

Transient Voltage Suppressors for ESD Protection

Description

The HVG05V59W-50 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

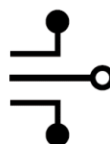
- ◆ 60 Watts Peak Pulse Power per Line (tp=8/20μs)
- ◆ Protects Two High Speed Lines
- ◆ Working voltage : 5V
- ◆ Low Clamping Voltage
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)

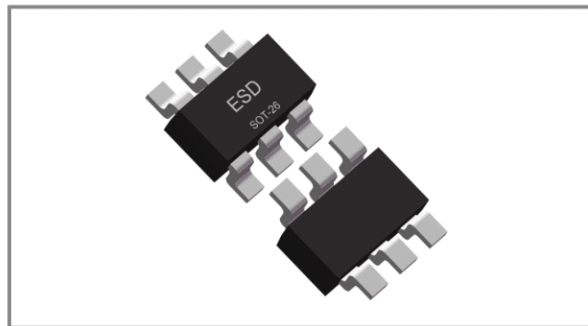
Applications

- ◆ USB 2.0 High Speed
- ◆ 10/100/1000 Ethernet Ports
- ◆ High-Definition Multimedia Interface (HDMI)
- ◆ Digital Visual Interface (DVI)
- ◆ Monitors and Flat Panel Displays
- ◆ Video Graphics Cards
- ◆ IEEE 1394 Fire wire Ports High Speed

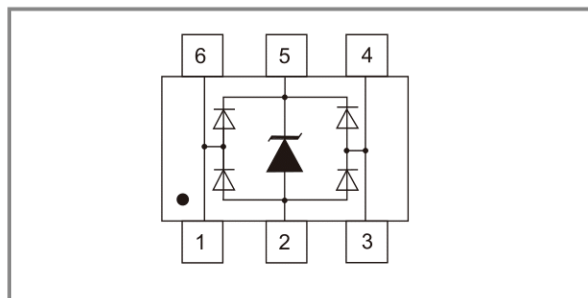
Mechanical Characteristics

Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20μs waveform)	P _{pp}	60	Watts
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Operating Junction Temperature Range	T _J	-40 to +125	°C

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Functional Diagram



Mechanical Data

- ◆ JEDEC SOT-26 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 13.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Electrical Characteristics @ 25°C Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	5.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$;	6.0	--	--	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0V$, $T=25^\circ C$;	--	--	1.0	μA
Junction Capacitance	C_J	$V_R=0V$, $f=1MHz$;	--	1.2	--	pF
Clamping Voltage	V_C	$I_{PP}=1A$, $T_P=8/20\mu s$;	--	--	14.0	V
		$I_{PP}=2A$, $T_P=8/20\mu s$;	--	--	30.0	V

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

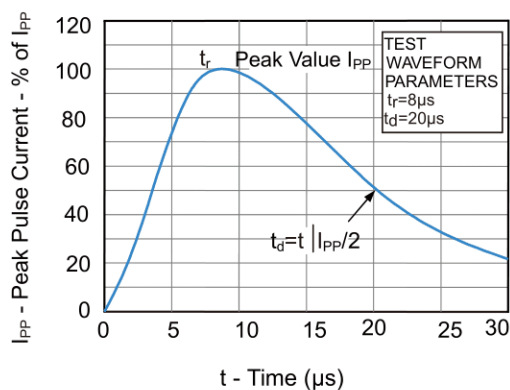


Fig2. Power Rating Derating Curve

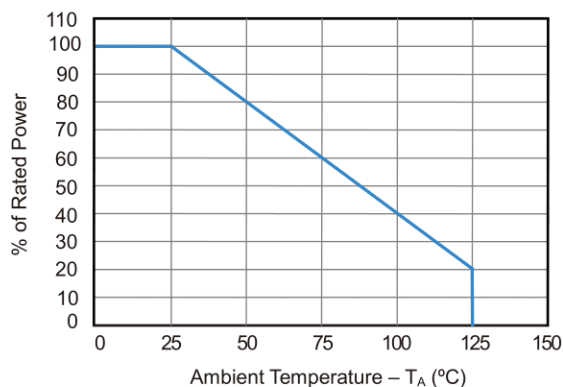
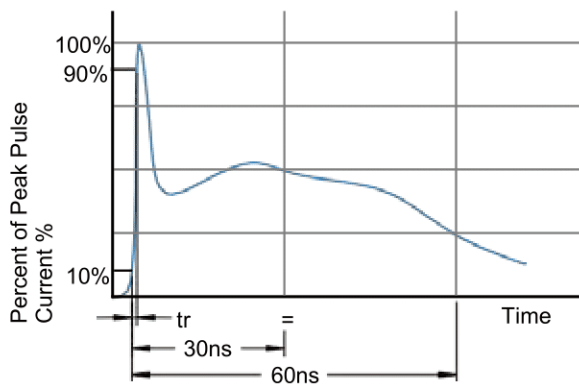
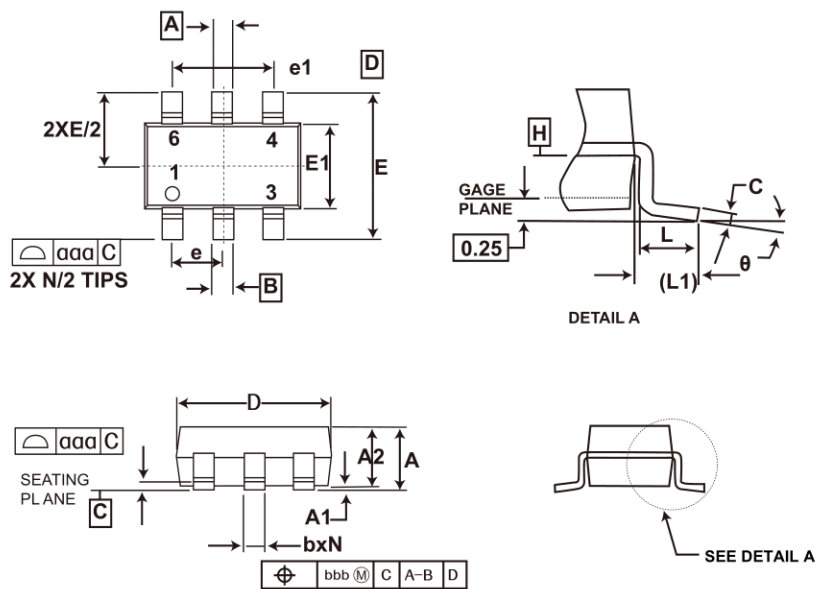


Fig3. ESD Pulse Waveform (according to IEC61000-4-2)

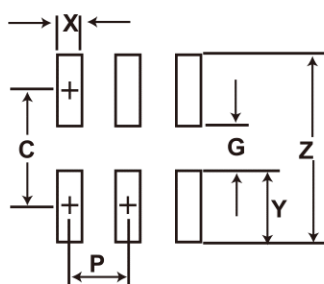


SOT-26 Package Outline & Dimensions



Symbol	Inches			Millimeters		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.035	--	0.057	0.90	--	1.45
A1	0.000	--	0.006	0.00	--	0.15
A2	0.035	0.045	0.051	0.90	1.15	1.30
b	0.010	--	0.020	0.25	--	0.50
c	0.003	--	0.009	0.08	--	0.22
D	0.110	0.114	0.122	2.80	2.90	3.10
E1	0.060	0.063	0.069	1.50	1.60	1.75
E	0.110BSC			2.80BSC		
e	0.037BSC			0.95BSC		
e1	0.075BSC			1.90BSC		
L	0.012	0.018	0.024	0.30	0.45	0.60
L1	(0.024)			(0.60)		
θ	0°	--	10°	0°	--	10°
aaa	0.004			0.10		
bbb	0.008			0.20		
ccc	0.008			0.20		

SOLDERING FOOTPRINT



Symbol	Inches	Millimeters
C	(0.098)	(2.50)
G	0.055	1.40
P	0.037	0.95
X	0.024	0.60
Y	0.043	1.10
Z	0.141	3.60

Ordering Information

Device	Marking	Package	Quantity	Reel Size
HVG05V59W-50	602	SOT-26	3,000pcs/Reel	7 inch