

## 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 $\mu$ 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 $\mu$ s - Level 2(Line-Gnd) & Level 3(Line-Line)
- 800 Watts Peak Pulse Power per Line (tp = 8/20 $\mu$ s)
- Unidirectional and Bidirectional Configurations
- Available in Multiple Voltages Ranging from 5V to 24V
- Protects up to Four Lines
- RoHS Compliant
- REACH Compliant

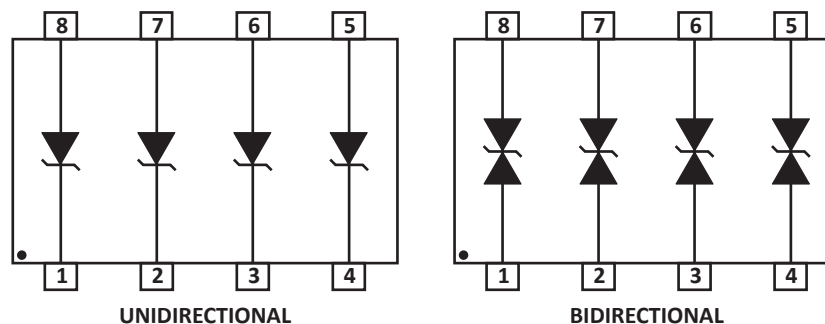
### APPLICATIONS

- 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**

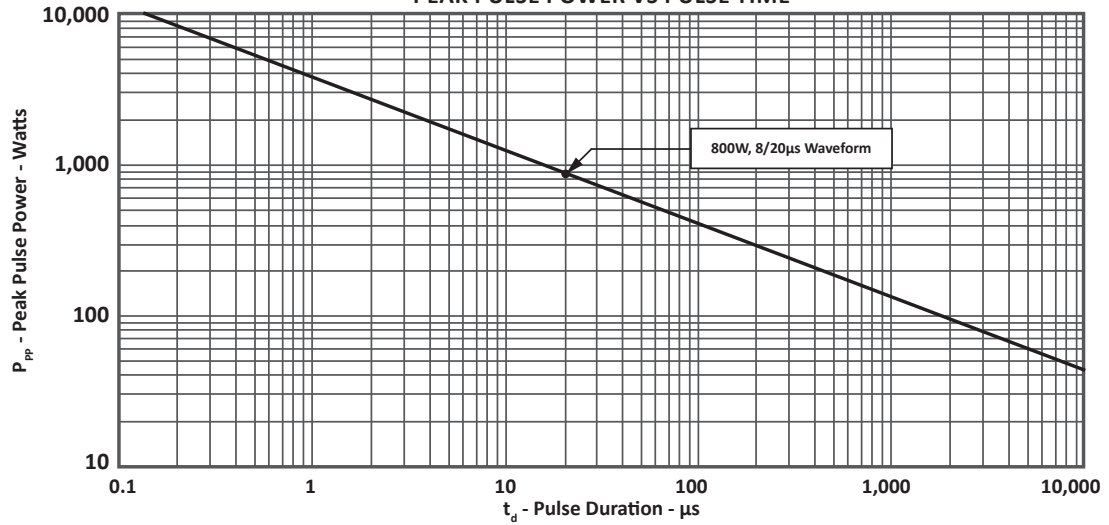
PART NUMBER (Note 1)	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT	MAXIMUM CAPACITANCE
		$V_{WM}$ VOLTS	@1mA $V_{(BR)}$ VOLTS	@ $I_p = 1A$ $V_C$ VOLTS	@8/20µS $V_C @ I_{PP}$	@ $V_{WM}$ $I_D$ 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**

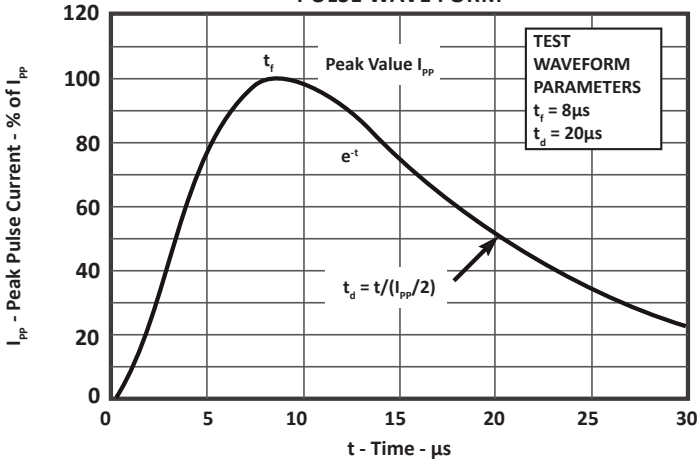
1. Part numbers with a "C" suffix are bidirectional devices, i.e., SMDB05C.

**TYPICAL DEVICE CHARACTERISTICS**

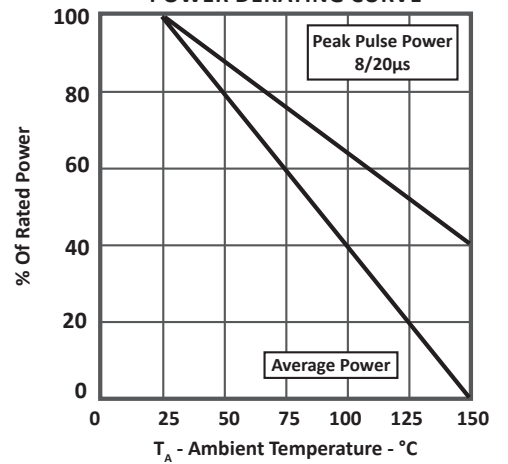
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2**  
**PULSE WAVE FORM**



**FIGURE 3**  
**POWER DERATING CURVE**



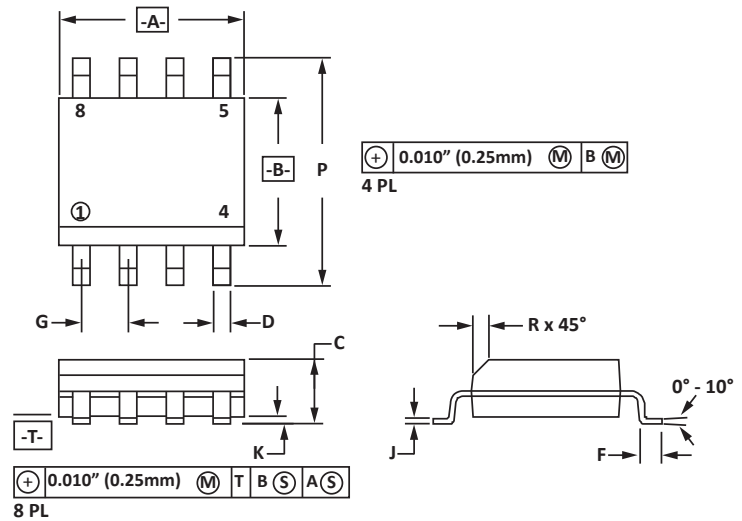
## SO-8 PACKAGE INFORMATION

## 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.

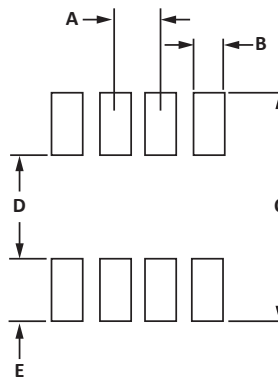


## PAD LAYOUT DIMENSIONS

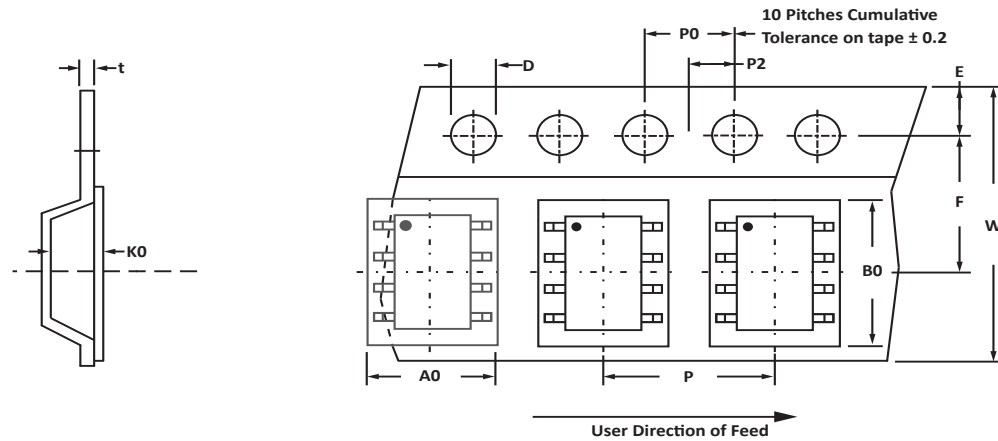
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

## 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	8.00 ± 0.10	0.25

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T7 = 7" Reel - 1,000 pieces per 12mm tape.
- Suffix - T13 = 13" Reel - 2,500 pieces per 12mm tape.
- Bulk product shipped in tubes of 98 pieces per tube.
- 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
SMDBxx/SMDBxxC	-LF	-T7	1,000	7"	98
SMDBxx/SMDBxxC	-LF	-T13	2,500	13"	98

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

## COMPANY INFORMATION

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### COMPANY PROFILE

In business more than 20 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.

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