TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	T_L	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	500	Watts

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	MAXIMUM CAPACITANCE @0V, 1MHz C pF
SMDA05CM	REB	5.0	6.0	9.8	19.0V @ 30.0A	100	350
SMDA08CM	REC	8.0	8.5	13.4	23.7V @ 24.0A	10	300
SMDA12CM	RED	12.0	13.4	19.0	29.2V @ 20.0A	1	150
SMDA15CM	REF	15.0	16.7	24.0	31.1V @ 18.0A	1	100
SMDA24CM	REH	24.0	26.7	43.0	45.0V @ 13.0A	1	63

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

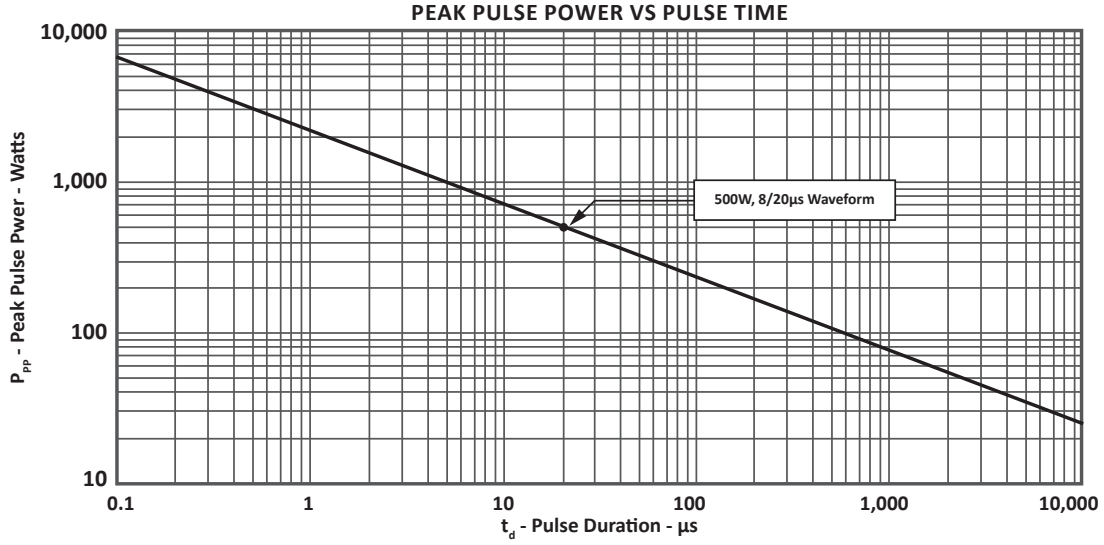


FIGURE 2
PULSE WAVE FORM

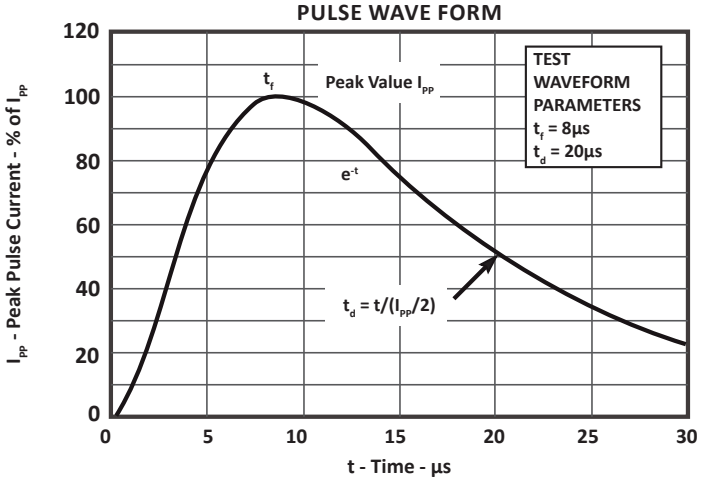
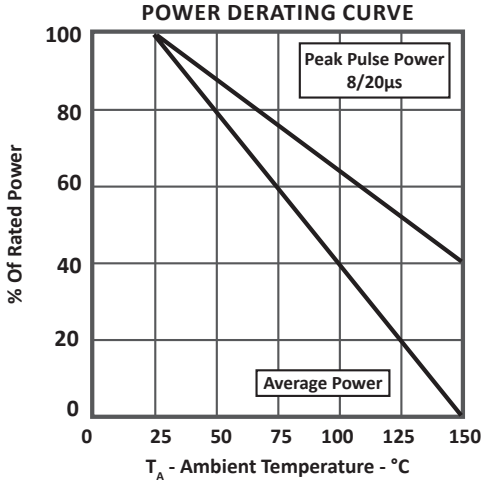


FIGURE 3
POWER DERATING CURVE



APPLICATION INFORMATION

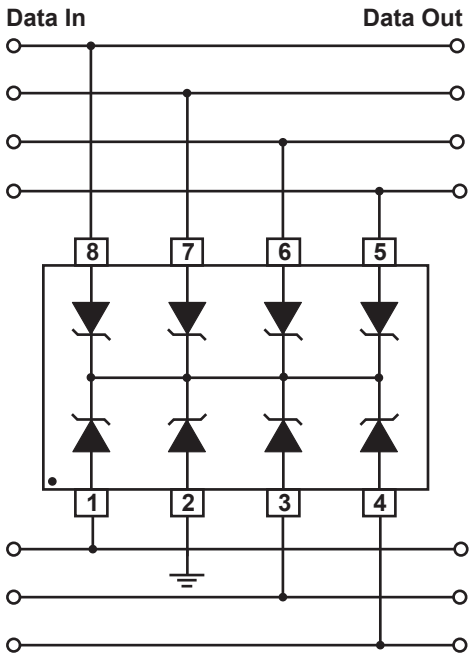


FIGURE 1 - UNIDIRECTIONAL COMMON-MODE PROTECTION

A SMDAxxCM can protect up to 7 I/O lines. Each, a bidirectional device, can be used on the data lines with signals that are ac in nature. i.e. their amplitude being positive and negative with respect to ground.

The standoff voltage (V_{WM}) and breakdown voltage (B_{VR}) specifications apply to the Differential voltage applied across any two pins. Taking the SMDA24CM as an example for further discussion, it being a 24V rated device it can handle ±12V between any two lines. The SMDA24CM is connected as follows:

- Pins 1,3,4,5,6,7,8 are connected to the lines that need protection.
- Pin 2 is connected to ground. (Any one pin from Pins 2,3,6 and 7 can be chosen to be the ground pin. They provide shorter path to the current within the chip.) During PCB design ensure that the Ground connection made to Pin 2 is directly to the ground plane to avoid needless parasitic inductance that can be introduced by longer PCB traces.

CIRCUIT BOARD RECOMMENDATIONS

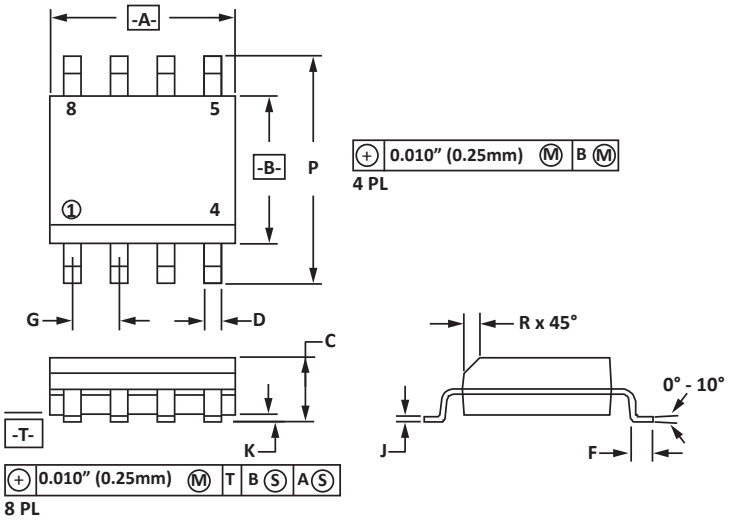
Circuit board layout is critical for electromagnetic compatibility protection. The following guidelines are recommended:

- The protection device should be placed near the input terminals or connectors, the device will divert the transient current immediately before it can be coupled into the nearby traces.
- The path length between the TVS device and the protected line should be minimized.
- All conductive loops including power and ground loops should be minimized.
- The transient current return path to ground should be kept as short as possible to reduce parasitic inductance.
- Ground planes should be used whenever possible. For multilayer PCBs, use ground vias.

SO-8 PACKAGE INFORMATION

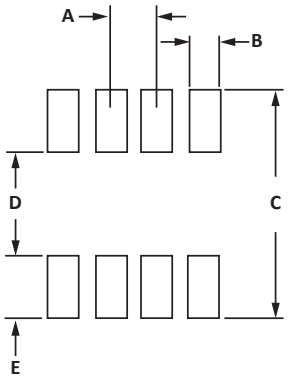
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.196
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.05 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.008
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

NOTES
1. -T- = Seating plane and datum surface.
2. Dimensions "A" and "B" are datum.
3. Dimensions "A" and "B" do not include mold protrusion.
4. Maximum mold protrusion is 0.015" (0.380mm) per side.
5. Dimensioning and tolerances per ANSI Y14.5M, 1982.
6. Dimensions are exclusive of mold flash and metal burrs.

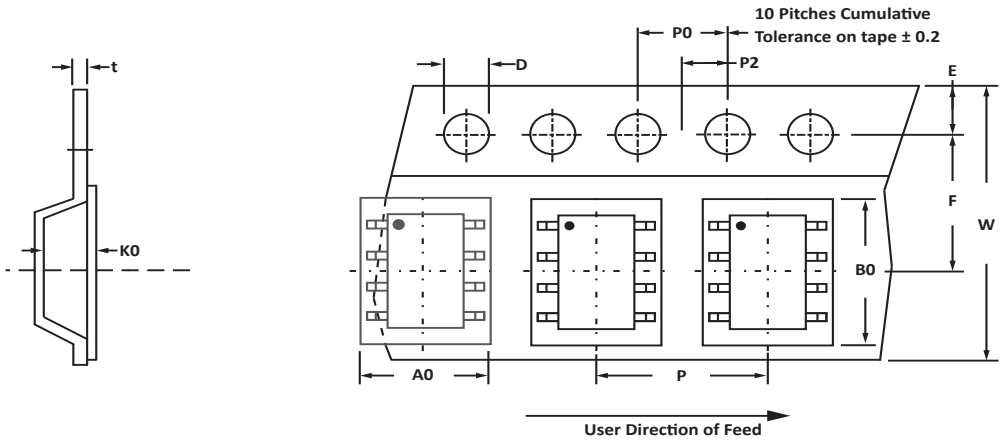


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

NOTES
1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	12mm	6.50 ± 0.10	5.40 ± 0.10	2.00 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	5.50 ± 0.05	12.00 ± 0.30	4.00 ± 0.12	2.00 ± 0.10	8.00 ± 0.10	0.25

NOTES
1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 1,000 pieces per 12mm tape.
4. Suffix - T13 = 13" Reel - 2,500 pieces per 12mm tape.
5. Bulk product shipped in tubes of 98 pieces per tube.
6. Marking on Part - marking code (see page 2), date code, logo and pin one defined by dot on top of package.

ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SMDAxxCM	-LF	-T7	1,000	7"	98
SMDAxxCM	-LF	-T13	2,500	13"	98
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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