

Transient Voltage Suppressors for ESD Protection

Description

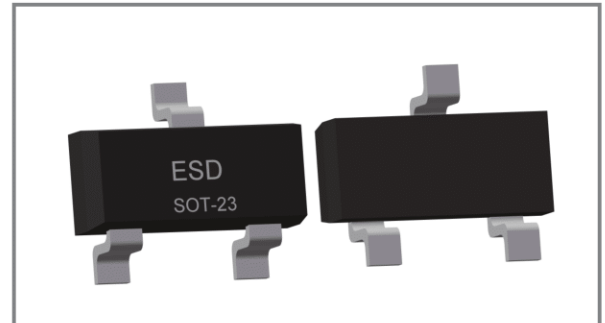
The HVGXXY56W-5D series is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Feature

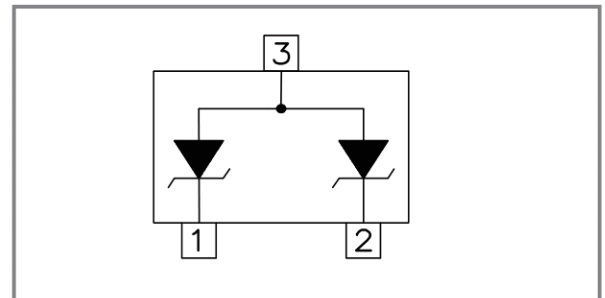
- ◆ 320~450 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects one bidirectional line or two unidirectional lines
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact): 3.3V ~ 15V
- ◆ IEC61000-4-2 (ESD) $\pm 20kV$ (air), $\pm 20kV$ (contact): 18V ~ 36V

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Portable Electronics
- ◆ Industrial Controls
- ◆ Set-Top Box
- ◆ Instrumentation
- ◆ Servers, Notebook, and Desktop PC



Functional Diagram



Mechanical Data

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 8.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

Parameter	Symbol	Value	Units
Peak Pulse Power ($T_p=8/20\mu s$ waveform)	P_{pp}	320~450	Watts
Lead Soldering Temperature	T_L	260 (10 sec.)	$^{\circ}C$
Storage Temperature Range	T_{STG}	-55 to +150	$^{\circ}C$
Operating Junction Temperature Range	T_J	-40 to +125	$^{\circ}C$

Electrical Characteristics @ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V_{RWM} (V) (Max.)	V_{BR} (V) (Min.)	I_T (mA)	V_C @1A (Max.)	V_C		I_R (μ A) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
HVG3.3Y56W-5D	M03	3.3	3.8	1.0	7.5	16	25	100	200
HVG05Y56W-5D	M05	5.0	6.0	1.0	9.8	17	24	1	150
HVG08Y56W-5D	M08	7.0	8.0	1.0	13.4	20	18	1	100
HVG12Y56W-5D	M12	12.0	13.3	1.0	20	30	13	1	50
HVG15Y56W-5D	M15	15.0	16.7	1.0	25	36	11	1	45
HVG18Y56W-5D	M18	18.0	19.0	1.0	30	40	8	1	42
HVG24Y56W-5D	M24	24.0	26.7	1.0	45	50	7	1	40
HVG36Y56W-5D	M36	36.0	40.0	1.0	65	75	6	1	25

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

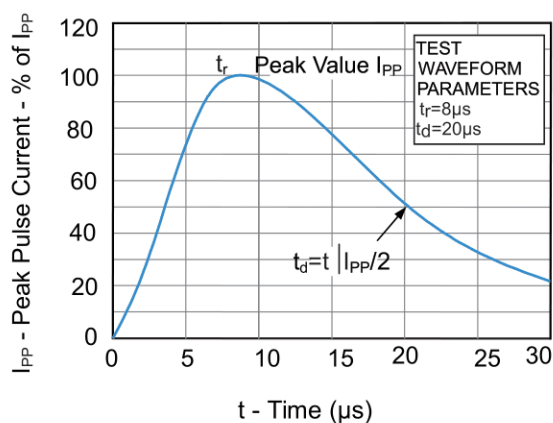


Fig2. Power Rating Derating Curve

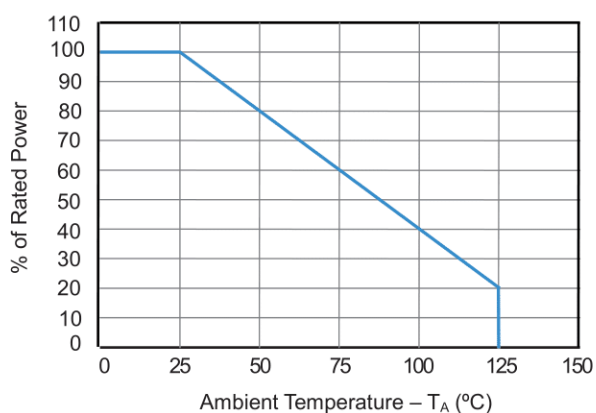
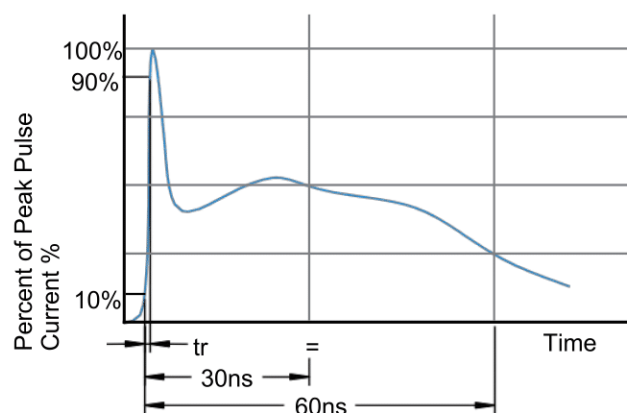
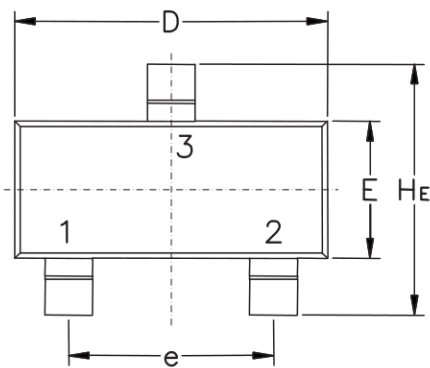


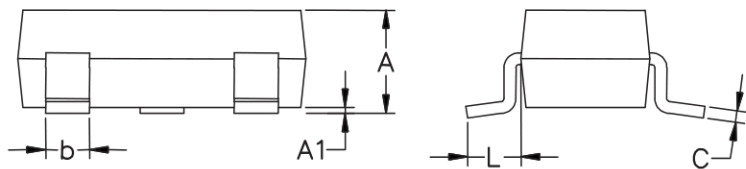
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



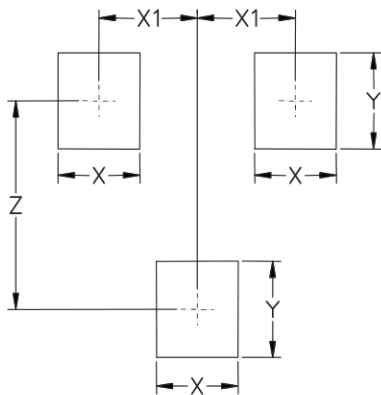
SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	2.01	1.22	1.33	0.057	0.042	0.066
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.39	0.44	0.50	0.017	0.019	0.020
C	0.09	0.13	0.3	0.003	0.005	0.009
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.40	1.50	1.60	0.069	0.051	0.077
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.32	2.60	2.86	0.215	0.216	0.126



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.97	0.037
Y	0.90	0.035
Z	2.22	0.09

Ordering Information

Device	Package	Quantity	Reel Size
HVGXXY56W-5D Series	SOT-23	3,000pcs/Reel	7 inch