

Transient Voltage Suppressors for ESD Protection

ESDXXV52D-AF Series

Description

The ESDXXV52D-AF 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, ultra-low capacitance values, it is very suitable for signal port and board space speed transmission is very small places, such as Ethernet, mobile phones, MP3 players, digital cameras and other portable.

Feature

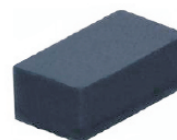
- ◆ 1100~1600 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects One Unidirectional I/O Line
- ◆ Low clamping voltage
- ◆ Working voltages: 3.3V, 15V, 36V
- ◆ Low leakage current
- ◆ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (LIGHTNING) 80A、40A、16A (8/20μs)

Applications

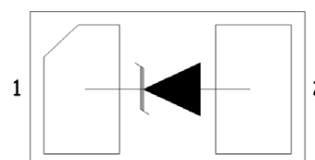
- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ USB Interface

Mechanical Characteristics

Symbol	Parameter	Value	Units
P _{pp}	Peak Pulse Power (tp=8/20 μ s waveform)--ESD03V52D-AF	1600	Watts
P _{pp}	Peak Pulse Power (tp=8/20 μ s waveform)--ESD15V52D-AF	1200	Watts
P _{pp}	Peak Pulse Power (tp=8/20 μ s waveform)--ESD36V52D-AF	1100	Watts
T _J	Operating Junction Temperature Range	-40 to +125	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature	260	°C



Functional Diagram



Mechanical Data

- ◆ DFN1610TN (1.6x1.0mm) Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 3.5 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

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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}	Test Current I_T (mA)	V_c @1A (Max.)	V_c		Maximum Reverse Leakage I_R @ V_{RWM} (uA)
						(Max.)	(@A)	
ESD03V52D-AF	ST3	3.0	4.0	1.0	5.8	20	80	20
ESD15V52D-AF	STC	15	16.3	1.0	18.5	30	40	1.0
ESD36V52D-AF	STK	36	40	1.0	48	70	16	1.0

Characteristic Curves

Fig1. 8/20µs Pulse Waveform

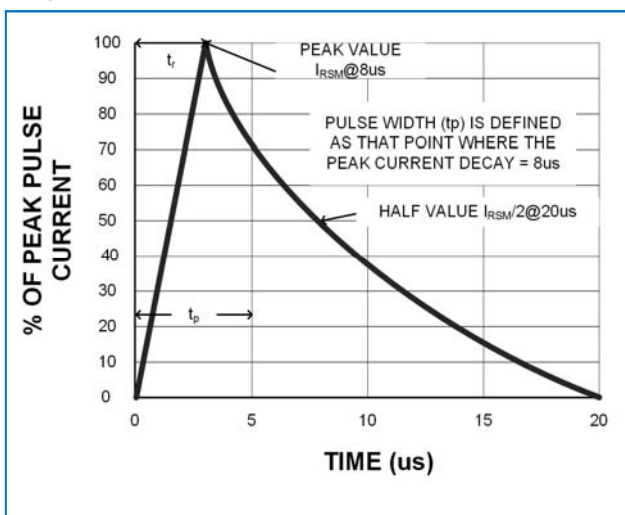


Fig2. Power Derating Curve

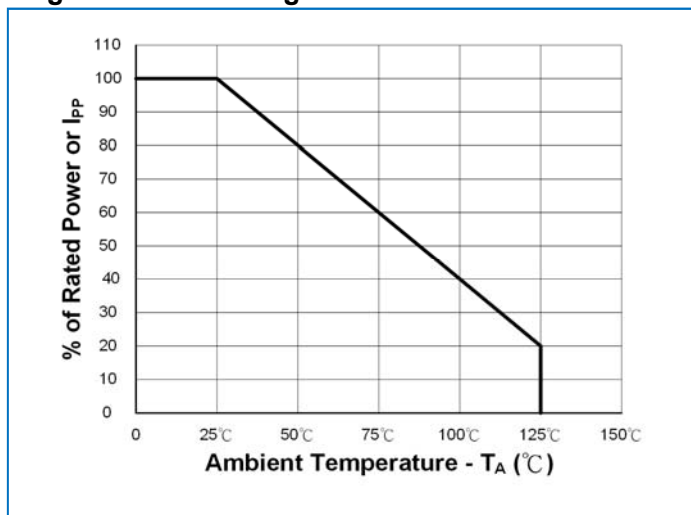


Fig3. Clamping Voltage vs. Peak Pulse Current (tp=8/20us) --ESD03V52D-AF

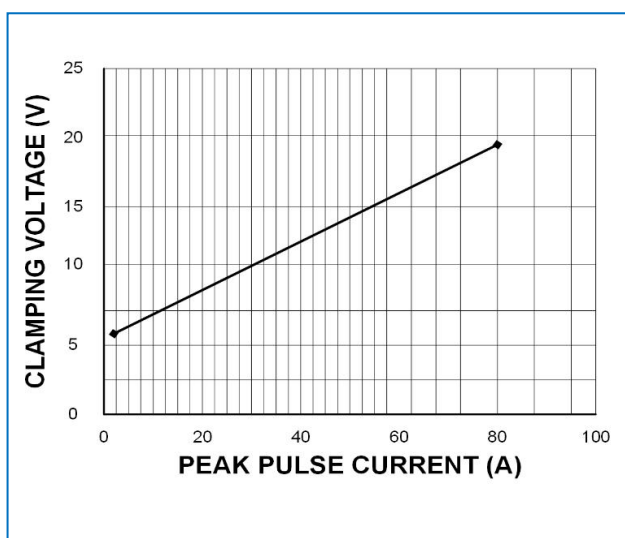
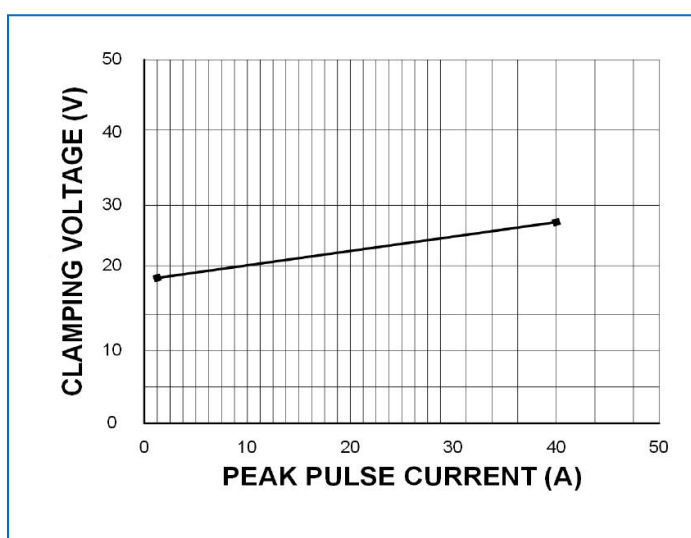


Fig4. Clamping Voltage vs. Peak Pulse Current (tp=8/20us) --ESD15V52D-AF



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Characteristic Curves

Fig5. Clamping Voltage vs. Peak Pulse Current (tp=8/20us) --ESD36V52D-AF

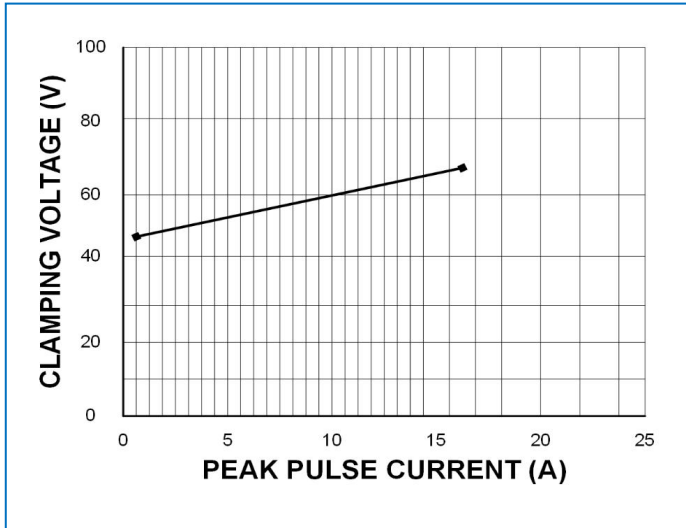


Fig6. Typic Breakdown Voltage vs. Temperature --ESD03V52D-AF

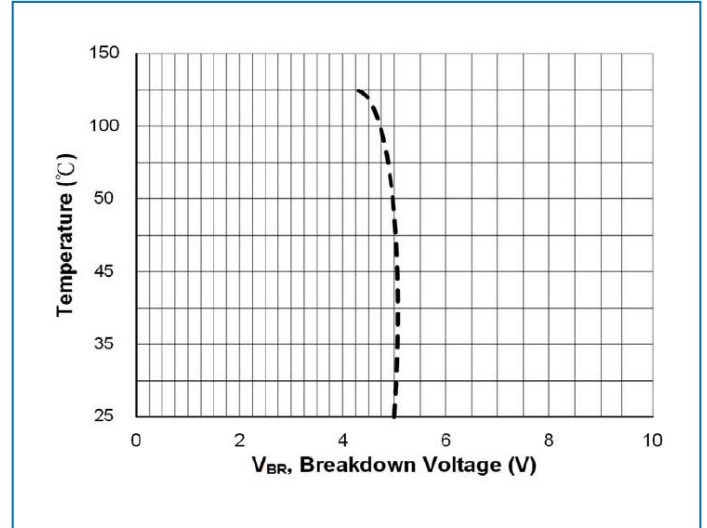


Fig7. Typic Breakdown Voltage vs. Temperature --ESD15V52D-AF

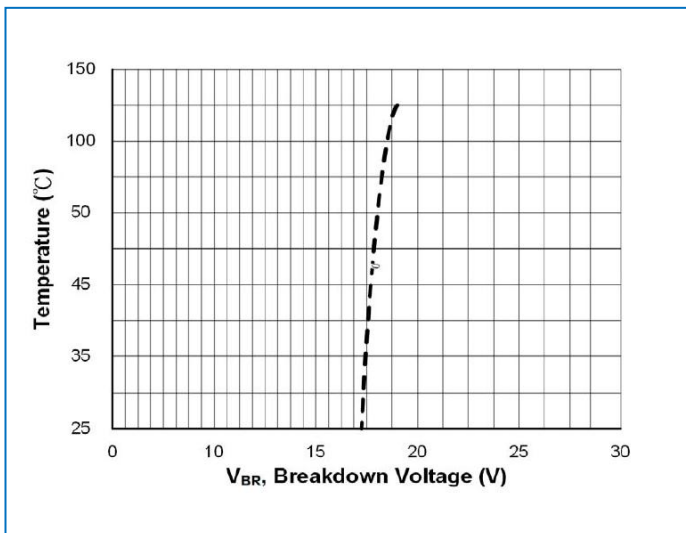
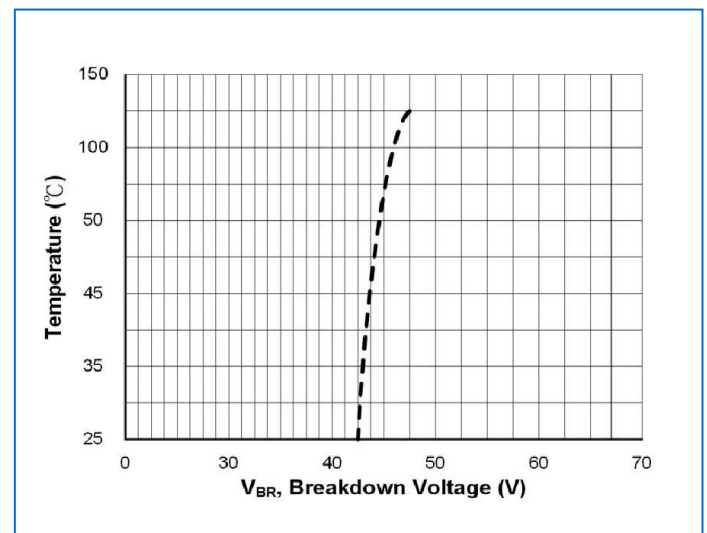


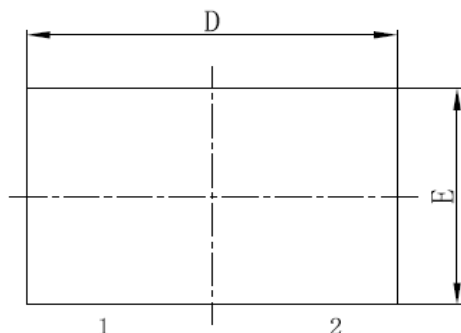
Fig8. Typic Breakdown Voltage vs. Temperature --ESD36V52D-AF



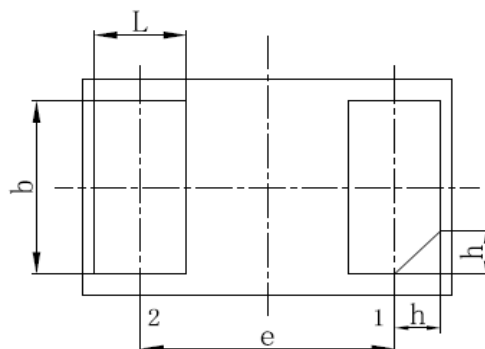
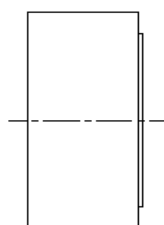
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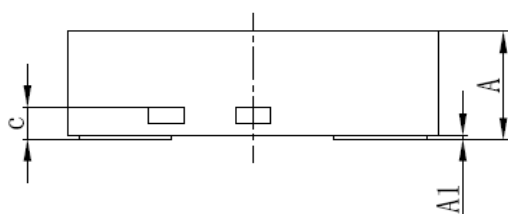
DFN1610TN Package Outline & Dimensions



TOP VIEW

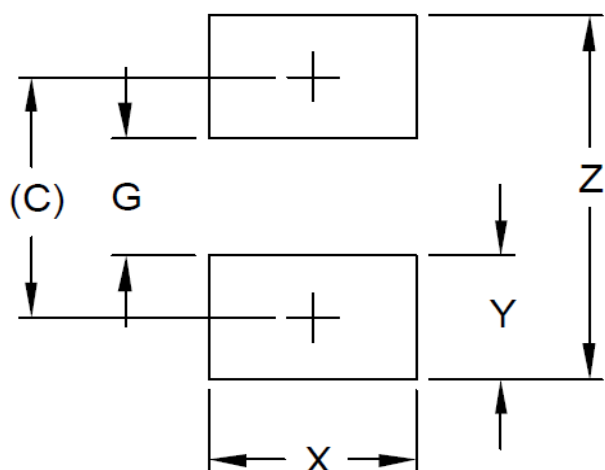


BOTTOM VIEW



SIDE VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	—	0.02	0.05
b	0.75	0.80	0.85
c	0.10	0.15	0.20
D	1.55	1.60	1.65
e	1.10BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
h	0.15	0.20	0.25
载体尺寸 (Mil)	34X35		



DIMENSIONS	
DIM	MILLIMETERS
C	(1.225)
G	0.60
X	1.00
Y	0.625
Z	1.85