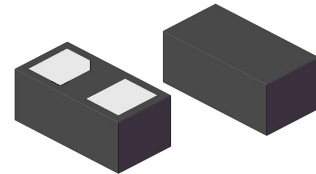


Features

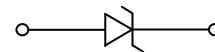
- Unidirectional configurations
- R2R + Zener technology
- Low clamping voltage
- Low leakage current
- Ultra low capacitance ($C_j=0.3\text{pF typ.}$)
- Protection one data/power line to:
 - IEC 61000-4-2 $\pm 10\text{kV}$ contact $\pm 15\text{kV}$ air
 - IEC 61000-4-4 (EFT) 40A (5/50ns)
 - IEC 61000-4-5 (Lightning) 3A (8/20 μs)
- RoHS compliant



DFN0603-X1

Applications

- USB3.0, Firewire, DVI, HDMI, S-ATA
- Thunderbolt, Display Port
- Mobile HDMI Link, MDDI, MIPI, SWP / NFC



Schematic Diagram

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$
Lead Soldering Temperature	T_L	260 (10sec.)	$^\circ\text{C}$
Peak Pulse Current ($t_P = 8/20\mu\text{S}$)	I_{PP}	3	A
IEC 61000-4-2 Contact (ESD)	V_{ESD}	± 10	kV
IEC 61000-4-2 Air (ESD)	V_{ESD}	± 15	kV

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Reverse stand-off Voltage	V_{RWM}				6.8	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	7.3	7.6	9.5	V
Reverse Leakage Current	I_{R}	$V_{\text{R}}=5\text{V}$		0.01	1	μA
Clamping Voltage (IEC 61000-4-5)	V_{C}	$I_{\text{PP}}=3\text{A}, T_P=8/20\mu\text{S}$		10		V
Trigger Voltage (IEC 61000-4-2)	V_{T}	$V_{\text{ESD}}=8\text{kV}$		135		V
Clamping Voltage (IEC 61000-4-2)	V_{C}	$V_{\text{ESD}}=8\text{kV}$		20		V
Junction Capacitance	C_J	$V_{\text{R}}=0\text{V}, f=1\text{MHz}$		0.3		pF

Typical Characteristic Curves

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

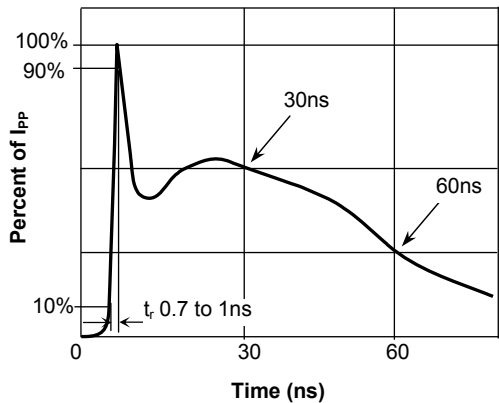


Fig.2 IEC61000-4-2 +8kV Contact ESD Clamping Waveform

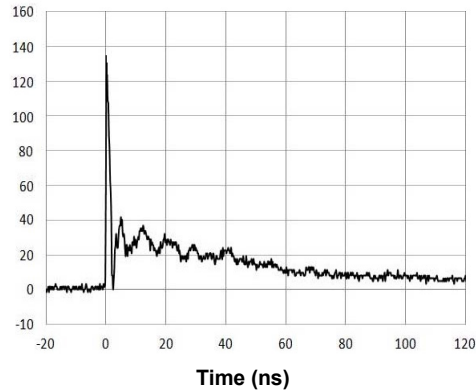


Fig.3 Eye Diagram - USB3.1 at 10Gbps per channel (with GSESUC7VD0603-2U)

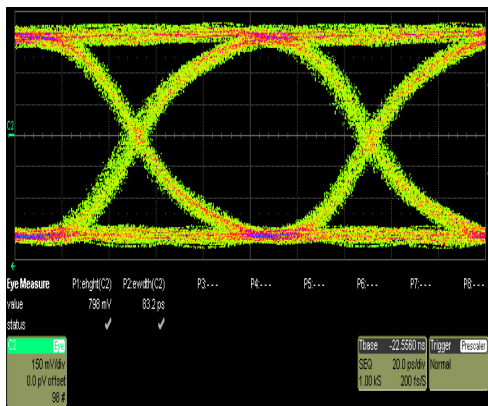
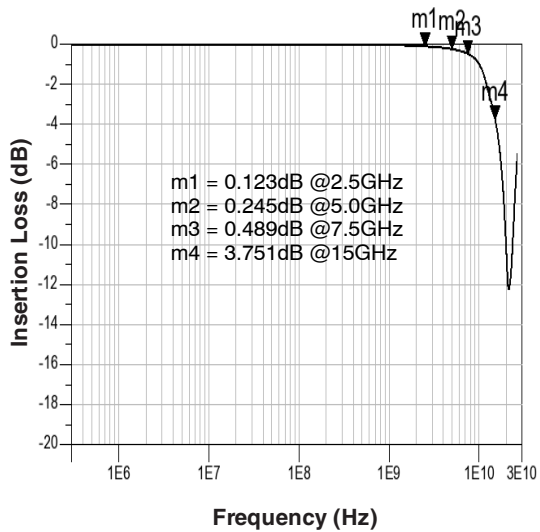
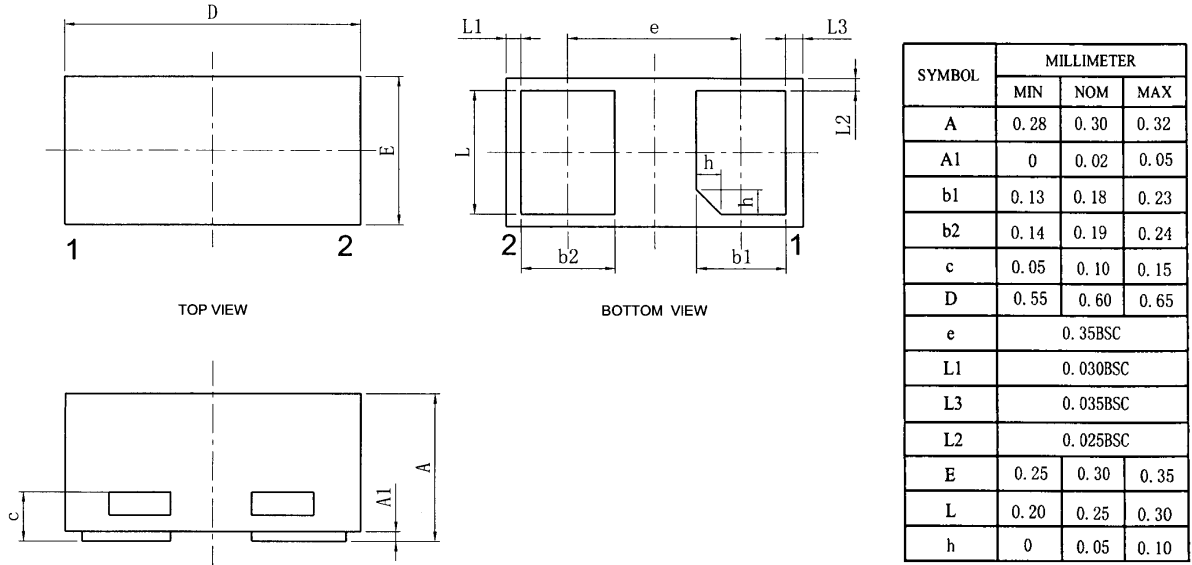


Fig.4 Insertion Loss S21 - I/O to I/O



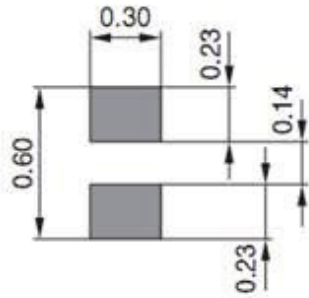
Package Outline Dimensions

DFN0603-X1



Recommended Footprint

Unit: mm



Order Information

Device	Package	Carrier	Quantity	HSF Status
GSESUC7VD0603-2U	DFN0603-X1	Tape & Reel	15000pcs / Reel	RoHS Compliant