

## LOW CAPACITANCE MINIATURE TVS ARRAY



### DESCRIPTION

The PRSB6.8C is a transient voltage suppressor array (TVS) designed to protect applications such as wireless telecommunication devices, SMART phones and portable electronics. The PRSB6.8C is available in a bidirectional configuration with a working voltage of 4.7V and a minimum breakdown voltage of 5.7V. This device is rated for 10 Watt peak pulse power using the 10/1000 $\mu$ s waveform, which is sufficient protection for tertiary type lightning threats at key interface locations.

The PRSB6.8C is also suited to protect data lines against ESD and EFT. This device meets the IEC 61000-4-2 and IEC 61000-4 requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device in conjunction with passive components integrated into a TVS/filter network can be used for EMI/RFI protection.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD)
- Compatible with IEC 61000-4-4 (EFT)
- 10 Watts Peak Pulse Power per Line ( $t_p = 10/1000\mu s$ )
- Bidirectional Configuration
- Protects 1 Data Line
- Low Clamping Voltage
- Easy Placement for Manufacturing
- Low Capacitance
- RoHS Compliant
- REACH Compliant

### APPLICATIONS

- Noise Suppression for Data Lines
- SMART Phones
- Portable Electronics

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2-0402 Package
- Approximate Weight: 0.8 milligrams
- Lead-Free Nickel Paladium Gold Plating
- Solder Reflow Temperature - 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### PIN CONFIGURATION



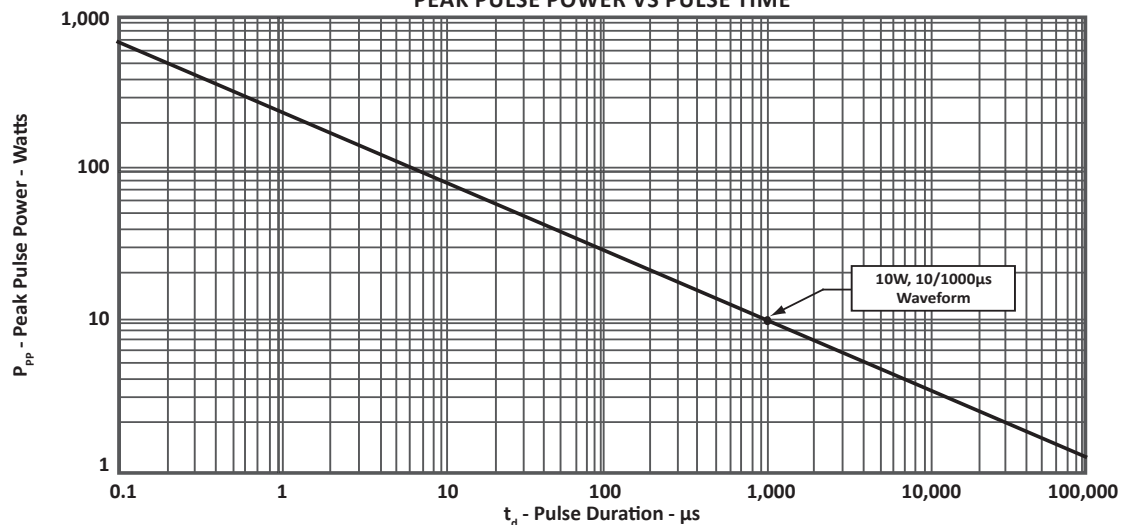
**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_{OPR}$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Junction Temperature	$T_A$	150	°C
Peak Pulse Power ( $t_p = 10/1000\mu s$ ) - See Figure 1	$P_{PP}$	10	Watts
Power Dissipation	$P$	150	mW

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

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE
		$V_{WM}$ VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ 3.5V $I_D$ $\mu A$	@ 0V, 1MHz C pF
PRSB6.8C	A	4.7	5.7	0.5	15

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



## TYPICAL DEVICE CHARACTERISTICS

FIGURE 2  
PULSE WAVEFORM

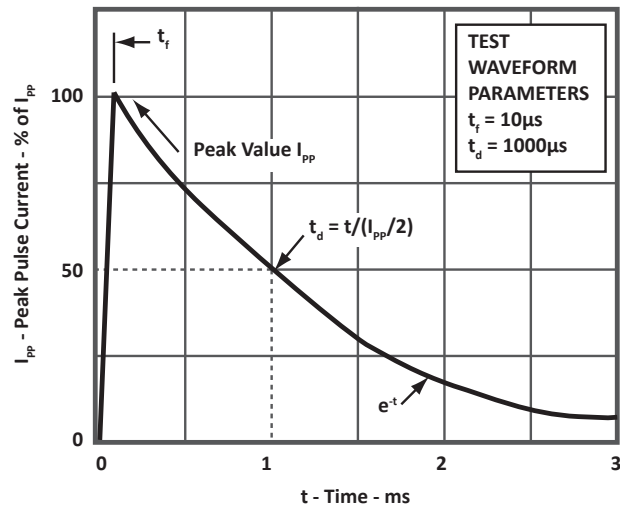
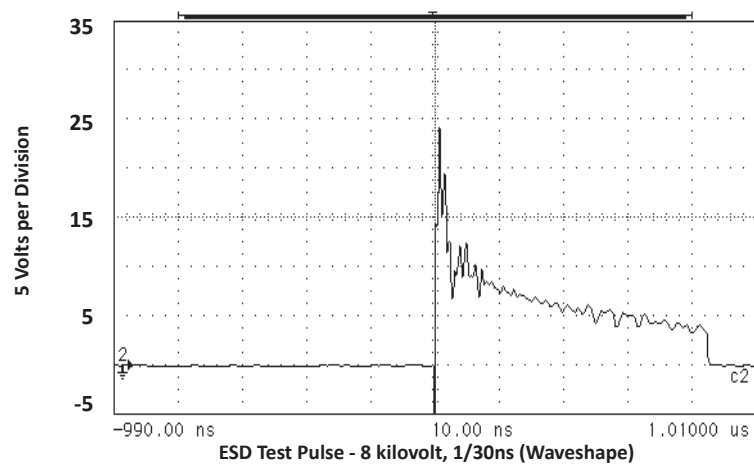


FIGURE 3  
OVERSHOOT & CLAMPING VOLTAGE



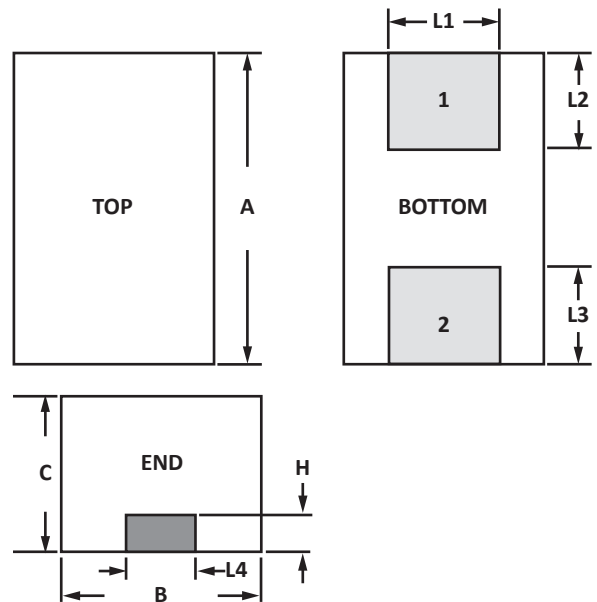
## DFN-2-0402 PACKAGE INFORMATION

## OPTION 1 - OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.99	1.04	0.039	0.041
B	0.58	0.64	0.023	0.025
C	0.43	0.48	0.017	0.019
H	0.13	0.18	0.005	0.007
L1	0.28	0.33	0.011	0.013
L2	0.23	0.28	0.009	0.011
L3	0.23	0.28	0.009	0.011
L4	0.18	0.23	0.007	0.009

## NOTES

1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.

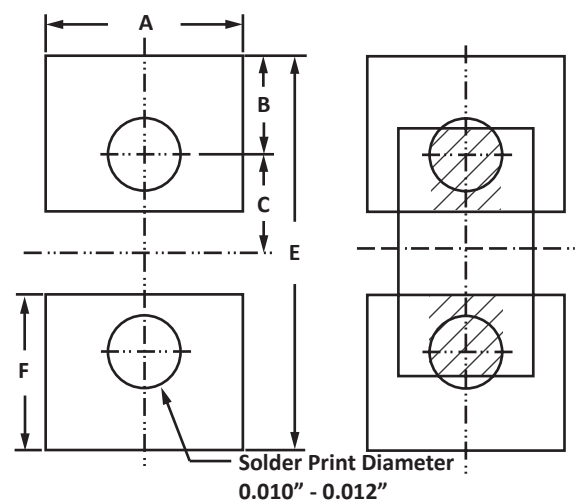


## OPTION 1 - PAD LAYOUT DIMENSIONS

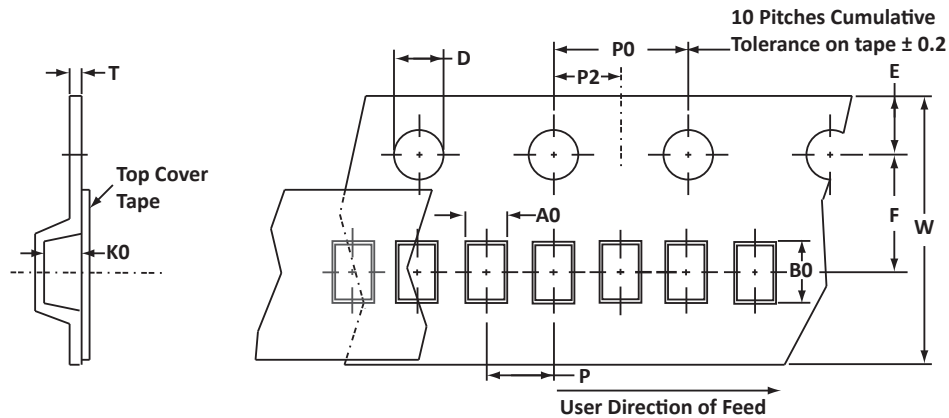
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.737	0.787	0.029	0.031
B	0.331	0.381	0.013	0.015
C	0.356	0.406	0.014	0.016
E	1.423	1.523	0.056	0.060
F	0.534	0.584	0.021	0.023

## NOTES

1. Controlling dimension: inches.
2. Decimal tolerances for mounting pad:  $\pm 0.003''$  ( $\pm 0.08$  mm).



## TAPE AND REEL



### SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	0.70 ± 0.05	1.15 ± 0.05	0.60 ± 0.003	1.55 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	2.00 ± 0.05	0.25

#### NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T710 = 7" Reel - 10,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2).

Package outline, pad layout and tape specifications per document number 06094.R1 3/11 - Option 1.

### ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PRSB6.8C	-LF	-T710	10,000	7"	n/a

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 company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

### 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:

Sales: [sales@protekdevices.com](mailto:sales@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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