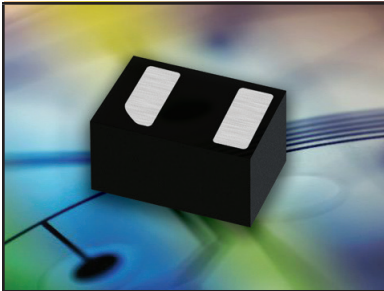


ESD PROTECTION TVS ARRAY



DFN-0603-2 PACKAGE

DESCRIPTION

The PESD05B is a TVS array that is designed to protect components from damage or upset due to electrostatic discharge (ESD). The device is offered in a bidirectional configuration and is available in two lead DFN-0603 package. The PESD05B features a large cross sectional area junction for conducting high transient currents, fast response time and low operating voltage. This device meets the IEC 61000-4-2 and IEC 61000-4 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air $\pm 30\text{kV}$, Contact $\pm 30\text{kV}$
- Compatible with IEC 61000-4-4 (EFT): 40A, 5/50ns
- 40 Watts Peak Pulse Power per Line ($t_p = 8/20\mu\text{s}$)
- Bidirectional Configuration
- Protects 1 Data Line
- Low Clamping Voltage
- Easy Placement for Manufacturing
- Replacement for MLV (0402)
- Fast Response Time: $< 1\text{ns}$
- RoHS Compliant
- REACH Compliant

APPLICATIONS

- Cellular Phones
- Portable Devices
- Digital Cameras
- Power Supplies

MECHANICAL CHARACTERISTICS

- Molded DFN-0603-2L Package
- Approximate Weight: 0.8 milligrams
- Lead-Free Plating: 100% Matte Sn(Tin)
- Solder Reflow Temperature - $260\text{-}270^\circ\text{C}$
- 8mm Tape and Reel Per EIA Standard 481
- Meets MSL 1 Requirements
- Flammability Rating UL 94V-0

PIN CONFIGURATION



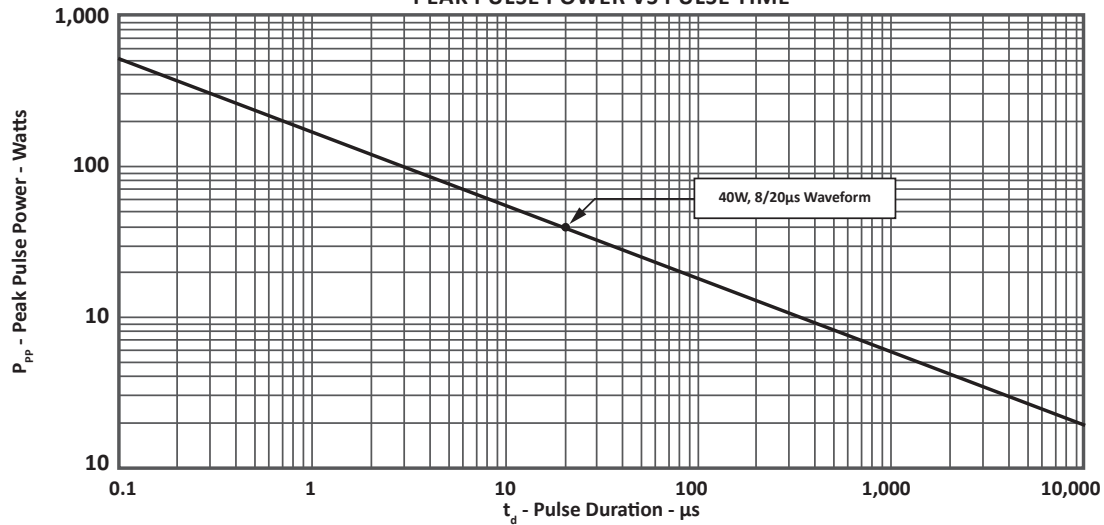
TYPICAL DEVICE CHARACTERISTICS
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified

PARAMETER	SYMBOL	VALUE	UNITS
Storage Temperature	T_{STG}	-55 to 150	°C
Junction Temperature	T_J	-55 to 150	°C
Peak Pulse Power ($t_p = 8/20\mu s$) - See Figure 1	P_{PP}	40	Watts
Peak Pulse Current	I_{PP}	4	Amps

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE	MINIMUM BREAKDOWN VOLTAGE	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM CLAMPING VOLTAGE (Fig. 2)	MAXIMUM LEAKAGE CURRENT	TYPICAL CAPACITANCE
		V_{WM} VOLTS	@ 1mA $V_{(BR)}$ VOLTS	@ $I_P = 1A$ V_C VOLTS	@ $I_P = 4A$ V_C VOLTS	@ 5V I_D μA	@ 0V, 1MHz C pF
PESD05B	F	5.0	5.6	7.5	9.5	1.0	10

FIGURE 1
PEAK PULSE POWER VS PULSE TIME



TYPICAL DEVICE CHARACTERISTICS

FIGURE 2
PULSE WAVE FORM

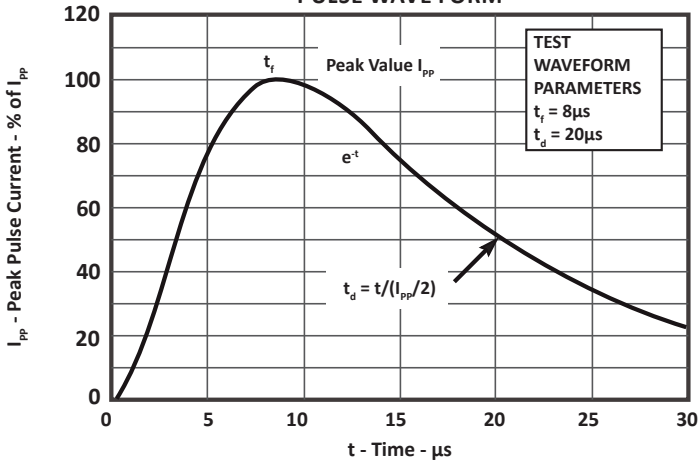


FIGURE 3
POWER DERATING CURVE

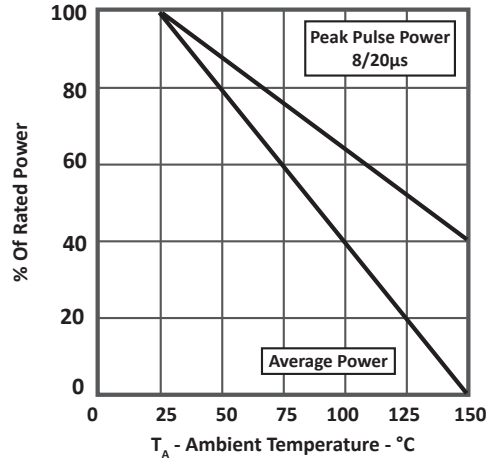


FIGURE 4
TYPICAL LEAKAGE CURRENT VS TEMPERATURE

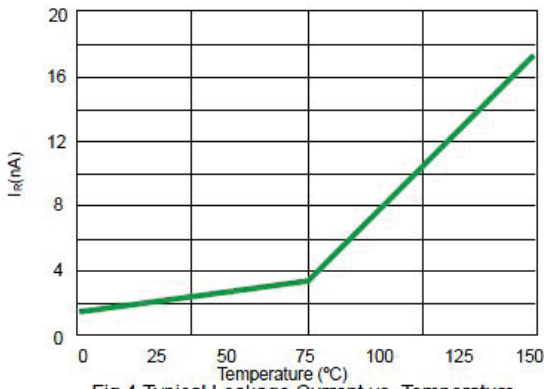


Fig 4. Typical Leakage Current vs. Temperature

FIGURE 5
TLP MEASUREMENT

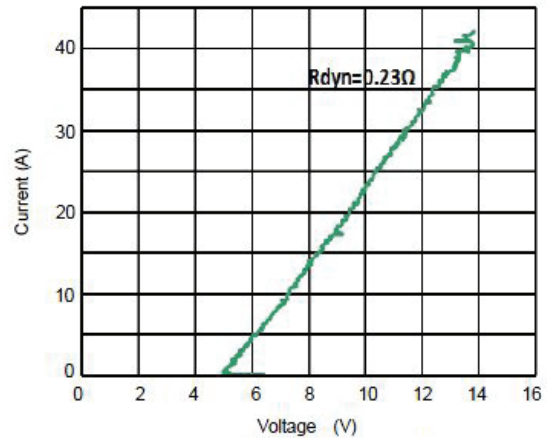
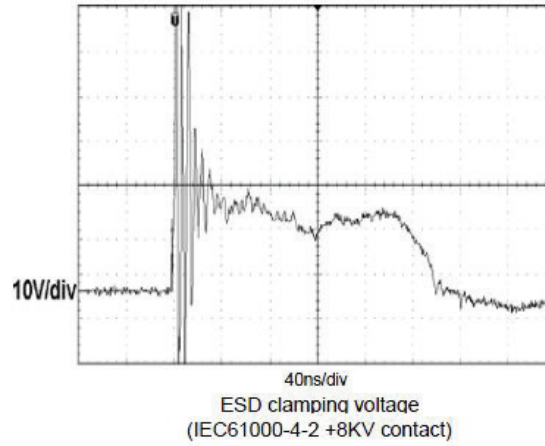
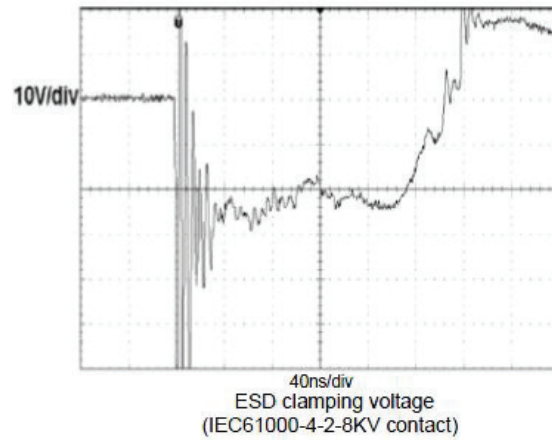
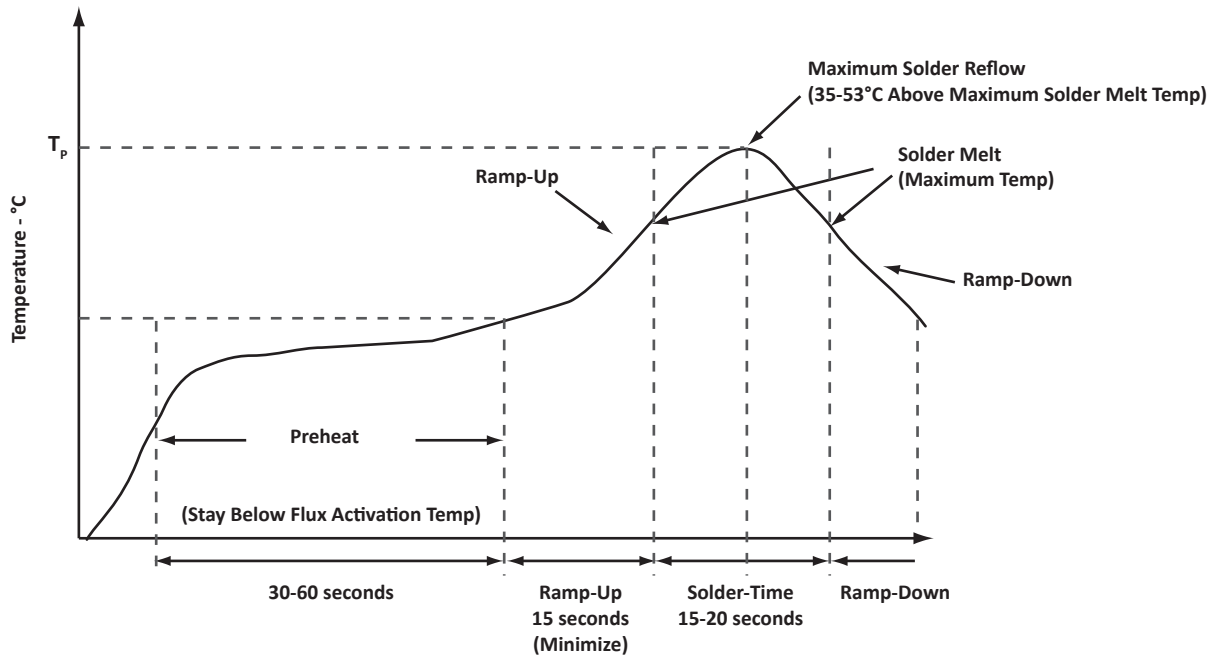


Fig 6. TLP Measurement

TYPICAL DEVICE CHARACTERISTICS

FIGURE 6
ESD CLAMPING VOLTAGE**FIGURE 7**
ESD CLAMPING VOLTAGE

PACKAGE INFORMATION

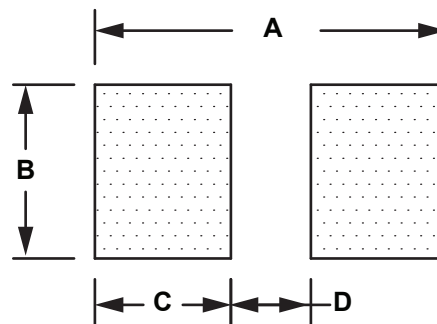
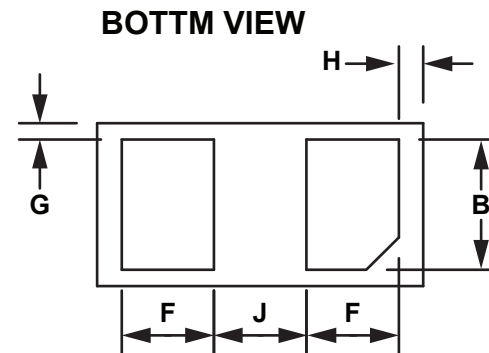
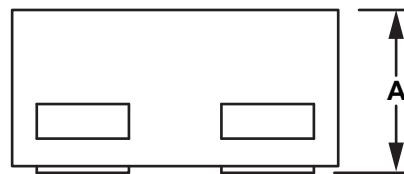
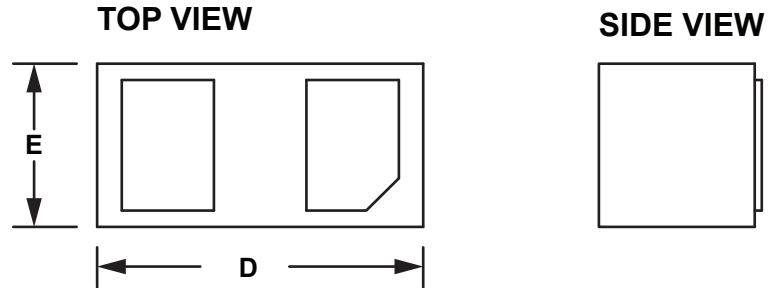


PACKAGE INFORMATION
OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.290	0.325	0.011	0.013
B	0.210	0.270	0.007	0.011
D	0.570	0.630	0.022	0.025
E	0.270	0.330	0.011	0.014
F	0.140	0.200	0.006	0.008
G	0.015	0.045	0.0005	0.002
H	0.030	0.060	0.001	0.003
J	0.140	0.200	0.006	0.008

NOTES

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

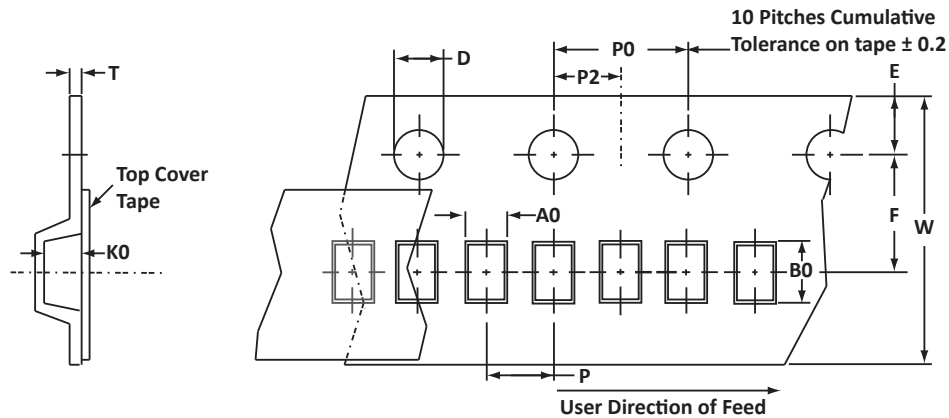

PAD LAYOUT DIMENSIONS

DIM	MILLIMETERS	INCHES
	NOM	NOM
A	0.650	0.025
B	0.320	0.013
C	0.250	0.010
D	0.150	0.006

NOTES

1. Decimal tolerances for mounting pad: $\pm 0.003''$ (± 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	TBD	TBD	TBD	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

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

ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PESD05B	N/A	-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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