ULTRA LOW CAPACITANCE STEERING DIODE/TVS ARRAY



DESCRIPTION

The SR series offers two low voltage (2.8V & 3.3V) and low capacitance steering diode TVS arrays. This series is designed to protect two line pair or four data/transmission lines from the effects of Electrostatic Discharge (ESD) and Electrical Fast Transients (EFT).

The SR series is ideal for low voltage circuit applications. The leakage current for the SR2.8 is less than 1.0 microampere. The low capacitance of the steering diode allows the designer to protect high speed data applications. The small SOT-143 package, with four leads reduces the internal lead inductance for low overshoot voltage during fast front time transient events, such as ESD. This device meets the IEC 61000-4-2 and IEC 61000-4-4 requirements.

FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air 15kV, Contact 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A 5/50ns
- Compatible with IEC 61000-4-5 (Surge): 24A, 8/20μs Level 2(Line-Gnd) & Level 3 (Line-Line)
- 300 Watts Peak Pulse Power per Line (tp = 8/20µs)
- Provides Two Lines of Protection
- Low Leakage Current < 1.0μA
- Ultra Low Capacitance: 4.5pF Typical
- · RoHS Compliant
- REACH Compliant

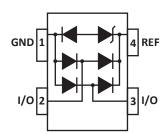
MECHANICAL CHARACTERISTICS

- 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

APPLICATIONS

- Ethernet 10/100/1000 Base T
- USB
- Handheld Electronics
- Video Cards
- WAN/LAN Equipment

PIN CONFIGURATION





TYPICAL DEVICE CHARACTERISTICS

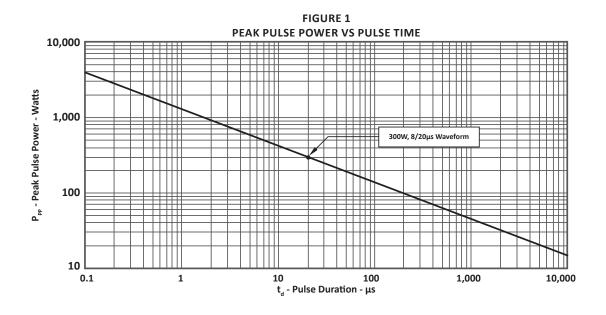
MAXIMUM RATINGS @ 25°C Unless Otherwise Specified									
PARAMETER SYMBOL VALUE U									
Operating Temperature	T _L	-55 to 150	°C						
Storage Temperature	T _{stg}	-55 to 150	°C						
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P _{pp}	300	Watts						
Forward Surge Rating (1/20s @ 25°C, I _F = 10mA)	V _F	1	Volts						
Peak Pulse Current (tp = 8/20μs)	I _{pp}	30	Amps						

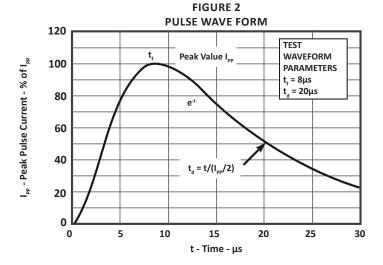
ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified										
PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE (Note 1) V _{WM}	MINIMUM SNAP-BACK VOLTAGE @ 50mA V _(SB)	MINIMUM BREAKDOWN VOLTAGE (Note 1) @ 2μA V _(BR)	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) @ I _p = 1A V	MAXIMUM CLAMPING VOLTAGE (Fig. 2) (Note 1) @ 8/20μs V	MAXIMUM LEAKAGE CURRENT (Note 1)	TYPICAL CAPACITANCE (Note 2) OV, 1MHz C _{J(SD)}		
		VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	' _□ μ A	pF		
SR2.8	2A	2.8	2.8	3.0	5.0	8.5V @ 5A	1	4.5		
SR3.3	3A	3.3	3.3	3.5	7.0	15V @ 10A	1	4.5		

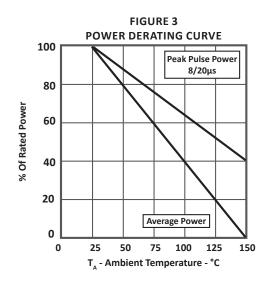
NOTES

- 1. From pin 4 to 1. 2. From pin 1 to 3, 1 to 2, 3 to 4, 2 to 4.

TYPICAL DEVICE CHARACTERISTICS







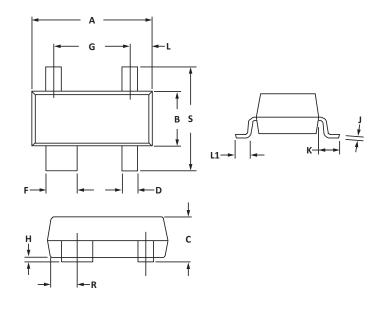


SOT-143 PACKAGE INFORMATION

OUTLINE DIMENSIONS								
MILLIN	IETERS	INCHES						
MIN	MAX	MIN	MAX					
2.80	3.04	0.110	0.120					
1.20	1.39	0.047	0.055					
0.84	1.14	0.033	0.045					
0.39	0.50	0.015	0.020					
0.79	0.93	0.031	0.037					
1.78	2.03	0.070	0.080					
0.08	0.15	0.003	0.006					
0.46	0.60	0.018	0.024					
0.445	0.60	0.0175	0.024					
0.40	0.60	0.016	0.024					
0.72	0.83	0.028	0.033					
2.11	2.48	0.083 0.09						
	MILLIN MIN 2.80 1.20 0.84 0.39 0.79 1.78 0.08 0.46 0.445 0.40 0.72	MILLIMETERS MIN MAX 2.80 3.04 1.20 1.39 0.84 1.14 0.39 0.50 0.79 0.93 1.78 2.03 0.08 0.15 0.46 0.60 0.445 0.60 0.40 0.60 0.72 0.83	MILLIMETERS INC MIN MAX MIN 2.80 3.04 0.110 1.20 1.39 0.047 0.84 1.14 0.033 0.39 0.50 0.015 0.79 0.93 0.031 1.78 2.03 0.070 0.08 0.15 0.003 0.46 0.60 0.018 0.445 0.60 0.0175 0.40 0.60 0.016 0.72 0.83 0.028					



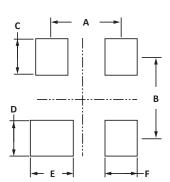
- 1. Dimensioning and tolerances per ANSI Y14.M, 1985.
- ${\bf 2.} \ \ {\bf Controlling\ dimension: in ches.}$
- 3. Dimensions are exclusive of mold flash and metal burrs.



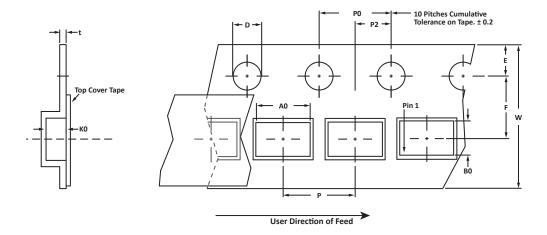
PAD LAYOUT DIMENSIONS								
MILLIN	IETERS	INCHES						
MIN	MAX	MIN	MAX					
1.88	2.13	0.074	0.084					
1.80	2.06	0.071	0.081					
0.71	0.97	0.028	0.038					
0.76	1.02	0.030	0.040					
1.07	1.32	0.042	0.052					
0.71	0.97	0.028	0.038					
	MILLIM MIN 1.88 1.80 0.71 0.76 1.07	MILLIMETERS MIN MAX 1.88 2.13 1.80 2.06 0.71 0.97 0.76 1.02 1.07 1.32	MILLIMETERS INC MIN MAX MIN 1.88 2.13 0.074 1.80 2.06 0.071 0.71 0.97 0.028 0.76 1.02 0.030 1.07 1.32 0.042					

NOTES

1. Controlling dimension: inches.



TAPE AND REEL



SPECIFICATIONS												
REEL DIA.	TAPE WIDTH	A0	В0	КО	D	E	F	W	P0	P2	Р	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 date code.

Package outline, pad layout and tape specifications per document number 06011.R4 8/10.

ORDERING INFORMATION								
BASE PART NUMBER LEADFREE SUFFIX TAPE SUFFIX QTY/REEL REEL SIZE TUBE QTY								
SR2.8/SR3.3	-LF	-T7	3000	7"	n/a			
SR2.8/SR3.3 -LF -T13 10,000 13" 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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