## LOW CAPACITANCE MINIATURE TVS ARRAY



### DESCRIPTION

The PRSB6.8CT is a transient voltage suppressor array (TVS) designed to protect applications such as wireless telecommunication devices, SMART phones and portable electronics. The PRSB6.8CT 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 PRSB6.8CT 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 (tp =10/1000µs)
- Bidirectional Configuration
- Protects 1 Data Line
- Low Clamping Voltage
- · Easy Placement for Manufacturing
- Low Capacitance
- RoHS Compliant
- REACH Compliant

### **MECHANICAL CHARACTERISTICS**

- Molded JEDEC DFN-2-0402 Package
- Approximate Weight: 0.8 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:
  - Pure-Tin Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### **APPLICATIONS**

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

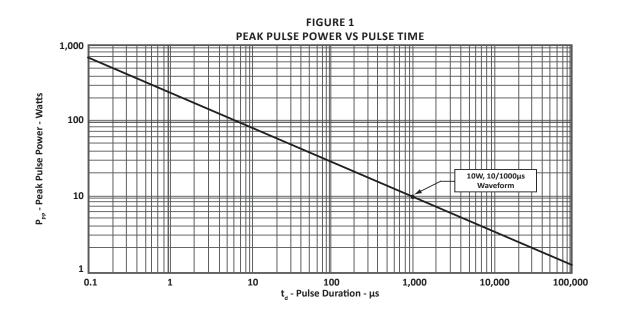
## PIN CONFIGURATION



# **TYPICAL DEVICE CHARACTERISTICS**

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified						
PARAMETER	SYMBOL	VALUE	UNITS			
Operating Temperature	T <sub>OPR</sub>	-55 to 150	°C			
Storage Temperature	T <sub>stg</sub>	-55 to 150	°C			
Junction Temperature	T <sub>A</sub>	150	°C			
Peak Pulse Power (tp = 10/1000μs) - See Figure 1	P <sub>PP</sub>	10	Watts			
Power Dissipation	Р	150	mW			

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified							
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE V <sub>WM</sub> VOLTS	MINIMUM BREAKDOWN VOLTAGE @ 1mA V <sub>(BR)</sub> VOLTS	MAXIMUM LEAKAGE CURRENT @ 3.5V I <sub>D</sub> μΑ	TYPICAL CAPACITANCE @0V, 1MHz C pF		
PRSB6.8CT	Н	4.7	5.7	1.0	15		



Ipp - Peak Pulse Current - % of Ipp

100

50

0 L

# TYPICAL DEVICE CHARACTERISTICS

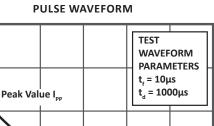
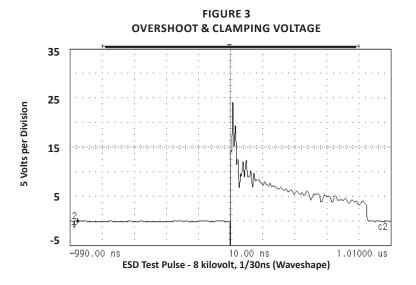


FIGURE 2

 $t_d = t/(I_{PP}/2)$ 

t - Time - ms

1



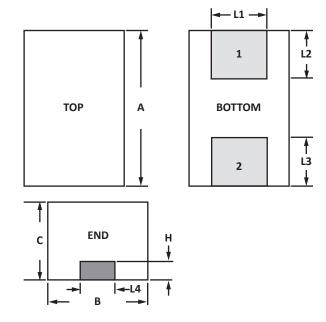


# **DFN-2-0402 PACKAGE INFORMATION**

OUTLINE DIMENSIONS							
DIM	MILLIN	1ETERS	INCHES				
	MIN	MAX	MIN	MAX			
А	0.99	1.04	0.039	0.041			
В	0.58	0.64	0.023	0.025			
С	0.33	0.45	0.013	0.018			
Н	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

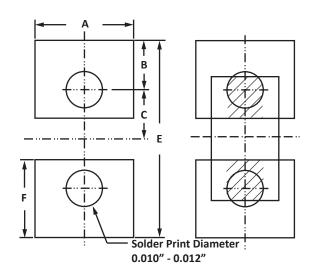
- 1. Dimensioning and tolerances per ANSI Y14.M, 1985.
- 2. Controlling dimension: inches.



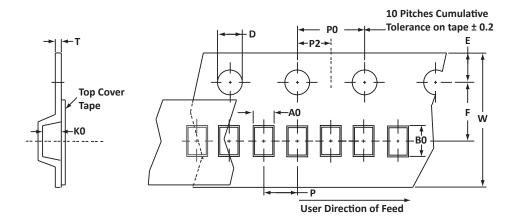
PAD LAYOUT DIMENSIONS						
DIM	MILLIN	IETERS	INCHES			
	MIN	MAX	MIN	MAX		
Α	0.737	0.787	0.029	0.031		
В	0.331	0.381	0.013	0.015		
С	0.356	0.406	0.014	0.016		
Е	1.423	1.523	0.056	0.060		
F	0.534	0.584	0.021	0.023		

# NOTES

- 1. Controlling dimension: inches.
- 2. Decimal tolerances for mounting pad:  $\pm 0.003^{\prime\prime}$  ( $\pm 0.08$  mm).



# **TAPE AND REEL**



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	В0	ко	D	E	F	w	P0	P2	Р	tmax
178mm (7")	8mm	0.80 ± 0.10	1.20 ± 0.10	0.60 ± 0.10	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. Empty pocket underneath sprocket holes.
- 4. Suffix T75 = 7" Reel 5,000 pieces per 8mm tape (sprocket hole skipped).
- 5. Marking on Part marking code (see page 2).

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

ORDERING INFORMATION							
BASE PART NUMBER LEADFREE SUFFIX TAPE SUFFIX QTY/REEL REEL SIZE TUBE QTY							
PRSB6.8CT n/a -T75 5				7"	n/a		
This device is only available in a Lead-Free configuration.							



## **COMPANY INFORMATION**

#### **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.

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