

800 WATT MULTI-LINE TVS ARRAY



DESCRIPTION

The SMDBxx and SMDBxxC Series are multi-line 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 SMDB Series has a peak pulse power rating of 800 Watts for an 8/20 μ s 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): 24A, 8/20 μ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 800 Watts Peak Pulse Power per Line (tp = 8/20 μ s)
- Unidirectional and Bidirectional Configurations
- Available in Multiple Voltages Ranging from 5V to 24V
- Protects up to Four Lines
- RoHS Compliant
- REACH Compliant

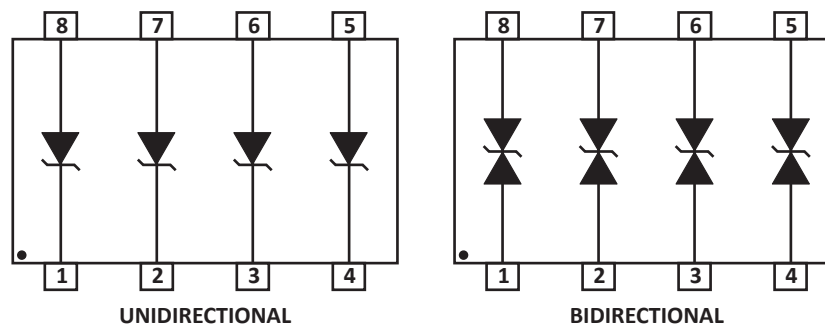
APPLICATIONS

- RS-232, RS-422 & RS-423 Data Lines
- SMART Phones
- Audio/Video Inputs
- Portable Electronics
- Wireless Network Systems
- Medical Electronics

MECHANICAL CHARACTERISTICS

- Molded JEDEC SO-8 Package
- Approximate Weight: 70 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 CONFIGURATIONS



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}	800	Watts
Forward Voltage @ 100mA, 300µs - Square Wave (See Note 1)	V_F	1.5	Volts

NOTE

1. Only applies to unidirectional devices.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE
		V_{WM} VOLTS	@1mA $V_{(BR)}$ VOLTS	@ $I_p = 1A$ V_C VOLTS	@8/20µs $V_C @ I_{PP}$	@ V_{WM} I_D µA	@0V, 1MHz C pF
SMDB05	PDA	5.0	6.0	9.8	24.6V @ 45.0A	25	880
SMDB05C	PDB	5.0	6.0	9.8	24.6V @ 45.0A	25	493
SMDB08	PDJ	8.0	8.5	13.4	25.5V @ 40.0A	10	800
SMDB08C	PDK	8.0	8.5	13.4	25.5V @ 40.0A	10	450
SMDB12	PDC	12.0	13.3	19.0	32.9V @ 34.0A	2	440
SMDB12C	PDD	12.0	13.3	19.0	32.9V @ 34.0A	2	248
SMDB15	PDE	15.0	16.7	24.0	38.5V @ 27.0A	2	400
SMDB15C	PDF	15.0	16.7	24.0	38.5V @ 27.0A	2	225
SMDB24	PDG	24.0	26.7	43.0	48.5V @ 20.0A	2	275
SMDB24C	PDH	24.0	26.7	43.0	48.5V @ 20.0A	2	155

NOTES

1. Part numbers with a "C" suffix are bidirectional devices, i.e., SMDB05C.

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

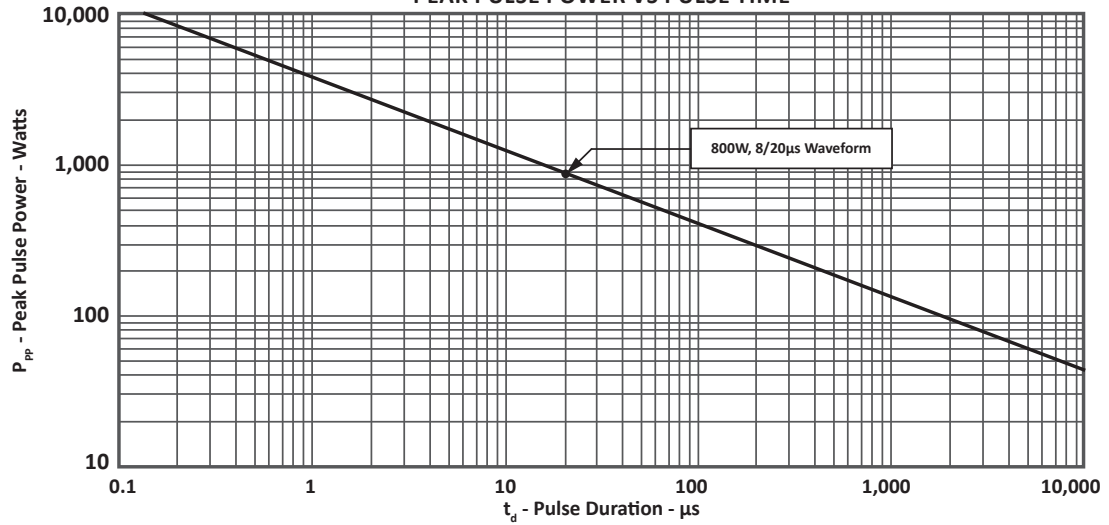


FIGURE 2
PULSE WAVE FORM

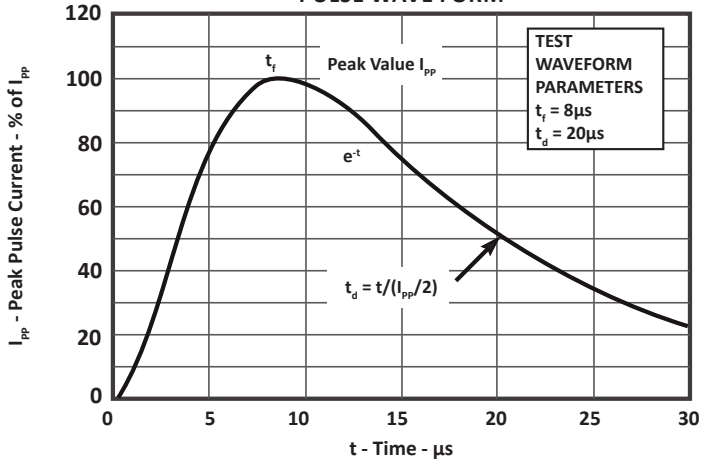
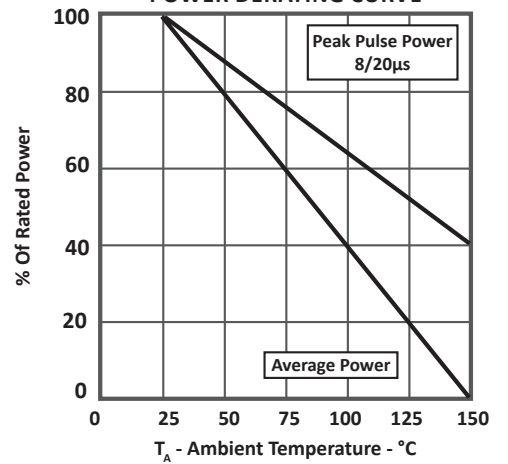


FIGURE 3
POWER DERATING CURVE



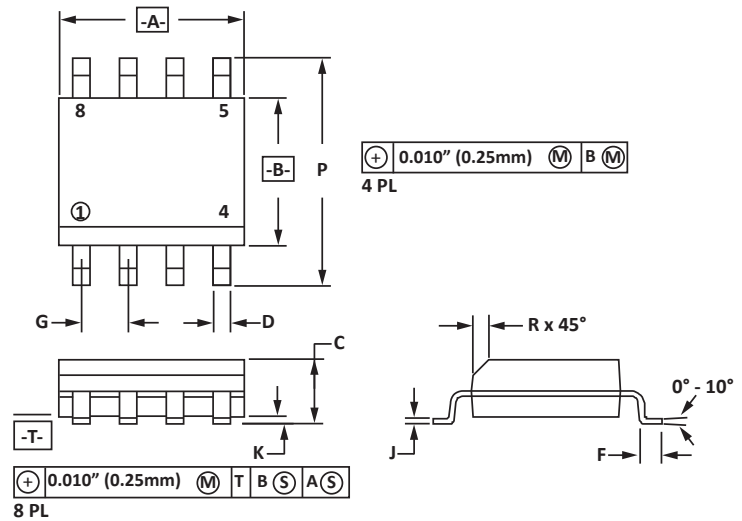
SO-8 PACKAGE INFORMATION

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

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

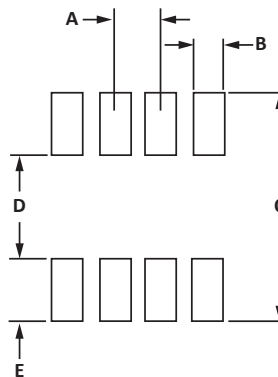


PAD LAYOUT DIMENSIONS

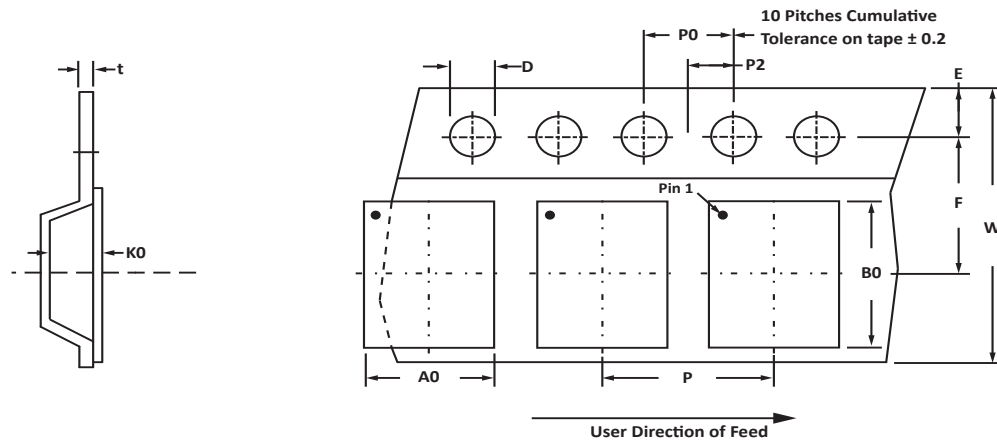
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

NOTES

- 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	4.00 ± 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.

Package outline, pad layout and tape specifications per document number 06011.R4 8/10.

ORDERING INFORMATION

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

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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