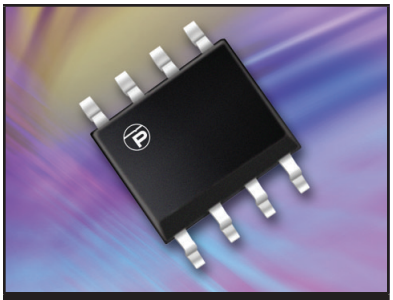
TSMDA05CM - TSMDA24CM

500 WATT MULTI-LINE TVS ARRAY



MSOP-8 PACKAGE

DESCRIPTION

The TSMDAxxCM Series are monolithic transient voltage suppressor arrays that provides board level protection for standard TTL and MOS bus line applications against the damaging effects of ESD, tertiary lightning and switching transients.

The TSMDAxxCM Series has a peak pulse power rating of 500 Watts for an 8/20µs waveshape. This device series meets the IEC 61000-4-2, IEC 61000-4-4 and IEC 61000-4-5 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 12A, 8/20µs - Level 1(Line-Gnd) & Level 2(Line-Line)
- 500 Watts Peak Pulse Power per Line (tp = 8/20µs)
- Bidirectional Configuration
- Available in Multiple Voltages Ranging from 5V to 24V
- Protects 4-7 Lines
- ESD Protection > 25 kilovolts
- Monolithic Design
- RoHS Compliant
- REACH Compliant

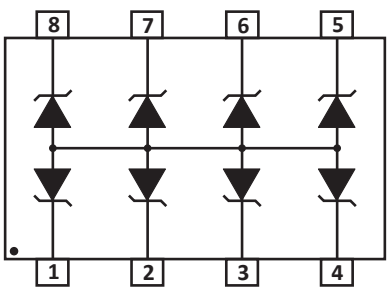
APPLICATIONS

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

MECHANICAL CHARACTERISTICS

- Molded JEDEC MSOP-8 Package
- Approximate Weight: 24 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  Pure-Tin - Sn, 100: 260-270°C
- 12mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

PIN CONFIGURATION



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
TSMDA05CM	REJ	5.0	6.0	9.8	19.0V @ 30.0A	100	350
TSMDA08CM	REK	8.0	8.5	13.4	23.7V @ 24.0A	10	300
TSMDA12CM	REL	12.0	13.4	19.0	29.2V @ 20.0A	1	150
TSMDA15CM	REM	15.0	16.7	24.0	31.1V @ 18.0A	1	100
TSMDA24CM	REN	24.0	26.7	43.0	45.0V @ 13.0A	1	63

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

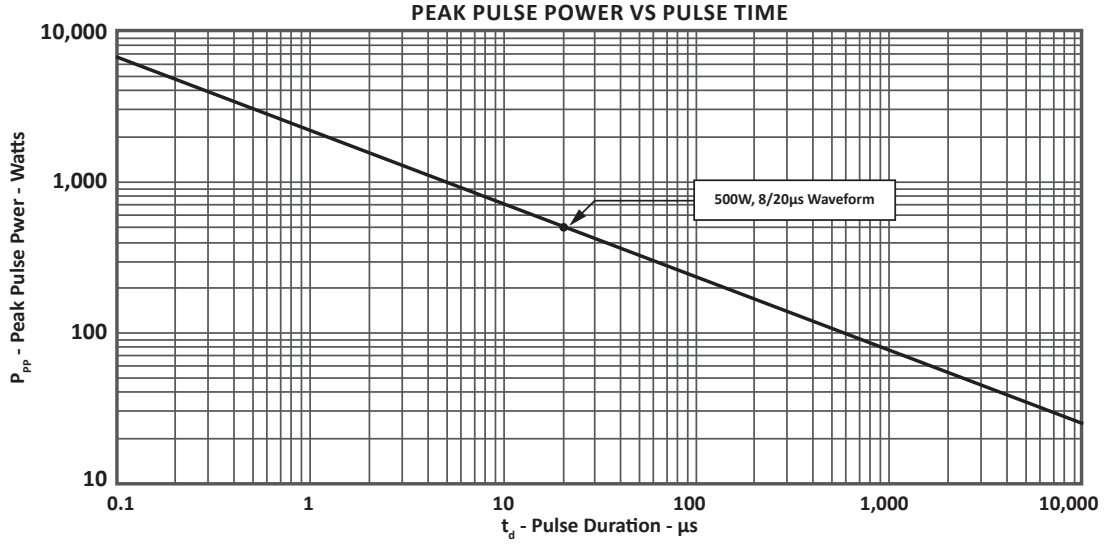


FIGURE 2
PULSE WAVE FORM

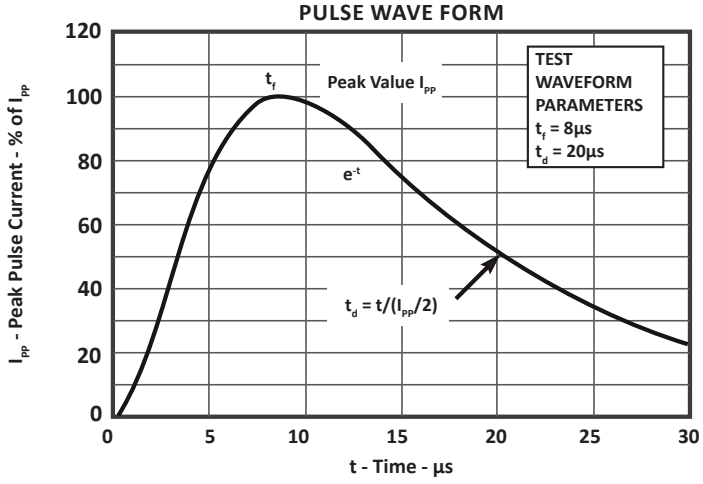
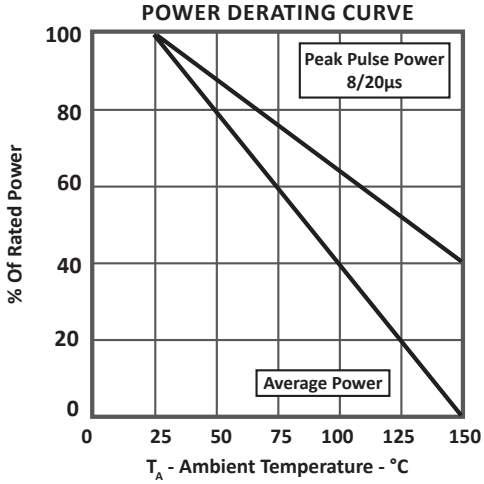


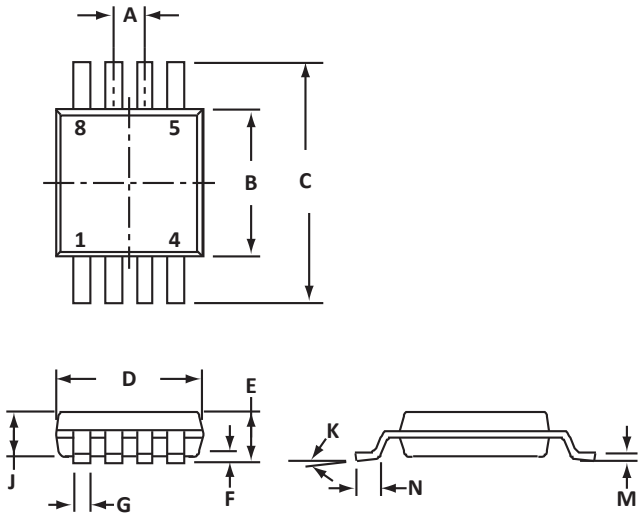
FIGURE 3
POWER DERATING CURVE



MSOP-8 PACKAGE INFORMATION

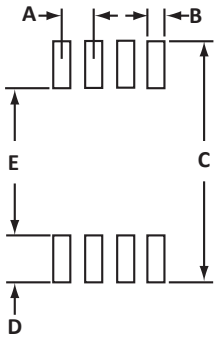
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.65 BSC		0.026 BSC	
B	2.90	3.10	0.114	0.122
C	4.80	5.00	0.189	0.197
D	2.90	3.10	0.114	0.122
E	-	1.10	-	0.044
F	0.05	0.25	0.002	0.010
G	0.16	0.32	0.006	0.013
J	-	0.95	-	0.037
K	0°	6°	0°	6°
M	0.09	0.24	0.004	0.009
N	0.45	0.55	0.018	0.022

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.

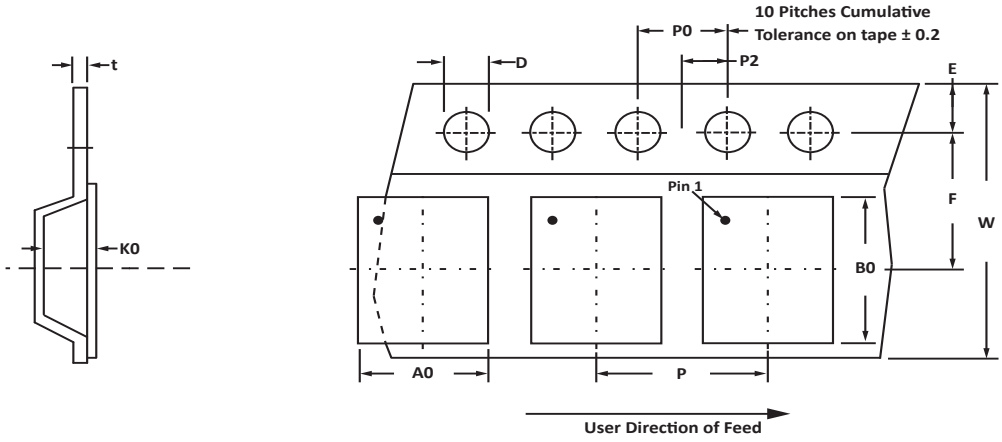


PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.66 BSC		0.026 BSC	
B	0.41	0.51	0.016	0.020
C	5.84	-	0.230	-
D	1.02	1.27	0.040	0.050
E	3.56	-	0.140	-

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	5.30 ± 0.20	3.40 ± 0.10	1.40 ± 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. Bulk product shipped in tubes of 100 pieces per tube.
5. Marking on Part - marking code (see page 2), date code, logo and pin one defined by dot on top of package.

Package outline, pad layout and tape specifications per document number 06046.R1 2/11.

ORDERING INFORMATION					
BASE PART NUMBER (xx = Voltage)	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
TSMDAxxCM	-LF	-T7	1,000	7"	100

COMPANY INFORMATION

COMPANY PROFILE

ProTek Devices, based in Tempe, Arizona USA, is a manufacturer of Transient Voltage Suppression (TVS) products designed specifically for the protection of electronic systems from the effects of lightning, Electrostatic Discharge (ESD), Nuclear Electromagnetic Pulse (NEMP), inductive switching and EMI/RFI. With over 25 years of engineering and manufacturing experience, ProTek designs TVS devices that provide application specific protection solutions for all electronic equipment/systems.

ProTek Devices Analog Products Division, also manufactures analog interface, control, RF and power management products.

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