



## Bidirectional TVS for ESD Protection Diode



### APPLICATIONS

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Pagers

### IEC COMPATIBILITY

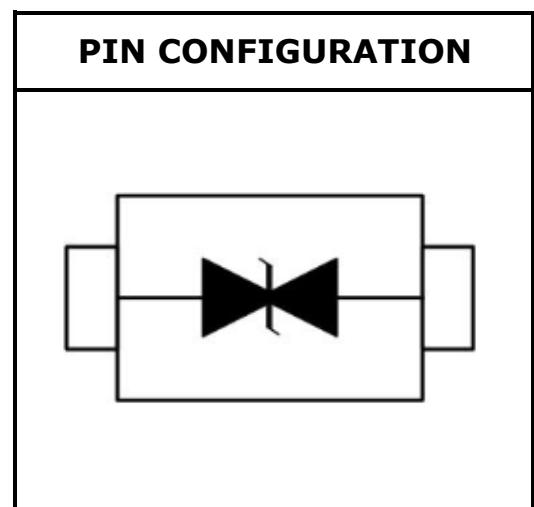
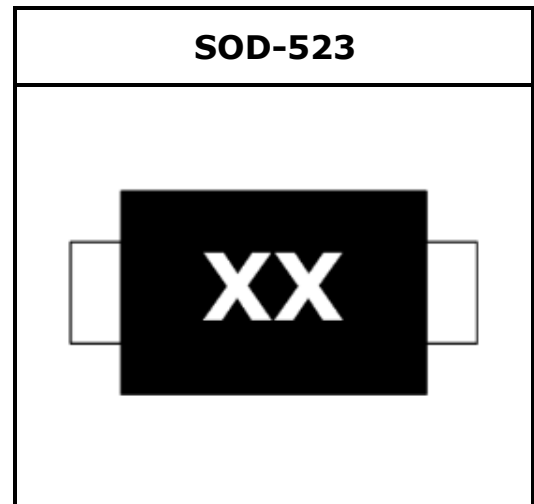
- ◆ IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)

### FEATURES

- ◆ 100 Watts Peak Pulse Power per Line ( $t_p=8/20\mu\text{s}$ )
- ◆ Protects one bidirectional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current

### MECHANICAL CHARACTERISTICS

- ◆ SOD-523 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 2.0 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch



# DEVICE CHARACTERISTICS

## YSESDA05CT

MAXIMUM RATINGS (@ 25°C Unless Otherwise Specified)			
PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp=8/20μs waveform)	P <sub>PP</sub>	100	Watts
Lead Soldering Temperature (10 sec.)	T <sub>L</sub>	260	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C
Maximun P <sub>PK</sub> Dissipation@T <sub>A</sub> =25°C (PW=8/20 μ s) (Note 1)	P <sub>PK</sub>	100	W
DC Power Dissipation @TL=75°C (Note 2)	PD	700	mW
Derate above 75°C		8	mW/°C
Thermal Resistance,Junction-to-Lead	R <sub>θJL</sub>	50	°C/W
DC Power Dissipation @TA=25°C (Note 2)	PD	500	mW
Derate above 25°C		4	mW/°C
Thermal Resistance, Junction-to-Ambient	R <sub>θJA</sub>	250	°C/W

Note 1. Non-repetitive current pulse at TA=25°C, Power waveform = 8/20 μ s.

Note 2. Mounted with 1 inch Copper pad size, DC board FR-4.

ELECTRICAL CHARACTERISTICS PER LINE (@ 25°C Unless Otherwise Specified)									
PART NUMBER	DEVICE MARKING	V <sub>RWM</sub>	V <sub>B</sub>	I <sub>T</sub>	V <sub>C</sub>	V <sub>C</sub>		I <sub>R</sub>	C <sub>T</sub>
		(V) (max.)	(V) (min.)	(mA)	@1A (max.)	(max.)	(@A)	(μA) (max.)	(pF) (typ.)
YSESDA05CT	DT	5	6	1	9.8	20	5	1	10

# DEVICE CHARACTERISTICS

## YSESDA05CT

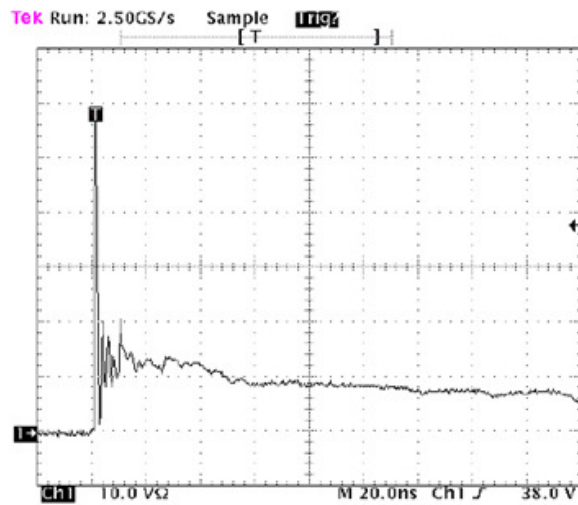


Figure 1. ESD Clamping Voltage Screenshot  
Positive 8 kV contact per IEC 61000-4-2

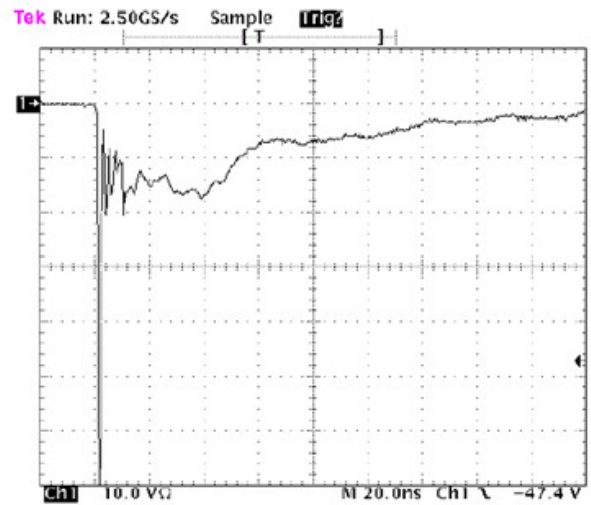


Figure 2. ESD Clamping Voltage Screenshot  
Negative 8 kV contact per IEC 61000-4-2

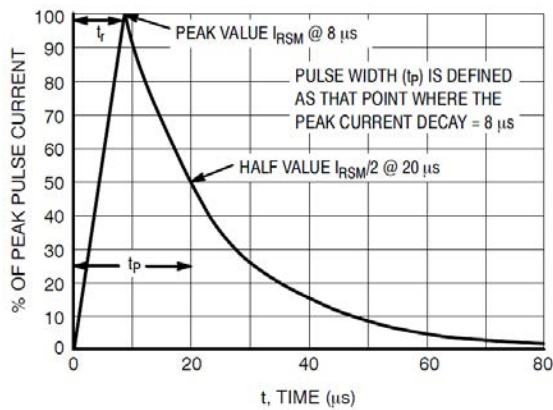


Figure 3. 8/20  $\mu$  s Pulse Waveform

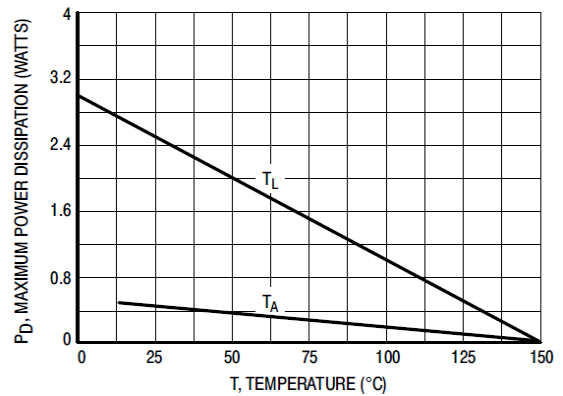
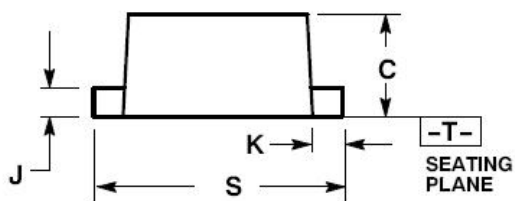
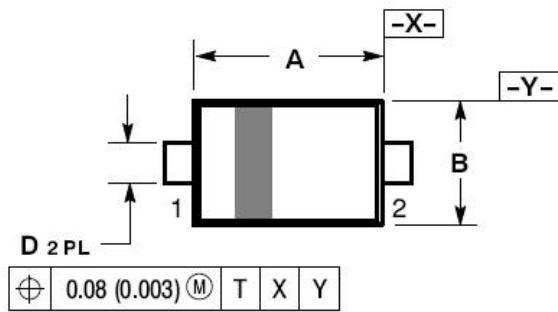


Figure 4. Steady State Power Derate Rating

# PACKAGE OUTLINE & DIMENSIONS

## YSESDA05CT



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067

### \* SOLDERING FOOTPRINT

