

## 9PF UNIDIRECTIONAL TVS ARRAY



### DESCRIPTION

The PLR0503 is a low capacitance TVS array, designed to protect sensitive digital or analog input circuits on data, signal or control lines with voltage levels up to 5 Volts DC. This device suppresses the effects of Electrostatic Discharge and other overvoltage transients.

The PLR0503 is available in a small SOT-143 package configuration. The device meets the Level 4, IEC 61000-4-2 requirements.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD), Level 4: Air - 15kV, Contact - 8kV
- MIL-STD-883 3015.7: 30kV
- Protection up to 5VDC
- < 1 ns Fast Response Time
- Low Capacitance: 9pF
- RoHS Compliant
- REACH Compliant

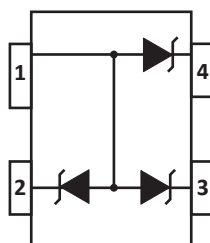
### APPLICATIONS

- Mobile Phone Handsets
- Personal Digital Assistant (PDA)
- Portable Equipment: Laptop, Palmtop Computers
- Computer Port, Keyboard (USB1.1)
- Digital Still Cameras
- Digital Video Cameras
- MP3 Players

### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-143 Package
- Approximate Weight: 9 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

### PIN CONFIGURATION



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

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_L$	-40 to 125	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Peak Pulse Power (tp = 8/20µs) - See Figure 1	$P_{PP}$	25	Watts
Forward Voltage @ 10mA	$V_F$	1.2	Volts

**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)  @ 8/20µs $V_C @ I_{PP(MAX)}$ VOLTS	MAXIMUM LEAKAGE CURRENT  @ $V_{WM}$ $I_D$ µA	TYPICAL CAPACITANCE PER LINE  0V, 1MHz $C_J$ pF
PLR0503	53	5.0	6.0	12.5V @ 2.0A	1	9

TYPICAL DEVICE CHARACTERISTICS

FIGURE 1  
PEAK PULSE POWER VS PULSE TIME

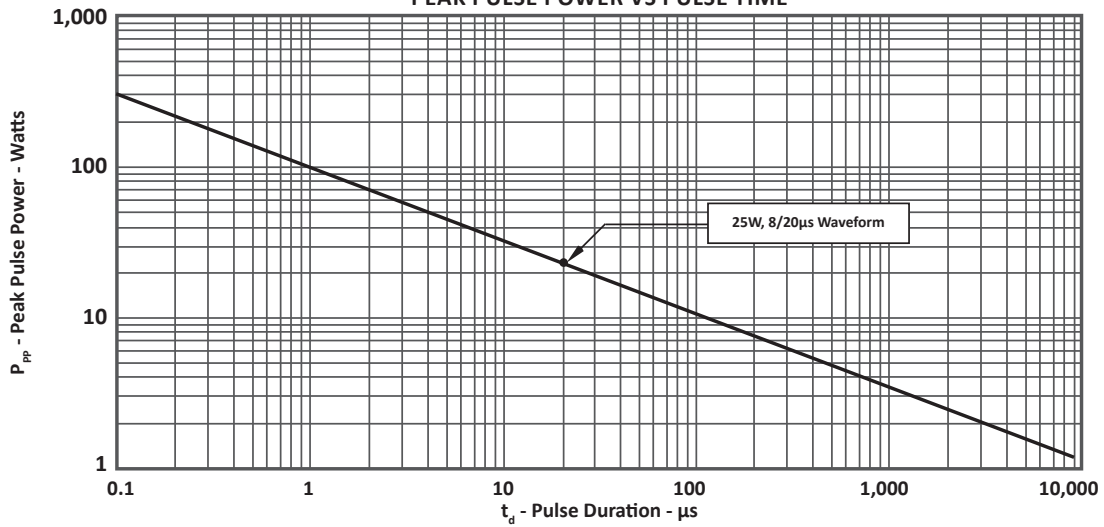


FIGURE 2  
PULSE WAVE FORM

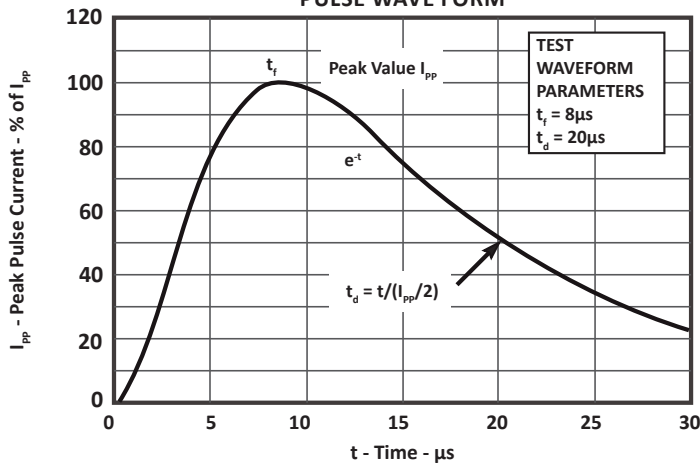
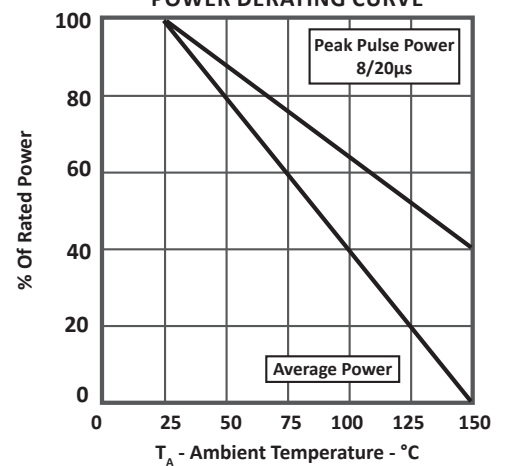


FIGURE 3  
POWER DERATING CURVE

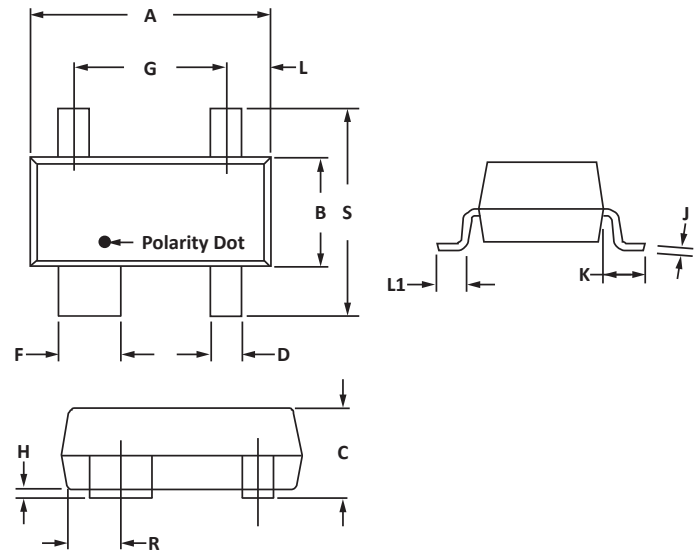


**SOT-143 PACKAGE INFORMATION**
**OUTLINE DIMENSIONS**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.110	0.120
B	1.20	1.39	0.047	0.055
C	0.84	1.14	0.033	0.045
D	0.39	0.50	0.015	0.020
F	0.79	0.93	0.031	0.037
G	1.78	2.03	0.070	0.080
J	0.08	0.15	0.003	0.006
K	0.46	0.60	0.018	0.024
L	0.445	0.60	0.0175	0.024
L1	0.40	0.60	0.016	0.024
R	0.72	0.83	0.028	0.033
S	2.11	2.48	0.083	0.098

**NOTES**

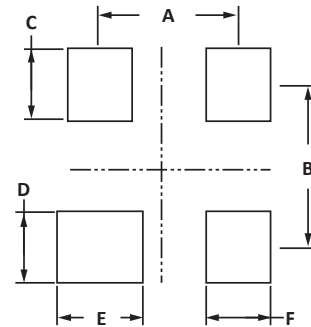
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.
3. Dimensions are exclusive of mold flash and metal burrs.


**PAD LAYOUT DIMENSIONS**

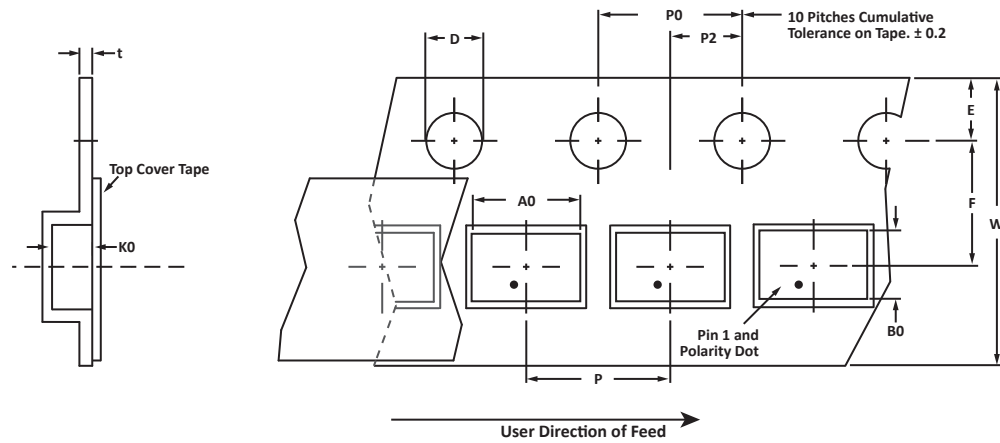
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.88	2.13	0.074	0.084
B	1.80	2.06	0.071	0.081
C	0.71	0.97	0.028	0.038
D	0.76	1.02	0.030	0.040
E	1.07	1.32	0.042	0.052
F	0.71	0.97	0.028	0.038

**NOTES**

1. Controlling dimension: inches.



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	3.10 ± 0.10	2.70 ± 0.10	1.35 ± 0.10	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	0.25

## NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T7 = 7" Reel - 3,000 pieces per 8mm tape.
4. Suffix - T13 = 13" Reel - 10,000 pieces per 8mm tape.
5. Marking on Part - marking code (see page 2) and polarity dot.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PLR0503	N/A	-T7	3000	7"	n/a
PLR0503	N/A	-T13	10,000	13"	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 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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