

# SD03 thru SD48

## UNIDIRECTIONAL TVS DIODE ARRAY FOR LATCH-UP PROTECTION

### APPLICATIONS

- ◆ RS-232, RS-422 & RS-423 Data Lines
- ◆ Audio/Video Inputs
- ◆ Wireless Network Systems
- ◆ Microprocessor Based Equipment
- ◆ Medical Sensors
- ◆ Notebook Computers

### IEC COMPATIBILITY

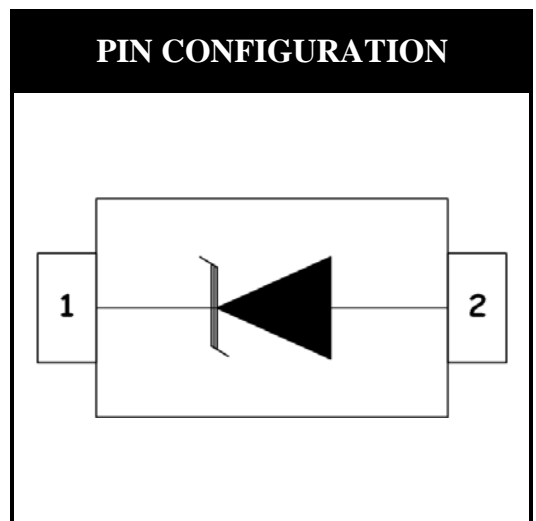
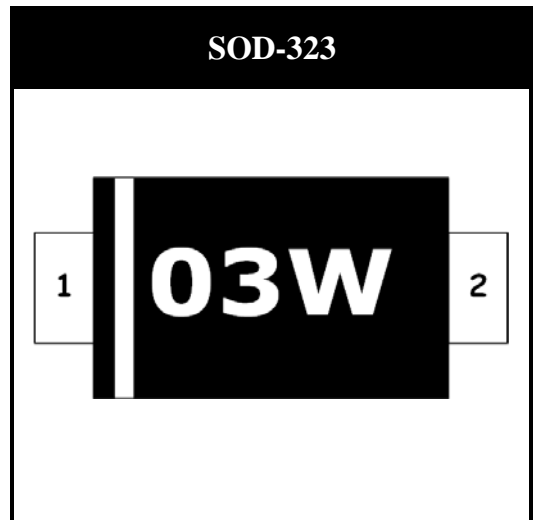
- ◆ IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact) -- 3.0V~18V
- ◆ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact) -- 24V~36V
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lighting) 2~25A (8/20  $\mu\text{s}$ )

### FEATURES

- ◆ 170~400 Watts Peak Pulse Power per Line ( $t_p=8/20\mu\text{s}$ )
- ◆ Protects One Uni-directional I/O Line
- ◆ Low Clamping Voltage
- ◆ Working Voltages : 3.0V to 48V
- ◆ Low Leakage Current

### MECHANICAL CHARACTERISTICS

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Weight 5.0 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free



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## DEVICE CHARACTERISTICS

### MAXIMUM RATINGS (@ 25°C Unless Otherwise Specified)

PARAMETER	SYMBOL	VALUE	UNITS
Peak Pulse Power (tp=8/20μs waveform) -- SD03	P <sub>PP</sub>	400	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD05	P <sub>PP</sub>	408	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD08	P <sub>PP</sub>	360	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD12	P <sub>PP</sub>	330	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD15	P <sub>PP</sub>	324	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD18	P <sub>PP</sub>	320	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD24	P <sub>PP</sub>	250	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD30	P <sub>PP</sub>	252	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD33	P <sub>PP</sub>	240	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD36	P <sub>PP</sub>	225	Watts
Peak Pulse Power (tp=8/20μs waveform) -- SD48	P <sub>PP</sub>	170	Watts
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-40 ~ 125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C

### 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.)
SD03	03W	3	3.8	1	7.5	16	25	40	350
SD05	05W	5	6	1	9.8	17	24	5	300
SD08	08W	7.5	7.8	1	13.4	20	18	3	200
SD12	12W	12	13.3	1	20	30	11	1	100
SD15	15W	15	16.7	1	25	36	9	1	90
SD18	18W	18	19	1	30	40	8	1	87
SD24	24W	24	26.6	1	45	50	5	1	80
SD30	30W	30	31.3	1	52	56	4.5	1	70
SD33	33W	33	36	1	58	60	4	1	50
SD36	36W	36	40	1	65	75	3	1	48
SD48	48W	48	48.5	1	75	85	2	1	40

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## TYPIC CHARACTERISTICS

Figure 1. Power Detating

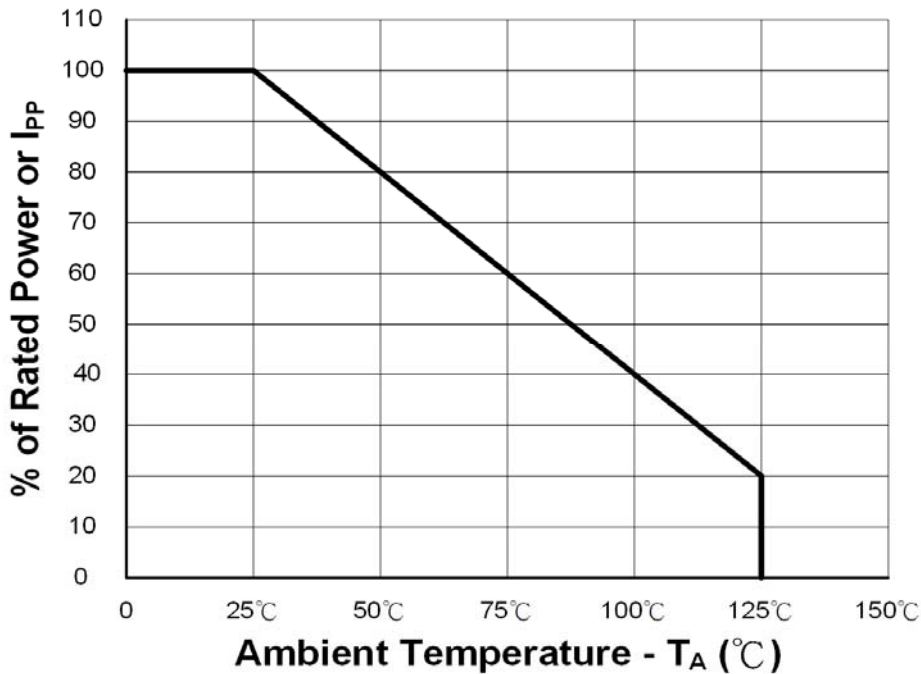
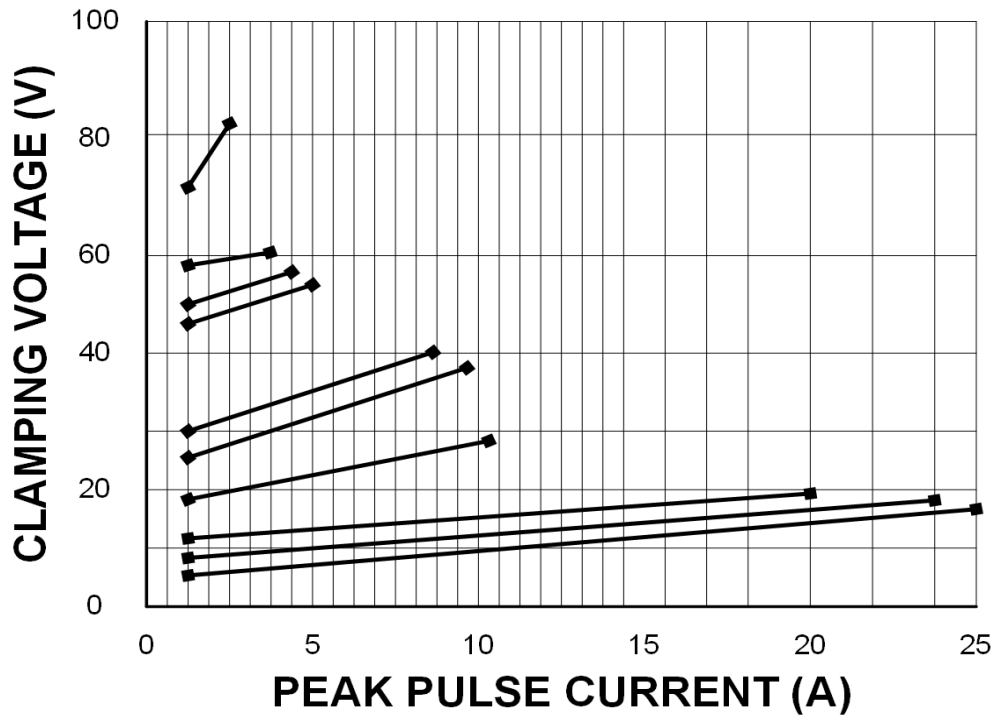


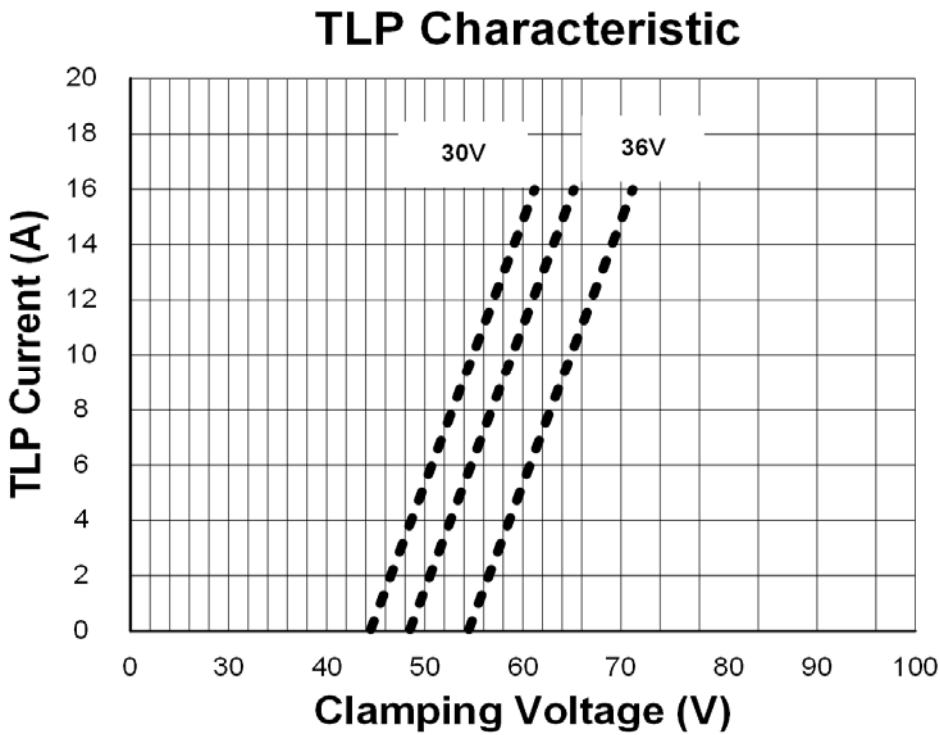
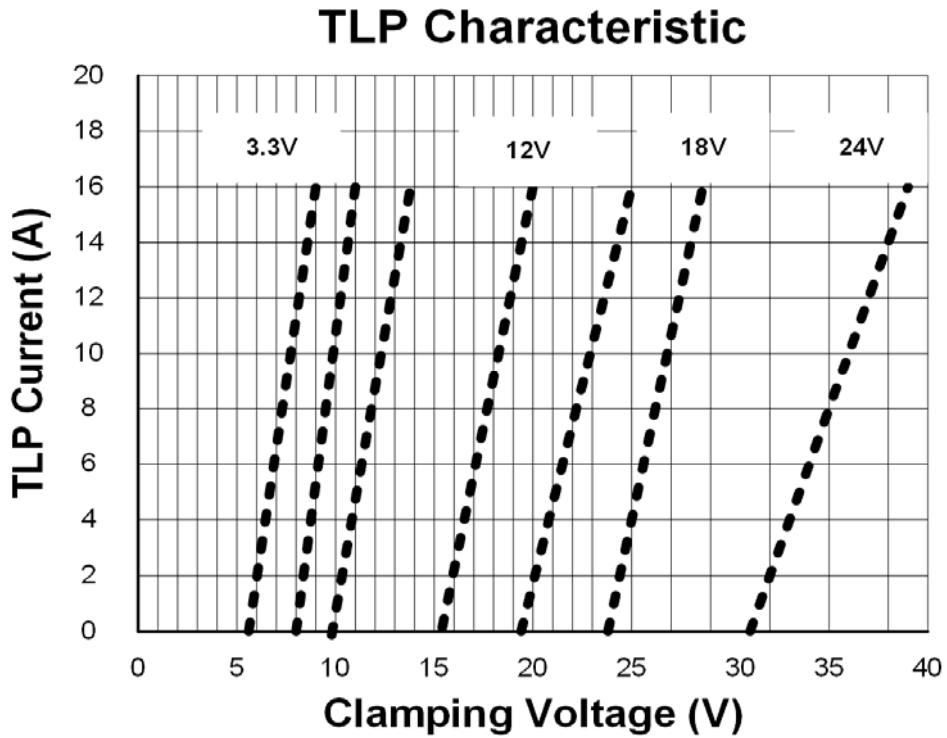
Figure 2. Clamping Voltage vs. Peak



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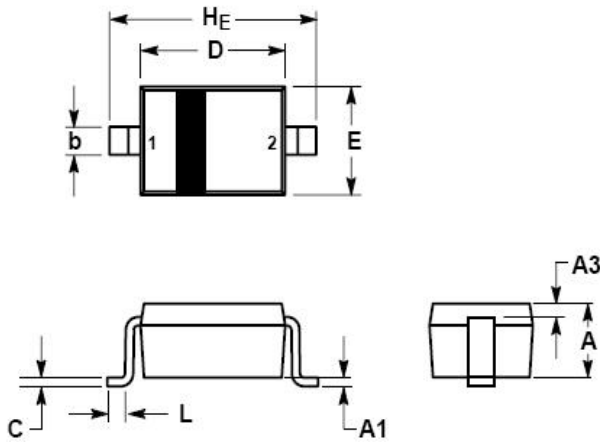
## TYPIC CHARACTERISTICS

Figure 3. TLP Characterizations (Transmission Line Pulse)



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## SOD-323 PACKAGE OUTLINE & DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
$H_E$	2.30	2.50	2.70	0.090	0.098	0.105

### \* SOLDERING FOOTPRINT

