

Transient Voltage Suppressors for ESD Protection

General Description

The LSD05T1G Series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

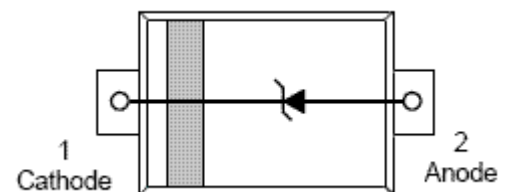
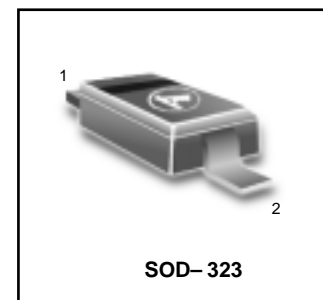
Applications

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

Features

- Small Body Outline Dimensions
- 350 Watts peak pulse power ($t_p = 8/20\mu s$)
- Transient protection for data lines to
IEC 61000-4-2 (ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)
IEC 61000-4-4 (EFT) 40A (5/50ns)
IEC 61000-4-5 (Lightning) 24A (8/20 μs)
- Small package for use in portable electronics
- Suitable replacement for MLV's in ESD protection applications
- Protects one I/O or power line
- Low clamping voltage
- Working voltages: 5V and 12V
- Low leakage current
- Solid-state silicon-avalanche technology
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

LSD05T1G
S-LSD05T1G



ORDERING INFORMATION

Device	Marking	Shipping
LSD05T1G S-LSD05T1G	55	3000/Tape & Reel
LSD12T1G S-LSD12T1G	12	3000/Tape & Reel

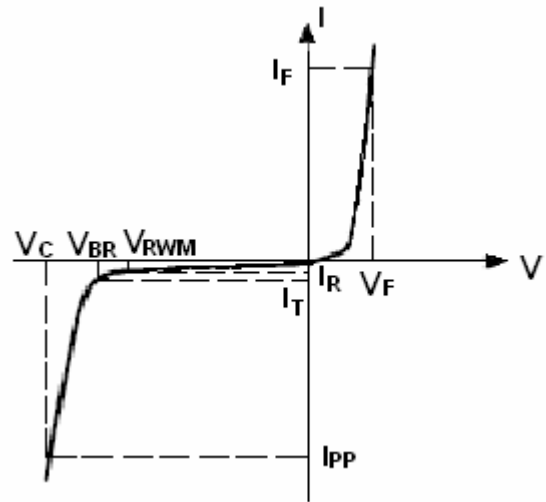
Absolute Ratings ($T_{amb}=25^{\circ}C$)

Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power ($t_p = 8/20\mu s$)	350	W
V_{ESD}	ESD Voltage(HBM Waveform per IEC 61000-4-2)	30	kV
T_L	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$
T_J	Maximum junction temperature	-55 to +125	$^{\circ}C$

Electrical Parameter

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Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 0.9V$ at $I_F = 10mA$

Device	V_{RWM} (V)	I_R (μA) @ $V_{RWM}=5V$	V_{BR} (V)@ $I_T=1mA$	V_C (V) @ $I_{PP}=5 A$ $t_p=8/20\mu s$	V_C (V) @ $I_{PP}=24$ $t_p=8/20\mu s$	I_{PP} (A) $t_p=8/20\mu s$	C (pF)
	Max	Max	Min	Typ	Max	Max	Typ
LSD05T1G	5.0	10	6.0	9.8	14.5	24	350
LSD12T1G	12.0	1.0	13.3	19.0	25.0	15	150

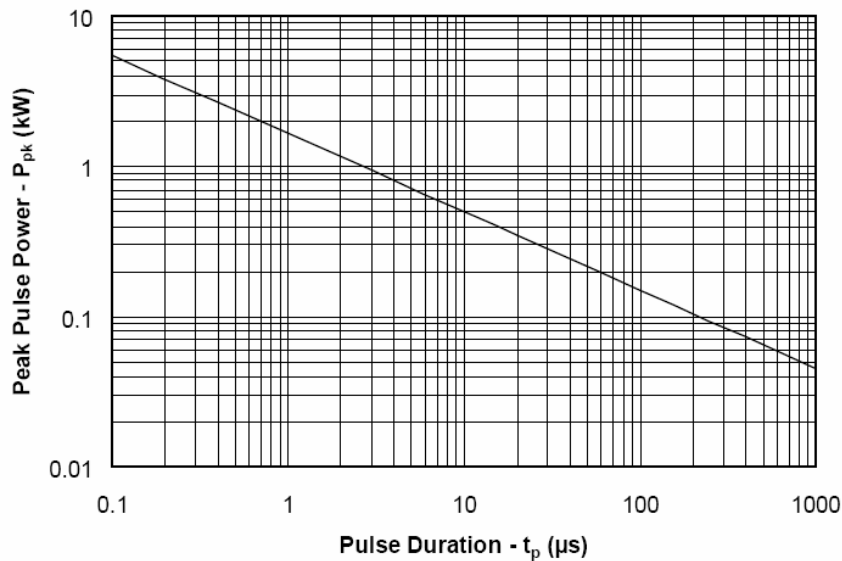
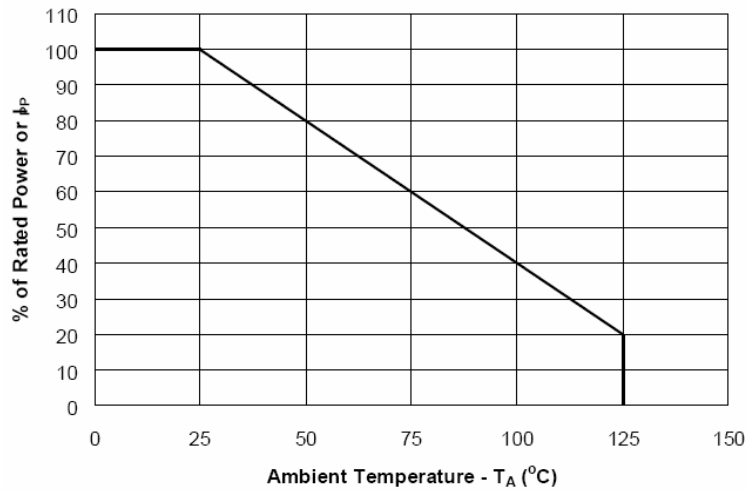
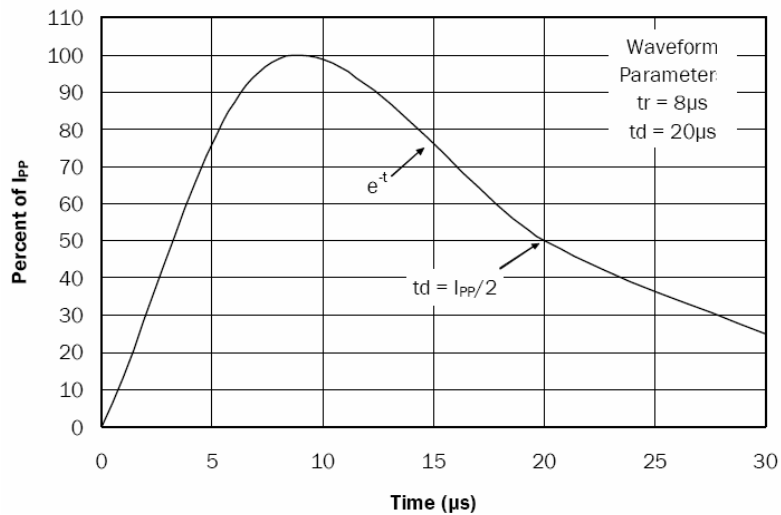
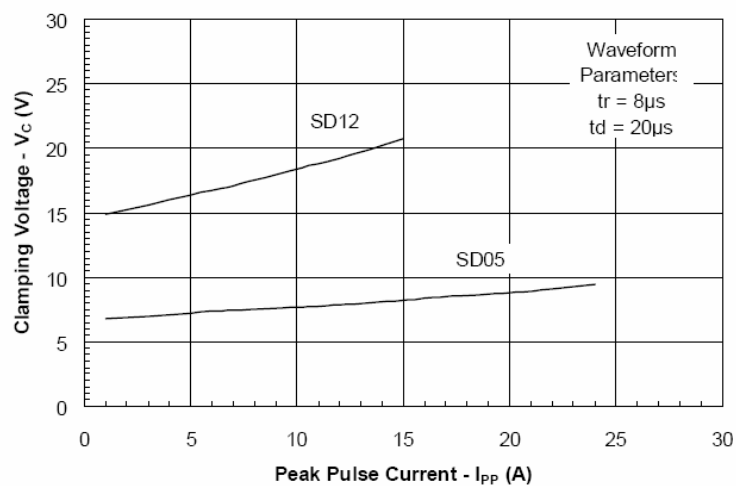
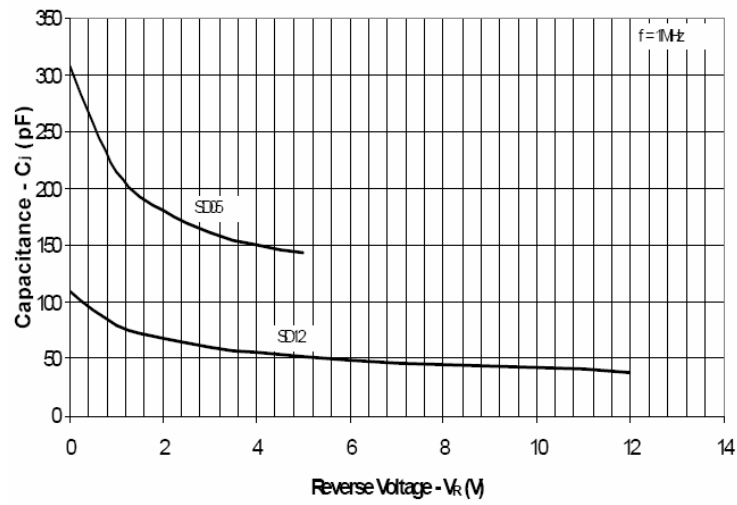
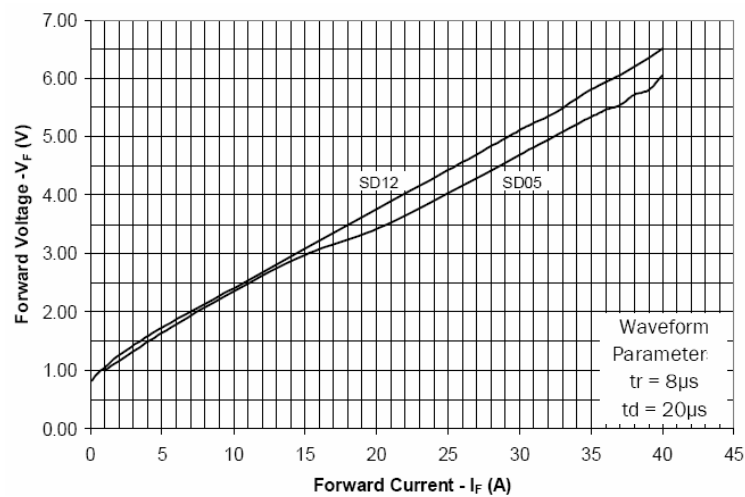
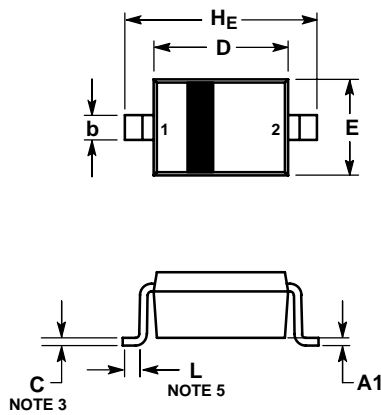


Fig.1 Non-Repetitive Peak Pulse Power vs. Pulse Time

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Fig.2 Power Derating Curve

Fig.3 Waveform

Fig.4 Clamping Voltage vs. Peak Pulse Current

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Fig.5 Capacitance vs. Reverse Voltage

Fig.6 Forward Voltage vs. Forward Current

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NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

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		
HE	2.30	2.50	2.70	0.090	0.098	0.105

SOLDERING FOOTPRINT*
