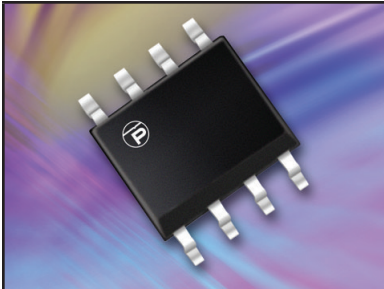


## BIDIRECTIONAL ASYMMETRICAL TVS ARRAY



SO-8 PACKAGE

### DESCRIPTION

The SMDB712C offers four individual asymmetrical devices in a SO-8 package. The device can be configured for 2 or 4 datalines depending on power level requirements. When connecting four devices in two pairs with a common ground, the total power per line increases to 1.6kW (8/20 $\mu$ s waveform). In addition, the SMDB712C complies with level 3 DO-160G Section 22, Waveform 5A, when two external 10 Ohm resistors are connected per dataline.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air  $\pm 15$ kV, Contact  $\pm 8$ kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 12A, 8/20 $\mu$ s - Level 1(Line-Gnd) & Level 2(Line-Line)
- Compliant with DO-160G, Section 22, Waveform 5A with 10 Ohm Resistors (300A/300V)
- 800 - 1600 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu$ s)
- Bidirectional Configuration: 4 Asymmetrical Devices (12V & 7V)
- RoHS Compliant
- REACH Compliant

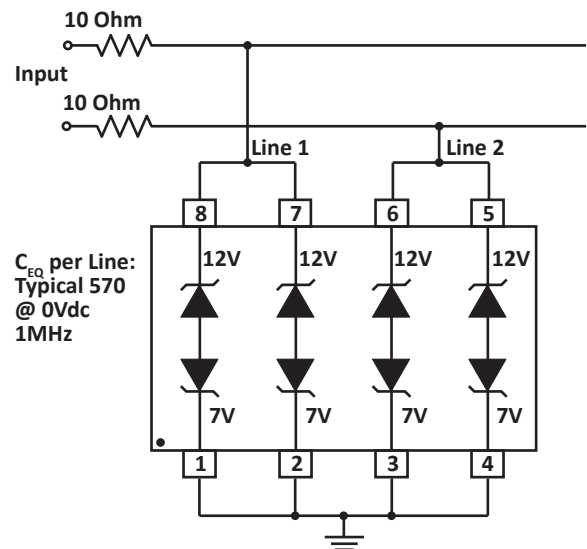
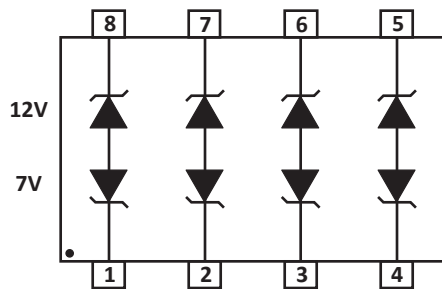
### APPLICATIONS

- RS-232, RS-422 & RS-485 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 CONFIGURATION & TYPICAL APPLICATION



**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

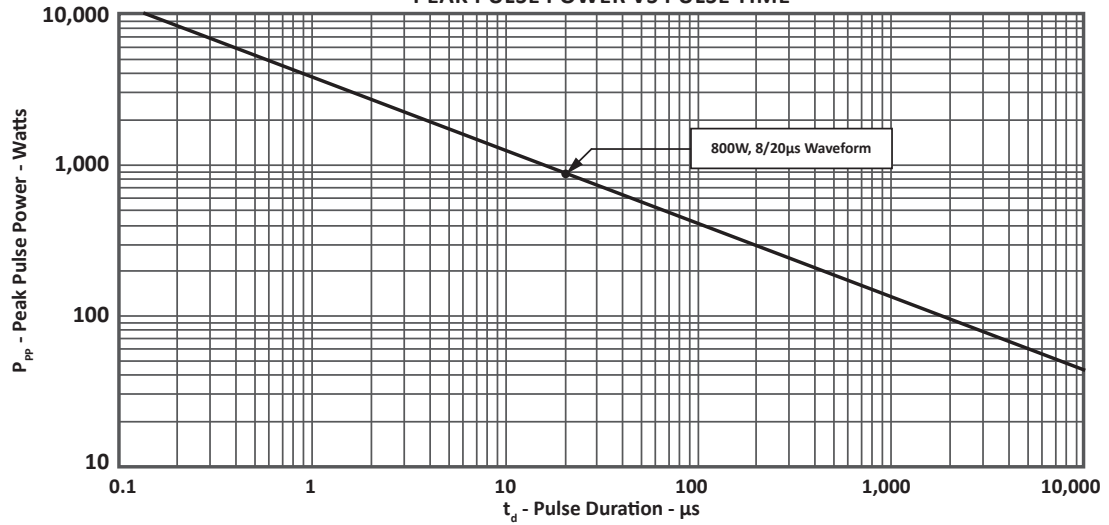
PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_L$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Peak Pulse Power ( $t_p = 8/20\mu s$ ) - See Figure 1	$P_{PP}$	800	Watts

**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

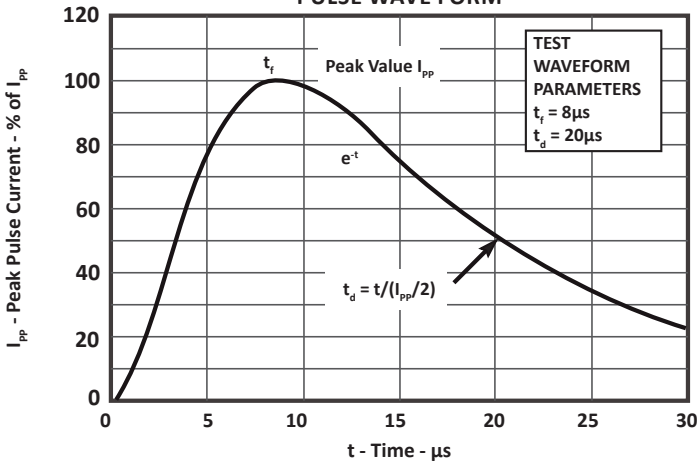
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE @1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ $I_p = 1A$ $V_C$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2) @ 8/20 $\mu s$ $V_C @ I_{PP}$	MAXIMUM LEAKAGE CURRENT @ $V_{WM}$ $I_D$ $\mu A$	MAXIMUM CAPACITANCE @0V, 1MHz C pF
7V	712C	7.0	8.5	13.4	25.5V @ 40.0A	10	284
12V		12.0	13.3	19.0	32.9V @ 34.0A	2	284

**TYPICAL DEVICE CHARACTERISTICS**

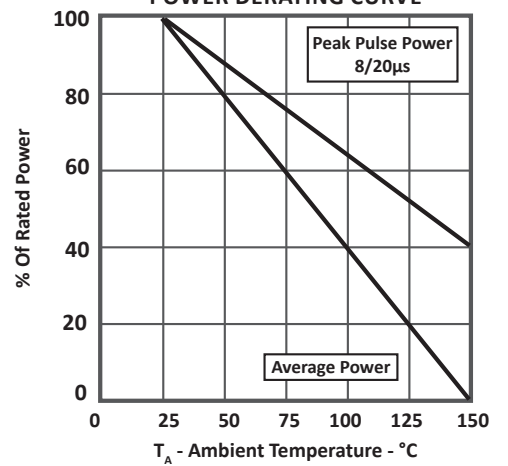
**FIGURE 1**  
**PEAK PULSE POWER VS PULSE TIME**



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



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



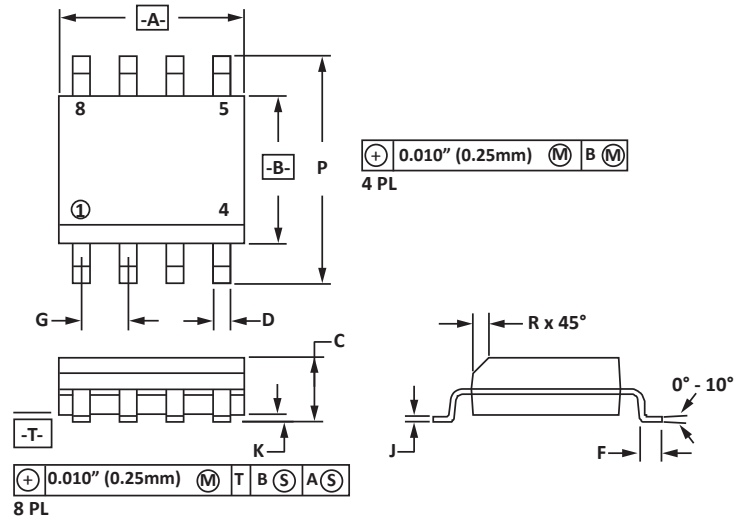
## SO-8 PACKAGE INFORMATION

## 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.

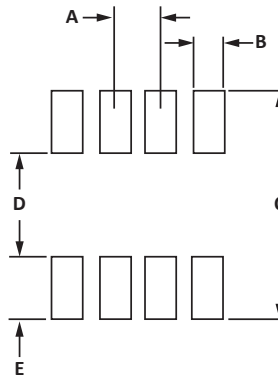


## PAD LAYOUT DIMENSIONS

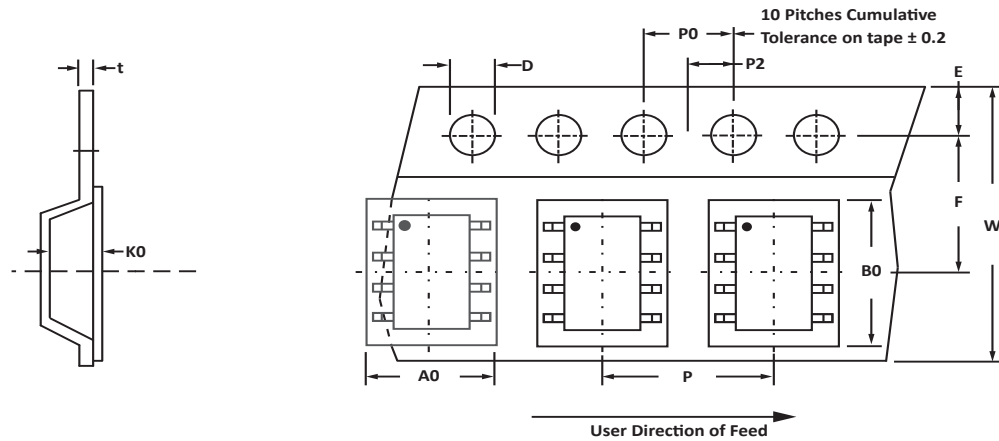
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	0.64	0.89	0.025	0.035
C	6.22	-	0.245	-
D	3.94	4.17	0.155	0.165
E	1.02	1.27	0.040	0.050

## 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	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
SMDB712C	n/a	-T7	1,000	7"	98
SMDB712C	n/A	-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 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.

### CONTACT US

#### Corporate Headquarters

2929 South Fair Lane  
Tempe, Arizona 85282  
USA

#### By Telephone

General: 602-431-8101  
Sales: & Marketing: 602-414-5109  
Customer Service: 602-414-5114  
Product Technical Support: 602-414-5107

#### By Fax

General: 602-431-2288

#### By E-mail:

Asia Sales: [asiasales@protekdevices.com](mailto:asiasales@protekdevices.com)  
Europe Sales: [europesales@protekdevices.com](mailto:europesales@protekdevices.com)  
U.S. Sales: [ussales@protekdevices.com](mailto:ussales@protekdevices.com)  
Distributor Sales: [distysales@protekdevices.com](mailto:distysales@protekdevices.com)  
Customer Service: [service@protekdevices.com](mailto:service@protekdevices.com)  
Technical Support: [support@protekdevices.com](mailto:support@protekdevices.com)

#### ProTek Devices (Asia Pacific) Pte. Ltd.

8 Ubi Road 2, #06-19  
Zervex  
Singapore - 408538  
Tel: +65-67488312  
Fax: +65-67488313

#### Web

[www.protekdevices.com](http://www.protekdevices.com)

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