

Transient Voltage Suppressors for ESD Protection

ESDXXV32D-C Series

Description

The ESDXXV32D-C 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. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

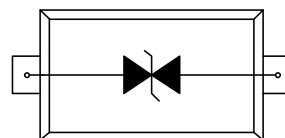
Feature

- ◆ 255~410 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects one I/O line or power line (Bidirectional)
- ◆ Low clamping voltage
- ◆ Working voltages: 3.3V ~ 48V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact): 3.3V ~ 18V
- ◆ IEC61000-4-2 (ESD) $\pm 20kV$ (air), $\pm 15kV$ (contact): 24V ~ 48V

Applications

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

Functional Diagram



Mechanical Data

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 5 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	255~410	Watts
T_L	Lead Soldering Temperature	260 (10 sec.)	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to +150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-40 to +125	$^{\circ}C$

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Electrical Characteristics(@25°C Unless Otherwise Specified)

Part Number	Device Marking Code	Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR} (Min.) (V)	Test Current I_T (mA)	V_C @1A (Max.)	V_C		Maximum Reverse Leakage I_R @ V_{RWM} (uA)	Typical Junction Capacitance (pF)
						(Max.)	(@A)		
ESD03V32D-C	2A	3.3	3.8	1.0	7.0	16	25	100	350
ESD05V32D-C	2B	5	6.0	1.0	9.8	17	24	1	260
ESD08V32D-C	2C	8	8.5	1.0	13.4	20	18	1	120
ESD12V32D-C	2D	12	13.3	1.0	19	25	13	1	110
ESD15V32D-C	2J	15	16.7	1.0	24	30	10	1	100
ESD18V32D-C	2K	18	19.0	1.0	28	35	8	1	90
ESD24V32D-C	2H	24	26.7	1.0	43	52	8	1	75
ESD36V32D-C	2N	36	40.0	1.0	60	75	5.5	1	35
ESD48V32D-C	2P	48	50.0	1.0	65	85	3	1	25

Characteristics Curves

Fig1. 8/20μs Pulse Waveform

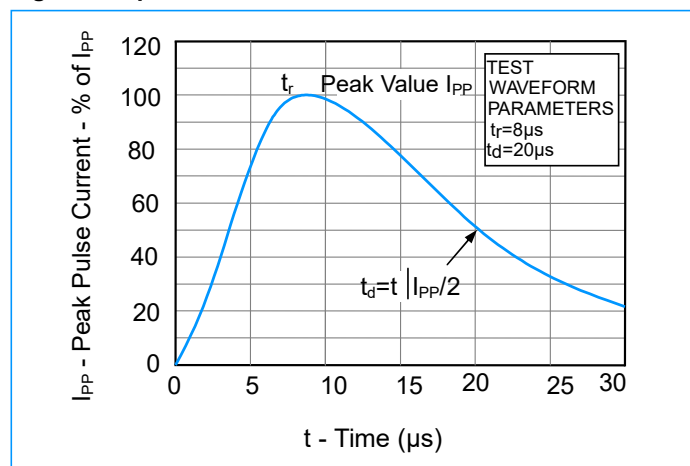


Fig2. Power Rating Derating Curve

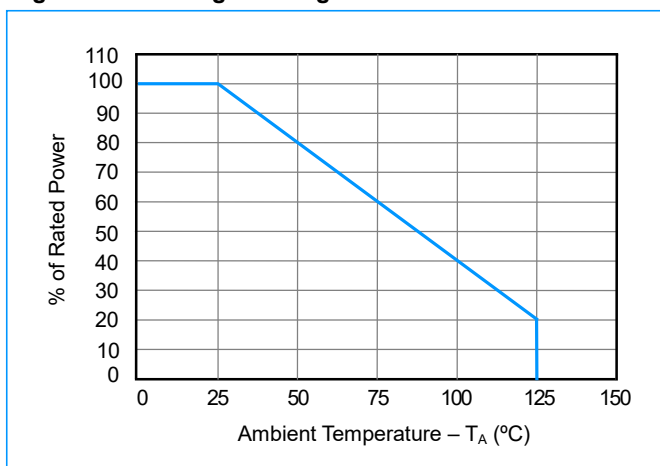
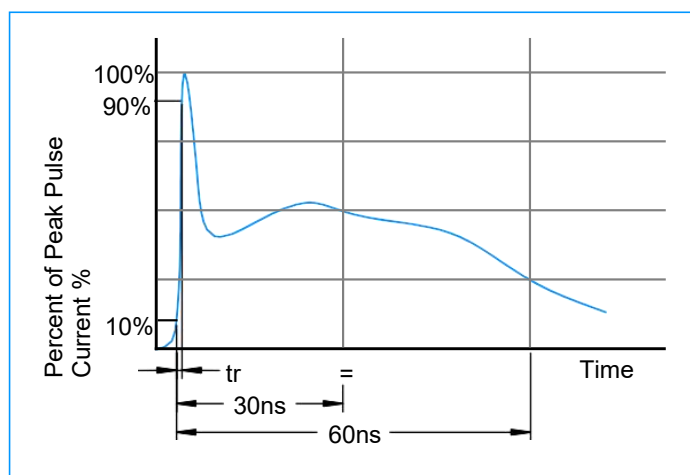


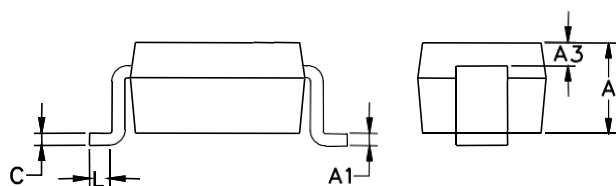
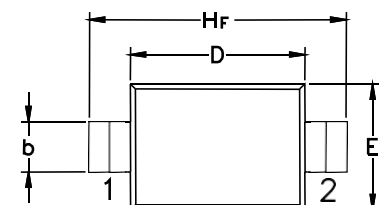
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



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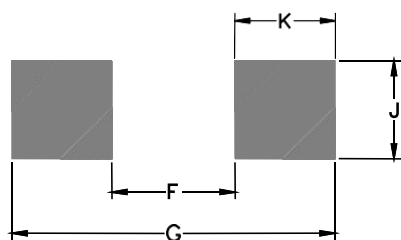
ESDXXV32D-C Series

SOT-23 Package Outline & Dimensions



Symbol	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	0.40	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



Symbol	Millimeters	Inches
F	1.60	0.063
G	2.85	0.112
J	0.83	0.033
K	0.63	0.025

Ordering Information

Device	Package	Quantity	Reel Size
ESDXXV32D-C Series	SOD-323	3,000pcs/Reel	7 inch