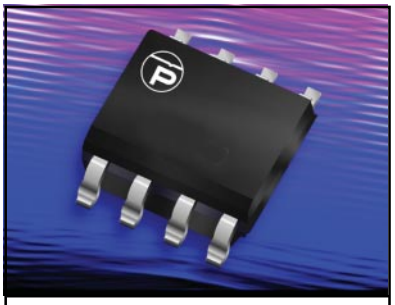
PROTEK DEVICES
Only One Name Means ProTek'Tion™

SMDB05 thru SMDB24C

STANDARD CAPACITANCE TVS ARRAY



SO-8

APPLICATIONS

✔ RS-232, RS-422 & RS-423 Data Lines
✔ Cellular Phones
✔ Audio/Video Inputs
✔ Portable Electronics
✔ Wireless Network Systems
✔ Sensor Lines

IEC COMPATIBILITY (EN61000-4)

✔ 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
✔ 61000-4-4 (EFT): 40A - 5/50ns
✔ 61000-4-5 (Surge): 24A, 8/20µs - Level 2(Line-Gnd) & Level 3(Line-Line)

FEATURES

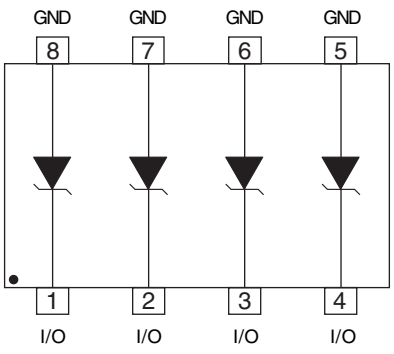
✔ 800 Watts Peak Pulse Power per Line (tp=8/20µs)
✔ Unidirectional & Bidirectional Configurations
✔ Available in Voltage Types Ranging From: 5V to 24V
✔ Protects Up to Four (4) Lines
✔ ESD Protection > 40 kilovolts
✔ RoHS Compliant on Lead-Free Versions

MECHANICAL CHARACTERISTICS

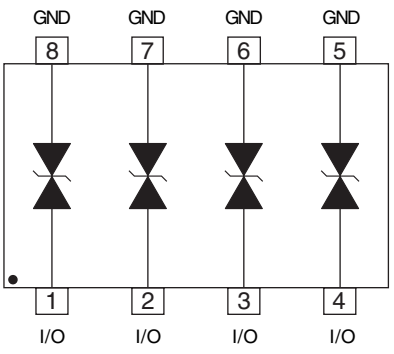
✔ Molded JEDEC SO-8 Package
✔ Weight 70 milligrams (Approximate)
✔ Available in Tin-Lead or Lead-Free Pure-Tin Plating(Annealed)
✔ Solder Reflow Temperature:
  Tin-Lead - Sn/Pb, 85/15: 240-245°C
  Pure-Tin - Sn, 100: 260-270°C
✔ Flammability rating UL 94V-0
✔ 12mm Tape and Reel Per EIA Standard 481
✔ Marking: Logo, Marking Code, Date Code & Pin One Defined By Dot on Top of Package

PIN CONFIGURATIONS

UNIDIRECTIONAL



BIDIRECTIONAL



DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (t_p = 8/20µs) - See Figure 1	P_{PP}	800	Watts
Operating Temperature	T_J	-55°C to 150°C	°C
Storage Temperature	T_{STG}	-55°C to 150°C	°C
Forward Voltage @ 100mA, 300µs - Square Wave (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 (See Note 1)	DEVICE MARKING CODE	RATED STAND-OFF VOLTAGE V_{WM} VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @ I_P = 1A V_C VOLTS	MAXIMUM CLAMPING VOLTAGE (See Fig. 2) @8/20µs V_C @ I_{PP}	MAXIMUM LEAKAGE CURRENT @V_{WM} I_D µA	MAXIMUM CAPACITANCE PER LINE @0V, 1 MHz C pF
SMDB05	PDA	5.0	6.0	9.8	24.6V @ 45.0A	200	880
SMDB05C	PDB	5.0	6.0	9.8	24.6V @45.0A	200	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	40.0	48.5V @ 20.0A	2	275
SMDB24C	PDH	24.0	26.7	40.0	48.5V @ 20.0A	2	155

Note 1: Part numbers with a “C” suffix are bidirectional devices, i.e., SMDB05C.

GRAPHS

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

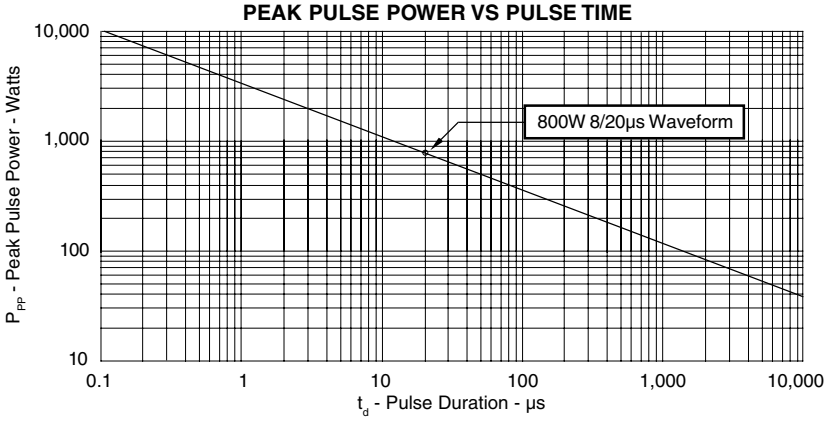


FIGURE 2
PULSE WAVE FORM

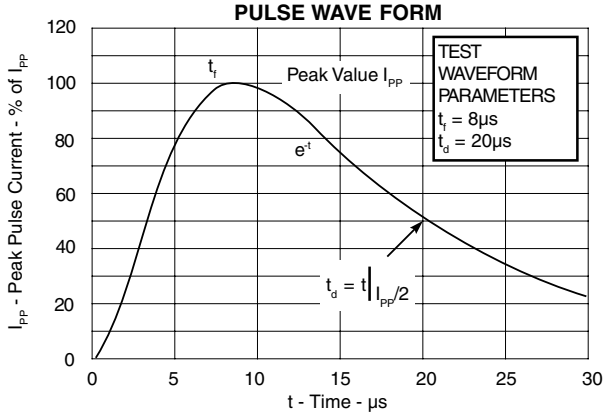
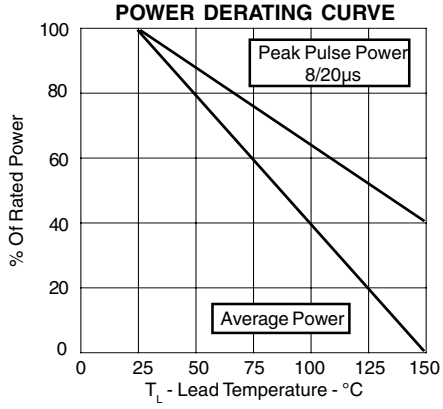
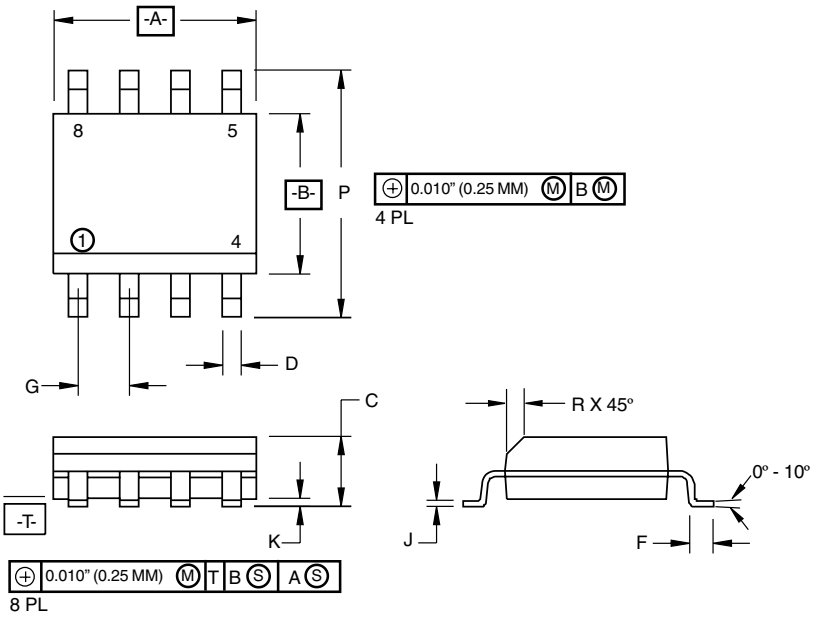


FIGURE 3
POWER DERATING CURVE

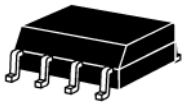


PACKAGE OUTLINE & DIMENSIONS

PACKAGE OUTLINE



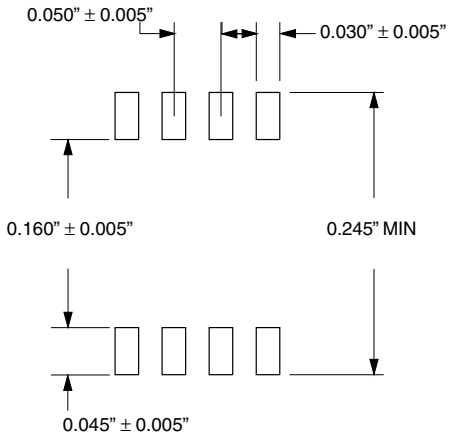
SO-8



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	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019

MOUNTING PAD



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" (0.380 mm) per side.
5. Dimensioning and tolerances per ANSI Y14.5M, 1982.
6. Dimensions are exclusive of mold flash and metal burrs.

TAPE & REEL/BULK ORDERING NOMENCLATURE

1. Surface mount product is taped and reeled in accordance with EIA-481.
2. Suffix-T7 = 7 Inch Reel - 1,000 pieces per 12mm tape, i.e., *SMDB05-T7.*
3. Suffix-T13 = 13 Inch Reel - 2,500 pieces per 12mm tape, i.e., *SMDB05-T13.*
4. Suffix - LF = Lead-Free, Pure-Tin Plating, i.e., *SMDB05-LF-T7.*
5. No Suffix = Product Shipped in Tubes of 98 pcs per Tube.

Outline & Dimensions: Rev 1 - 11/01, 06009

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ProTek Devices
2929 South Fair Lane, Tempe, AZ 85282
Tel: 602-431-8101 Fax: 602-431-2288
E-Mail: sales@protekdevices.com
Web Site: www.protekdevices.com