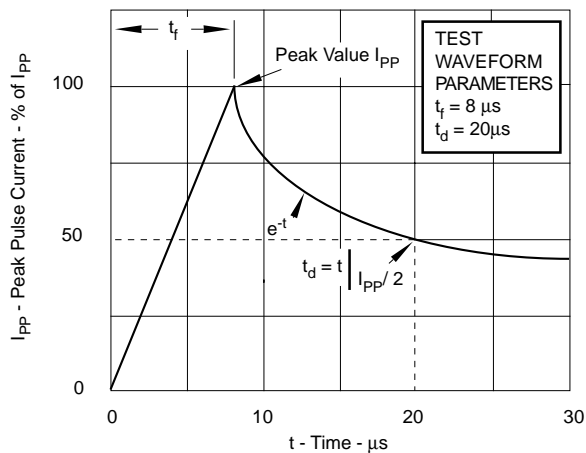
# ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

PROTEK PART NUMBER	DEVICE MARKING CODE	RATED STAND-OFF VOLTAGE $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1 mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_p = 1 A$ $V_C$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ $I_p = 5 A$ $V_C$ VOLTS	MAXIMUM LEAKAGE CURRENT @ $V_{WM}$ $I_D$ $\mu A$	MAXIMUM CAPACITANCE @ 0V, 1 MHz C pF	TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $\ominus V_{(BR)}$ mV/°C
SMDA05CN-5	TEB	5.0	6.0	9.8	11.0	10	350	6
SMDA12CN-5	TED	12.0	13.4	19.0	24.0	1	150	18
SMDA15CN-5	TEF	15.0	16.7	24.0	30.0	1	75	20
SMDA24CN-5	TEH	24.0	26.7	43.0	55.0	1	63	30

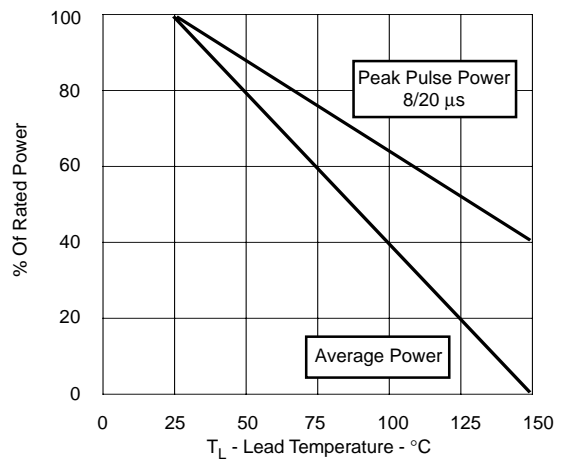
**FIGURE 1  
PEAK PULSE POWER VS PULSE TIME**



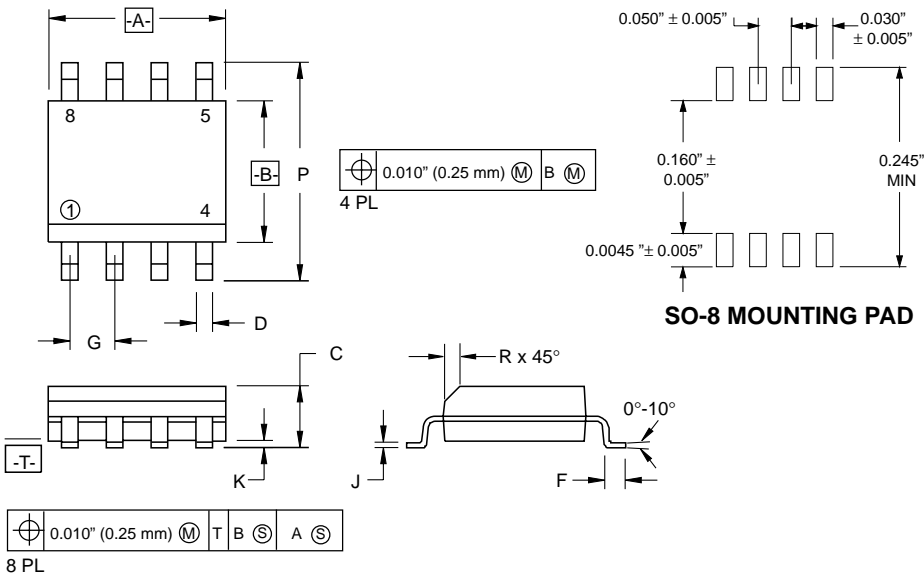
**FIGURE 2  
PULSE WAVE FORM**



**FIGURE 3  
POWER DERATING CURVE**



## SO-8 PACKAGE OUTLINE



## SO-8 PACKAGE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.250	0.016	0.049
G	1.27 BSC	1.27 BSC	0.05 BSC	0.05 BSC
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.78	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

### NOTES:

- T - = Seating Plane
- Dimension "A" is Datum.
- Dimension "A" and "B" do not include mold protusion.
- Maximum mold protusion is 0.15" (0.006 mm) per side.
- Dimensioning and tolerances per ANSI Y14.5M, 1982.