

## LOW CAPACITANCE TVS ARRAY

### DESCRIPTION

The DSOT0502 is a low capacitance transient voltage suppressor array, designed to protect computer interfaces and portable electronics from the damaging effects of Electrostatic Discharge and Electrical Fast Transients.

The DSOT0502 meets IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device offers a low capacitance and low leakage current in a miniature SOT-883 package.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- Compatible with IEC 61000-4-4 (EFT): 40A - 5/50ns
- 25 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Low Clamping Voltage
- Bidirectional Configuration
- Low Capacitance
- RoHS Compliant
- REACH Compliant

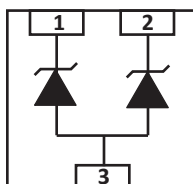
### APPLICATIONS

- SMART Phones
- Portable Electronics
- Control & Monitoring Systems
- Wireless Bus Protection

### MECHANICAL CHARACTERISTICS

- Molded JEDEC SOT-883 Package
- Approximate Weight: 2 milligrams
- Lead-Free Nickel Paladium Gold
- Solder Reflow Temperature:  
Nickel-Paladium-Gold: Ni/Pd/Au, 96/3.5/0.5: 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
Peak Pulse Power (tp = 8/20μs) - See Figure 1	P <sub>PP</sub>	25	Watts
Operating Temperature	T <sub>A</sub>	-55 to 150	°C
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C
Typical Forward Voltage @10mA, 300μs - Square Wave	V <sub>F</sub>	1.2	V

**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 CLAMPING VOLTAGE (Fig. 2)  @I <sub>p</sub> = 1A V <sub>C</sub> VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig. 2)  @8/20μs V <sub>C</sub> @ I <sub>PP</sub>	MAXIMUM LEAKAGE CURRENT  @V <sub>WM</sub> I <sub>D</sub> μA	TYPICAL CAPACITANCE  @0V, 1MHz C pF
DSOT0502	5U	5.0	6.0	9.8	12.5V @ 2A	2	9

## TYPICAL DEVICE CHARACTERISTICS

FIGURE 1  
PEAK PULSE POWER VS PULSE TIME

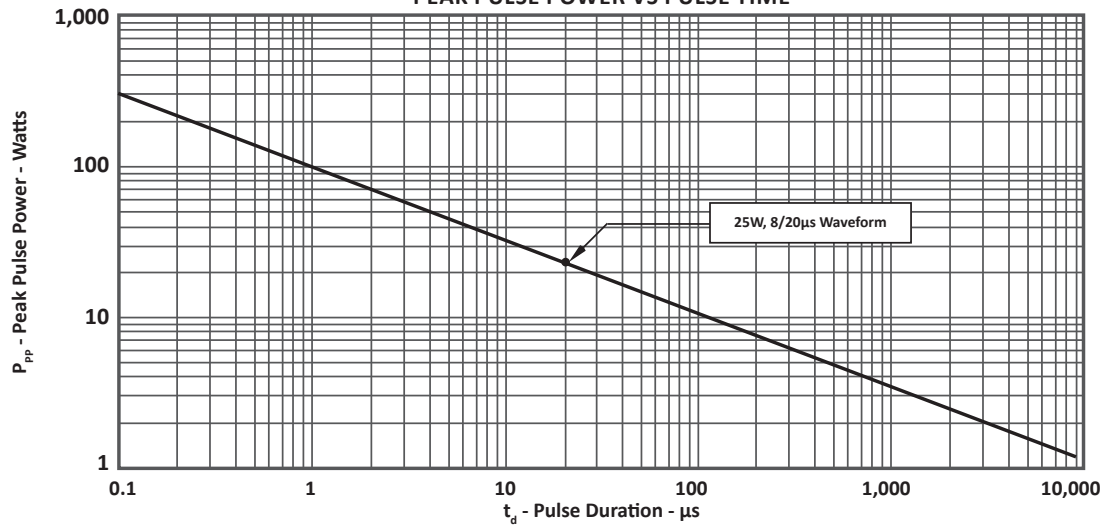
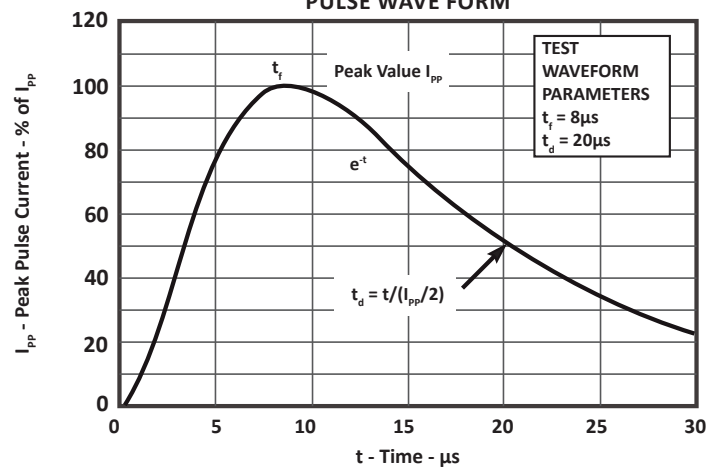


FIGURE 2  
PULSE WAVE FORM



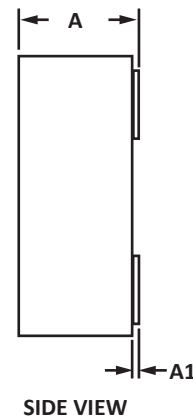
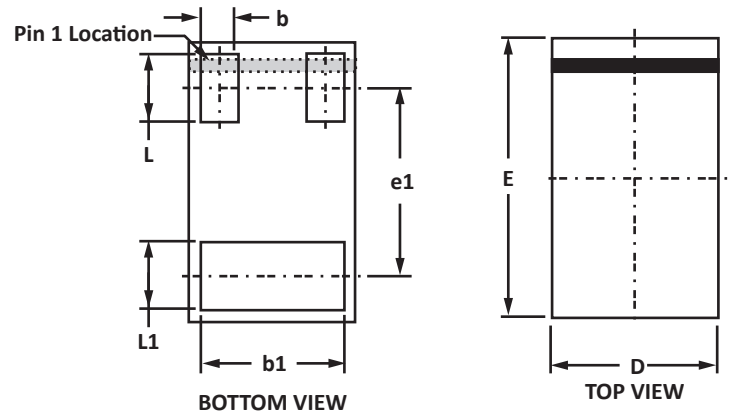
## SOT-883 PACKAGE INFORMATION

## OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.40	0.50	0.016	0.020
A1	0.00	0.03	0.00	0.001
D	0.55	0.65	0.022	0.026
E	0.95	1.05	0.037	0.041
e	0.35 BSC		0.014 BSC	
e1	0.65 BSC		0.026 BSC	
b	0.12	0.18	0.005	0.007
b1	0.47	0.53	0.019	0.021
L	0.22	0.28	0.009	0.011
L1	0.22	0.28	0.009	0.011

## NOTES

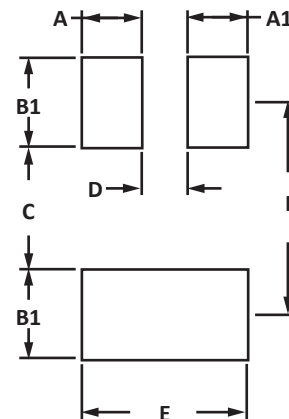
1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: millimeters.
3. Dimensions are exclusive of mold flash and metal burrs.



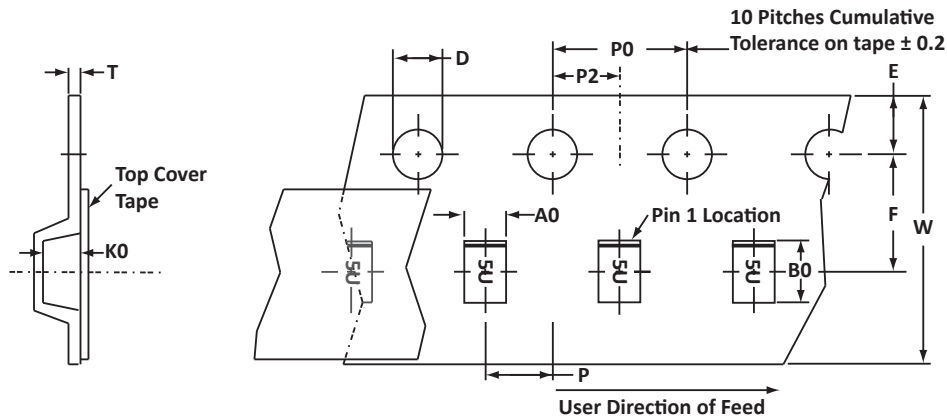
DIM	PAD LAYOUT DIMENSIONS	
	MILLIMETERS	INCHES
	NOMINAL	NOMINAL
A	0.20	0.008
A1	0.20	0.008
B	0.30	0.012
B1	0.30	0.012
C	0.40	0.016
D	0.15	0.006
E	0.55	0.022
F	0.70	0.028

## NOTES

1. Controlling dimension: inches.
2. Decimal tolerances for mounting pad:  $\pm 0.003''$  ( $\pm 0.08$  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 ± 0.10	0.56 ± 0.05	1.55 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.05	0.25

## NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T75 = 7" Reel - 5,000 pieces per 8mm tape.
4. Marking on Part - marking code (see page 2) and pin 1 designated by line.

Package outline, pad layout and tape specifications per document number 06099.R0 5/12.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
DSOT0502	n/a	-T75	5,000	7"	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 company located in Tempe, Arizona, that offers a product line of transient voltage suppressors (TVS); avalanche breakdown diodes; steering diode TVS arrays and other surge suppressor component products. These TVS devices protect electronic systems from the effects of lightning, electrostatic discharge (ESD), nuclear electromagnetic pulses (NEMP), inductive switching and EMI / RFI. ProTek Devices also offers high performance interface and linear products that include analog switches; multiplexers; LED drivers; audio control ICs; RF and related high frequency products. The analog devices work in a host of consumer; industrial; automotive and other applications.

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