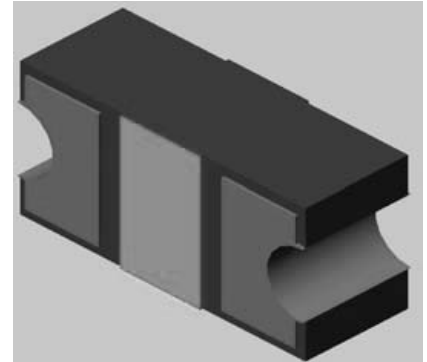


Description

The GSEPN48B0005 is an ultra low capacitance polymer ESD suppressor designed to protect high speed data interfaces. The device has a typical capacitance of only 0.05pf (I/O to GND) and meets the ESD immunity requirements of IEC61000-4-2 (15KV air, 8KV contact discharge).

Features

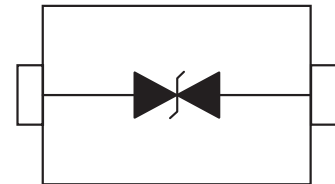
- ESD protection for high speed data lines to IEC61000-4-2
- ESD contact discharge typical 8KV, max 15KV
- ESD air discharge typical 15KV, max 25KV
- Multilayer structure
- Surface mount
- Extremely low capacitance
- Very Low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The Best ESD protection for high frequency, low voltage applications



Case: 0603

Applications

- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface (DP)
- Unified Display Interface (UDI)
- Mobile Display Digital Interface (MDDI)
- Gigabit Ethernet
- USB2.0 and USB3.0
- IEEE1394 Interface



Schematic Diagram

Absolute Maximum Ratings

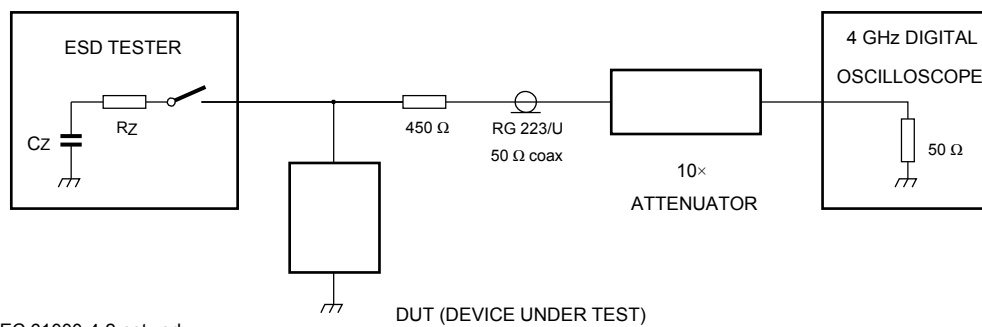
Parameter	Symbol	Value	Unit
Maximum Contact Discharge Voltage Per IEC61000-4-2	-	15KV	V
Maximum Air Discharge Voltage Per IEC61000-4-2	-	25KV	V
Maximum Operating Temperature	T _{OPER}	-55 to +125	°C
Maximum Storage Temperature	T _{STG}	-55 to +125	°C
Maximum Lead Temperature for Soldering During 10s	T _L	260	°C

Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Rated Voltage	V_R	-	-	-	48	V
Trigger Voltage	V_T	IEC61000-4-2 8KV contact discharge	-	300	-	V
Clamping Voltage	V_C	IEC61000-4-2 8KV contact discharge	-	35	-	V
Leakage Current	I_L	DC 48V shall be applied on component	-	0.01	0.1	μA
Capacitance	C_P	$V_R = 0\text{V}$, $f = 1\text{MHz}$	-	0.05	-	pF

- Notes:
1. Trigger and clamping voltage are measured per IEC 61000-4-2, 8KV contact discharge method.
 2. After reliability tests such as high Temp storage, Temp cycles, continuous ESD strike etc, the maximum leakage current is less than 10 μA .

ESD Clamping Test



IEC 61000-4-2 network
 $C_Z = 150\ \text{pF}$; $R_Z = 330\ \Omega$

ESD Clamping Test Waveforms

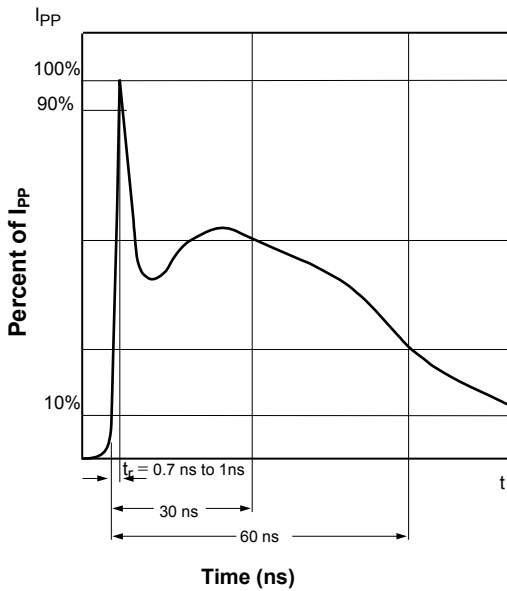


Fig.1 Pulse Waveform-ESD(IEC61000-4-2)

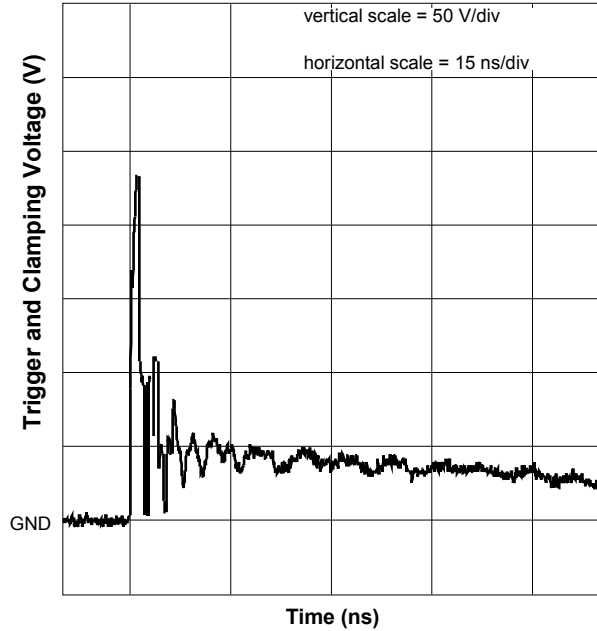
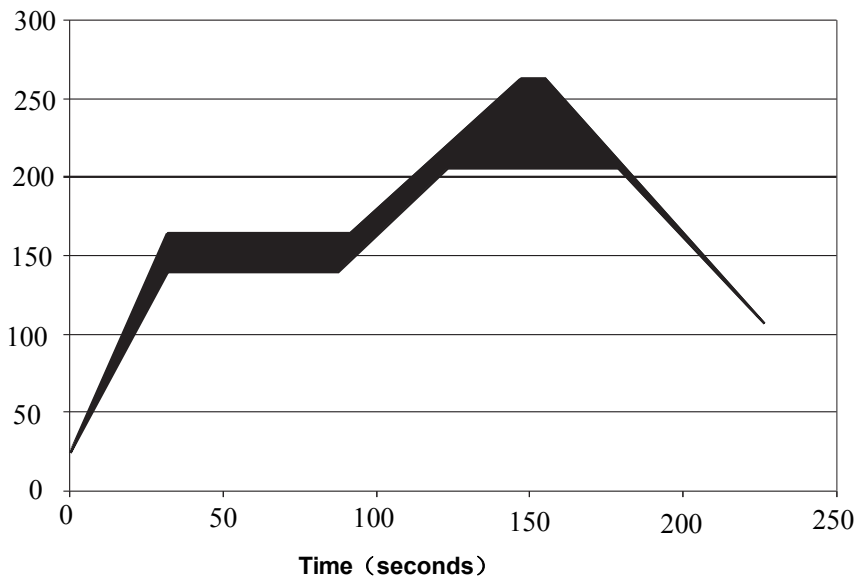


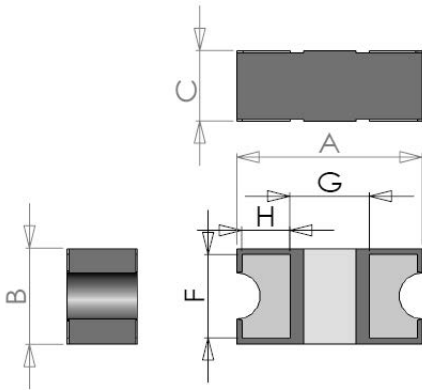
Fig.2 IEC61000-4-2 +8kV Contact Discharge

Solder Reflow Recommendations

Temperatures (°C)

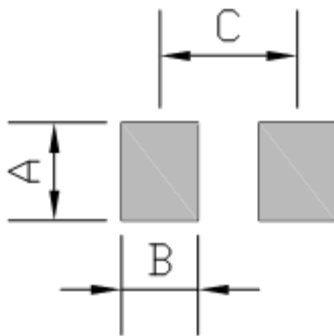


Package Outline Dimensions



Symbol	Dimension			Unit
	Min	Typ	Max	
A	1.50	1.60	1.70	mm
B	0.74	0.82	0.90	
C	0.32	0.36	0.40	
H	0.265	0.285	0.305	
F	0.70	0.72	0.74	
G	0.93	0.95	0.97	

Suggested Pad Layout



Symbol	Dimension	Unit
A	0.95	mm
B	0.65	
C	1.35	

Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
GSEPN48B0005	0603	1.00 mg	Tape & Reel	5,000pcs/reel	RoHS compliant