

Transient Voltage Suppressors Array for ESD Protection

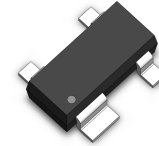
Low Capacitance

ESDXXV14T-2C

Description

The ESDXXV14T-2C 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.

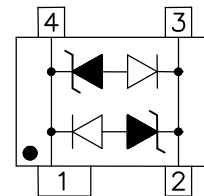
SOT-143



Feature

- u 400 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects One Bidirectional I/O Lines
- u Low Clamping Voltage
- u Working voltages : 5V, 8V, 12V, 15V, 18V, 24V and 36V
- u Low leakage current
- u IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact) : 5V ~ 15V
- u IEC61000-4-2 (ESD) ±25kV (air), ±15kV (contact) : 18V~36V
- u IEC61000-4-4 (EFT) 40A (5/50ns)

Functional Diagram



Applications

- u RS-232, RS-422 & RS-423 Data Lines
- u Audio/Video Inputs
- u Wireless Network Systems
- u Ethernet - 10/100/100 Base T
- u WAN/LAN Equipment
- u Multi-Protocol Serial Transceivers
- u ADSL Interfaces

Mechanical Characteristics

- u JEDEC SOT-143 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 10.0 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
PPP	Peak Pulse Power (tp=8/20µs waveform)	400	W
T_L	Lead Soldering Temperature	260 (10sec)	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-4 (EFT)	40	A

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V _{RWM} (V) (Max.)	V _B (V) (Min.)	I _T (mA)	V _C @1A (Max.)	V _C		I _R (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD05V14T-2C	DT5	5	6	1	9.8	20	25	1	3
ESD08V14T-2C	DT8	8	8.5	1	13.4	23	23	1	3
ESD12V14T-2C	DTA	12	13.3	1	29.0	30	13	1	3
ESD15V14T-2C	DTB	15	16.7	1	25.0	33	10	1	3
ESD18V14T-2C	DTC	18	19.5	1	32.0	40	9	1	3
ESD24V14T-2C	DTD	24	26.7	1	40.0	55	6	1	3
ESD36V14T-2C	DTE	36	40.0	1	55.0	75	4	1	3

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

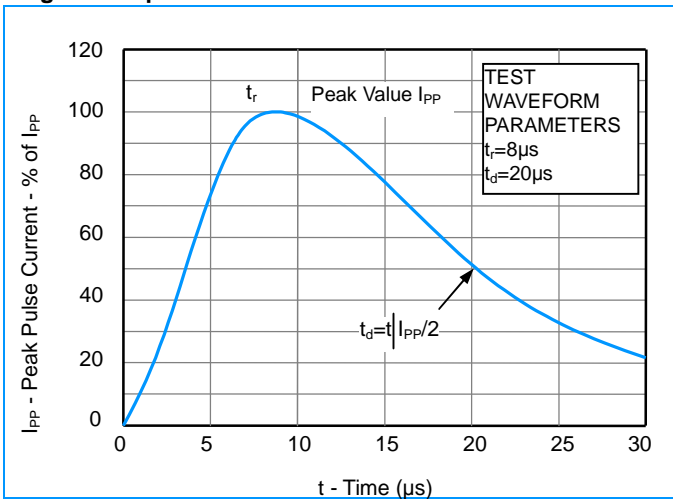


Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

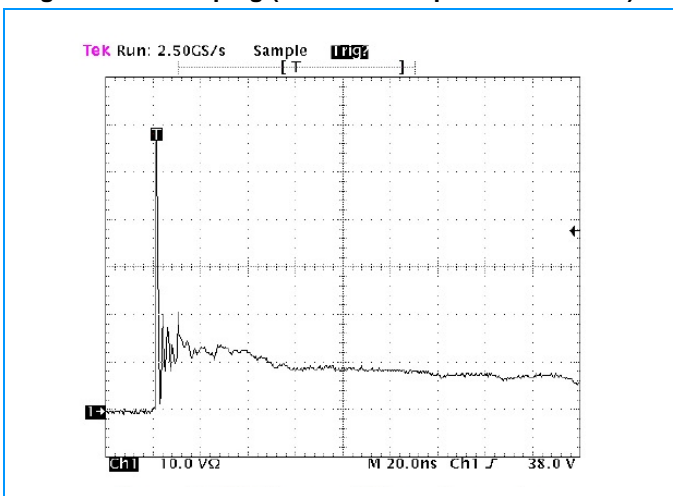


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

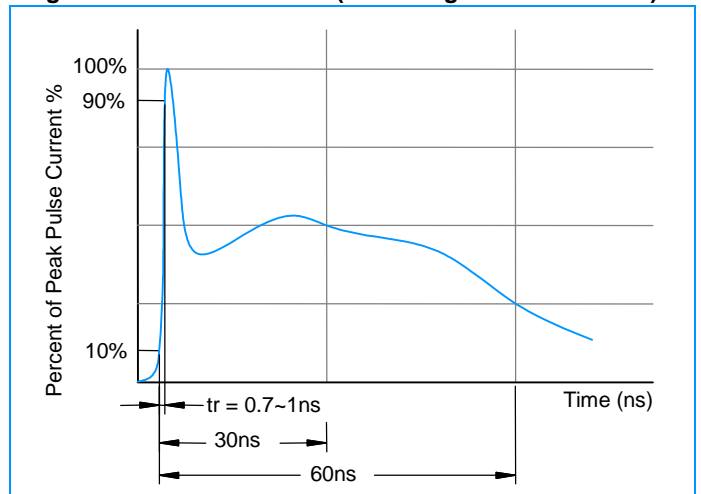
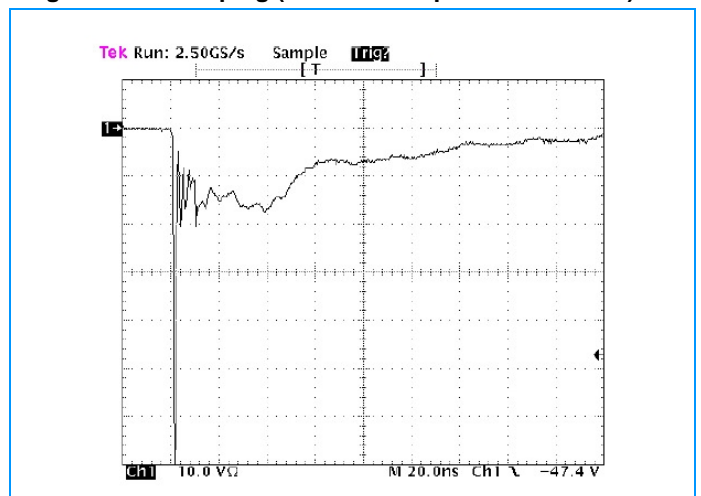


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

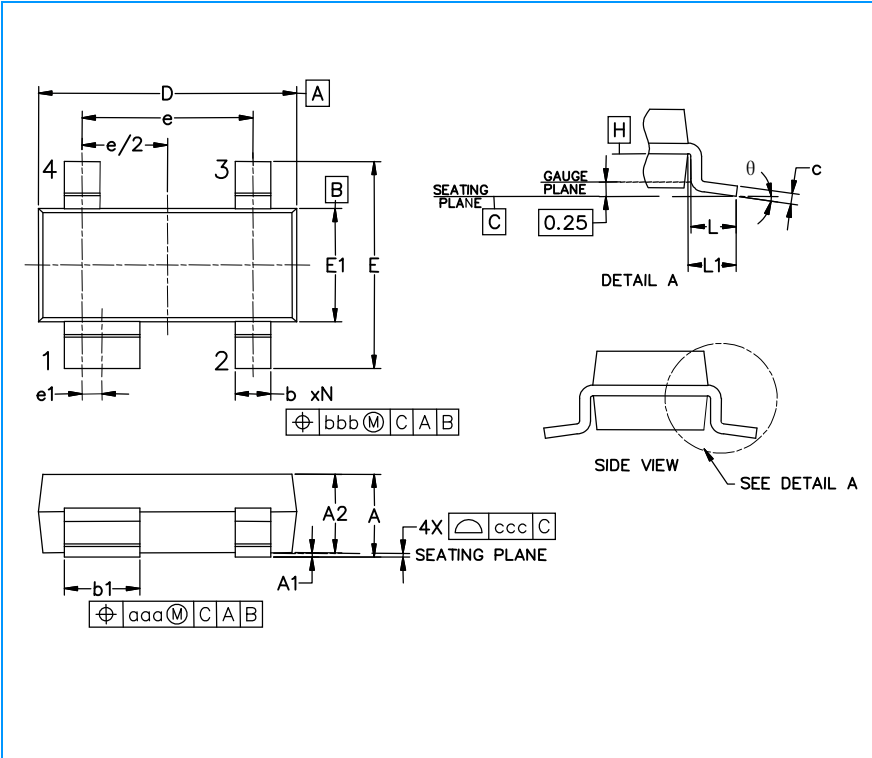


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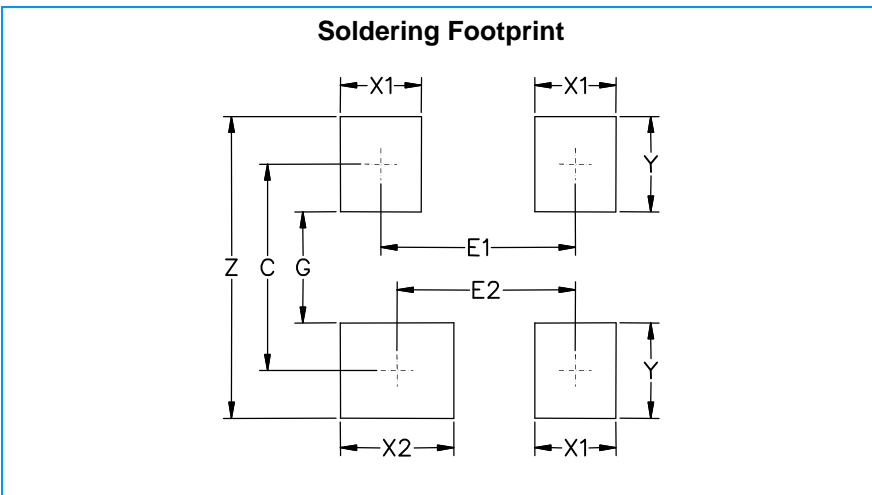
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SOT-143 Package Outline & Dimensions



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.031	-	0.048	0.80	-	1.22
A1	0.000	-	0.008	0.013	-	0.15
A2	0.020	0.035	0.042	0.75	0.90	1.07
b	0.011	-	0.020	0.30	-	0.51
b1	0.029	-	0.037	0.76	-	0.94
c	0.003	-	0.008	0.08	-	0.20
D	0.110	0.114	0.120	2.80	2.90	3.04
E	0.082	0.093	0.104	2.10	2.37	2.64
E1	0.047	0.051	0.055	1.20	1.30	1.40
e	0.075		1.92 BSC			
e1	0.008		0.20 BSC			
L	0.015	0.020	0.024	0.40	0.50	0.60
L1	(0.021)		(0.54)			
N	4		4			
θ	0°	-	8°	0°	-	8°
aaa	0.006		0.15			
bbb	0.008		0.20			
ccc	0.004		0.10			



Symbol	Inches	Millimeters
C	(0.087)	(2.20)
E1	0.076	1.92
E2	0.068	1.72
G	0.031	0.80
X1	0.039	1.00
X2	0.047	1.20
Y	0.055	1.40
Z	0.141	3.60