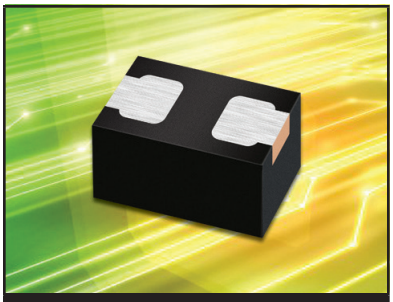
LOW CAPACITANCE MINIATURE TVS ARRAY



DFN-2 PACKAGE

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 10/1000µs waveform and 50 Watts at 8/20µs, 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): Air ±15kV, Contact ±8kV
- Compatible with IEC 61000-4-4 (EFT)
- 10 Watts Peak Pulse Power per Line (tp =10/1000µs)
- 50 Watts Peak Pulse Power per Line (tp = 8/20µs)
- 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

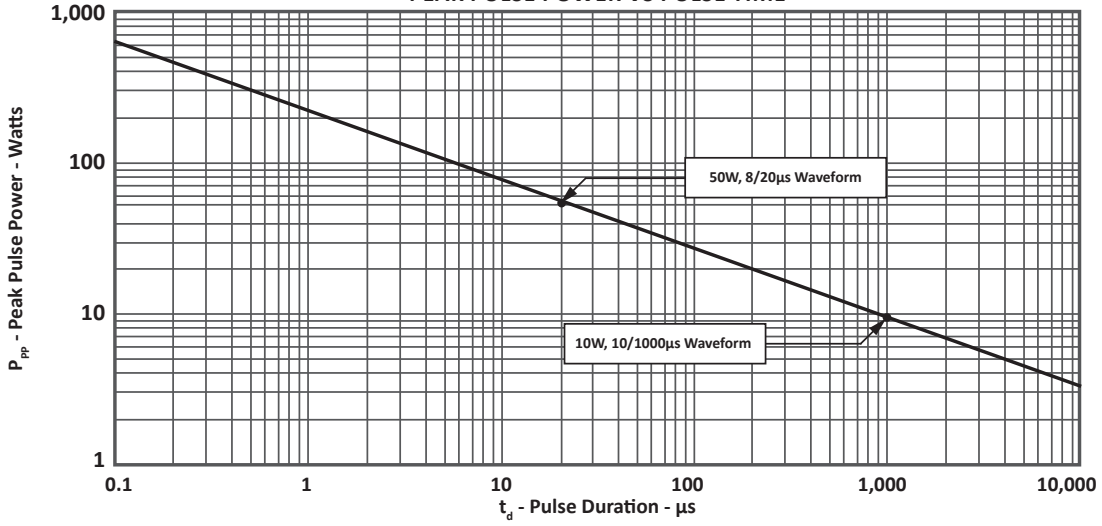
PIN CONFIGURATION

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 (tp = 10/1000µs) - See Figure 1	P_{PP}	10	Watts
Peak Pulse Power (tp = 8/20µs) - See Figure 1	P_{PP}	50	Watts
Power Dissipation	P	150	mW

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)** @ IP = 1A V_C **VOLTS**	**MAXIMUM CLAMPING VOLTAGE (Fig. 2)** @ 8/20µs V_C @ I_{PP}	**MAXIMUM LEAKAGE CURRENT** @ 3.5V I_D **µA**	**TYPICAL CAPACITANCE** @0V, 1MHz C **pF**
PRSB6.8C	A	4.7	5.7	13.0	17.5V @ 3.0A	0.5	15

FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

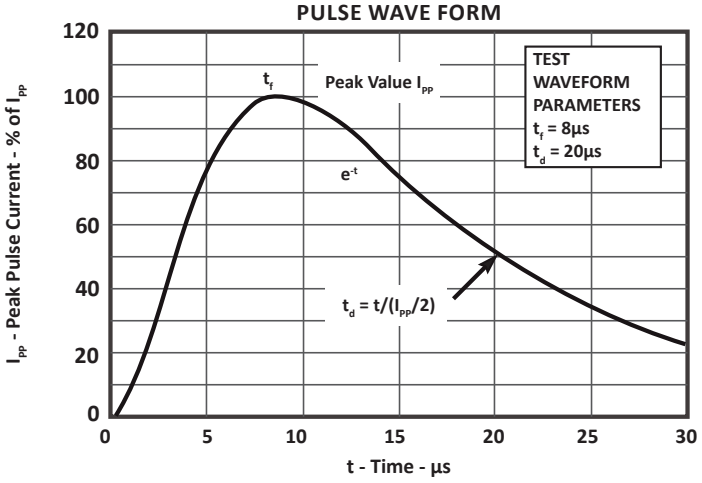
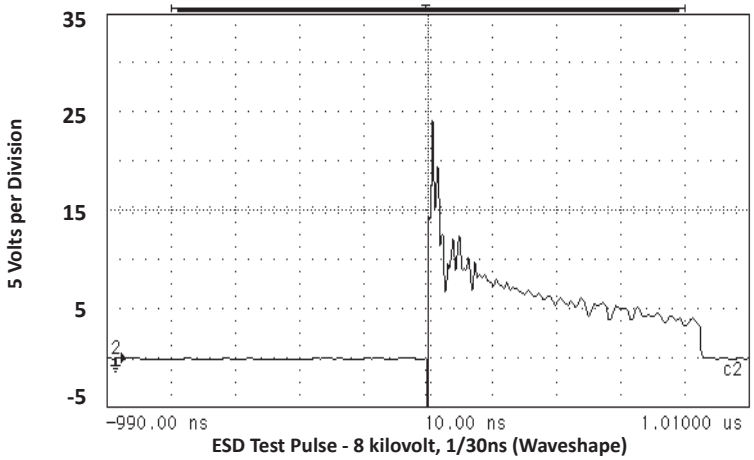


FIGURE 3
OVERSHOOT & CLAMPING VOLTAGE



TYPICAL DEVICE CHARACTERISTICS

FIGURE 4
VOLTAGE VS LEAKAGE ACROSS PIN 1-2

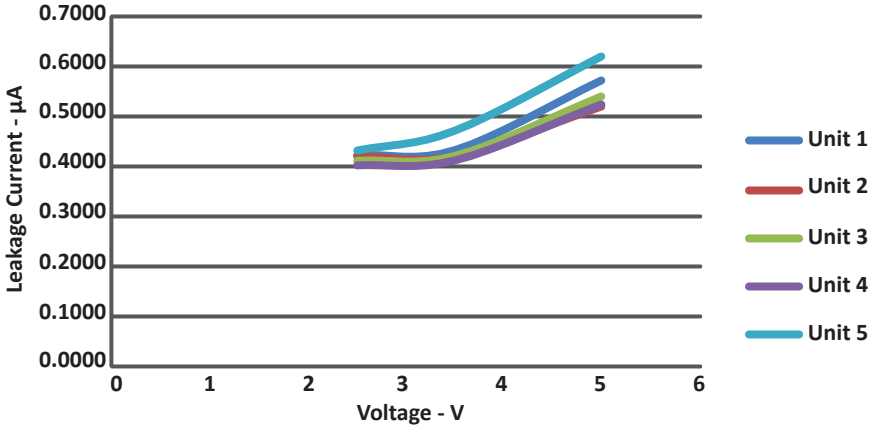


FIGURE 5
VOLTAGE VS RESISTANCE ACROSS PIN 1-2

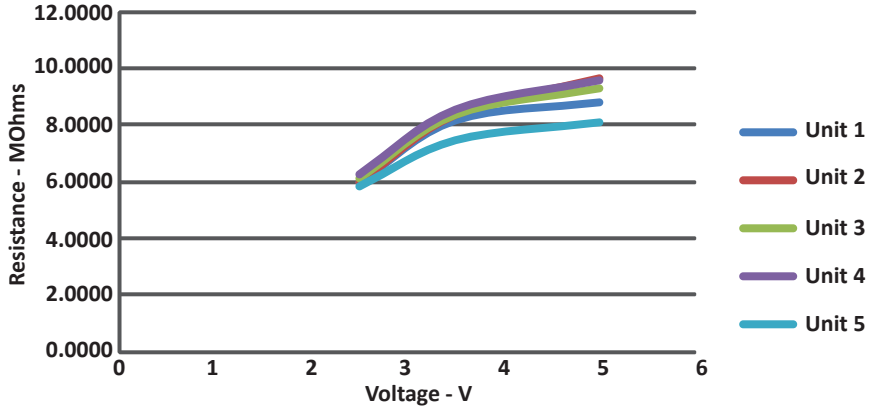
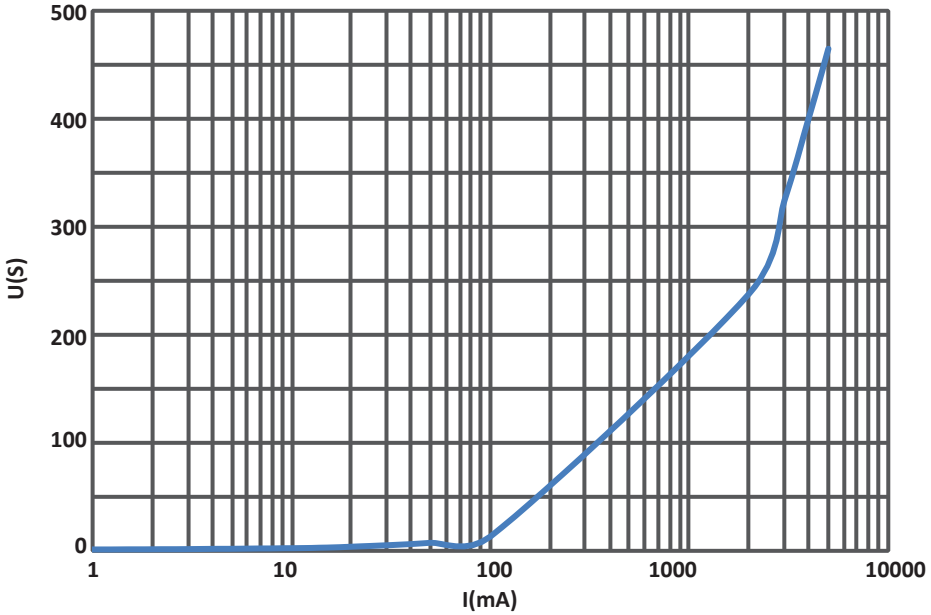


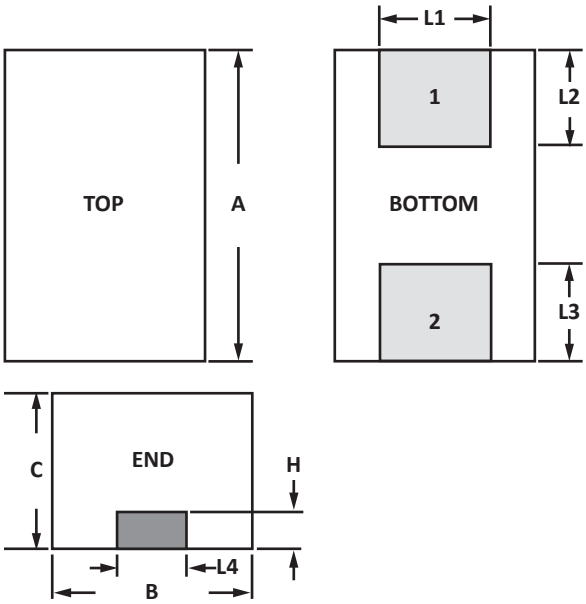
FIGURE 6
UI CURVE



DFN-2-0402 PACKAGE INFORMATION

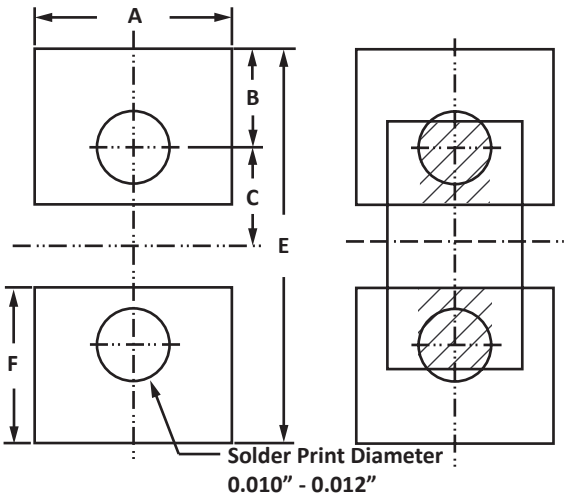
OPTION 1 - OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.99	1.04	0.039	0.041
B	0.58	0.64	0.023	0.025
C	0.43	0.48	0.017	0.019
H	0.13	0.18	0.005	0.007
L1	0.28	0.33	0.011	0.013
L2	0.23	0.28	0.009	0.011
L3	0.23	0.28	0.009	0.011
L4	0.18	0.23	0.007	0.009

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

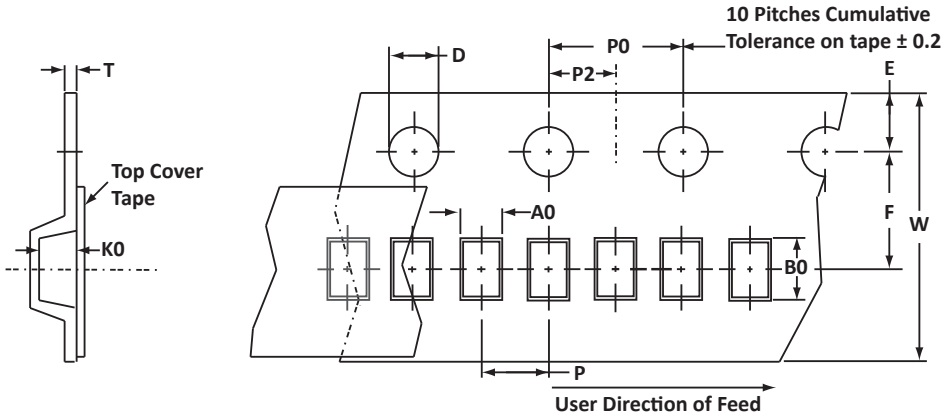


OPTION 1 - PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.737	0.787	0.029	0.031
B	0.331	0.381	0.013	0.015
C	0.356	0.406	0.014	0.016
E	1.423	1.523	0.056	0.060
F	0.534	0.584	0.021	0.023

NOTES
1. Controlling dimension: inches.
2. Decimal tolerances for mounting pad: ±0.003" (±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).

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

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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