

Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- Working voltage: $V_{RWM} = 3.3\text{V}$
- Low leakage current
- Low clamping voltage
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF

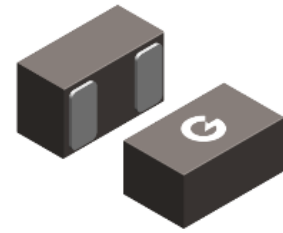


Applications

- USB3.2
- Thunderbolt
- HDMI 1.4 and HDMI 2.1
- Cellular handsets

Mechanical Data

- Case: DFN1006-2
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



DFN1006-2

Ordering Information

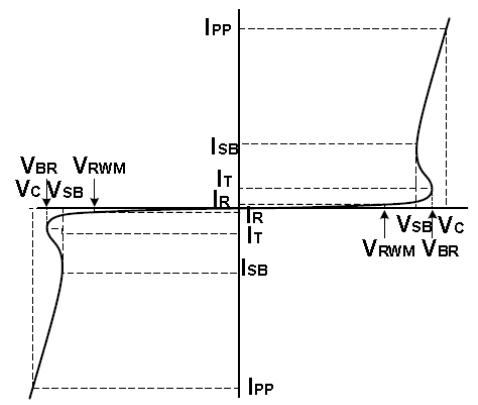
Part Number	Package	Shipping Quantity	Marking Code
TESDSSB3V3X3BL	DFN1006-2	10000 pcs / Tape & Reel	S1S

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

Parameter	Symbol	Value	Unit
IEC 61000-4-2; ESD (Air)	V_{ESD-A}	± 30	kV
IEC 61000-4-2; ESD (Contact)	V_{ESD-C}	± 30	kV
Peak Pulse Power ($t_p = 8/20\mu\text{s}$)	P_{PP}	50	W
Peak Pulse Current ($t_p = 8/20\mu\text{s}$)	I_{PP}	5	A
Junction Temperature Range	T_J	$-55 \sim +125$	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Parameters

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
$V_{(BR)}$	Reverse Breakdown Voltage @ I_T
I_T	Test Current
V_{SB}	Snap-Back Voltage @ I_{SB}
I_{SB}	Snap-Back Current



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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V_{RWM}		-	-	3.3	V
Reverse Breakdown Voltage	$V_{(BR)}$	$I_T = 1\text{mA}$	5.5	-	9.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3\text{V}$	-	-	100	nA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$	-	6	7	V
		$I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$	-	8	10	V
Dynamic Resistance *1, 2	R_{DYN}	TLP = 0.2/100ns	-	0.25	-	Ω
ESD Clamping Voltage *1	V_C	$I_{PP} = 16\text{A},$ $t_p = 0.2/100\text{ns}$ (TLP)	-	9.1	-	V
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$	-	0.2	0.3	pF

Notes:

1. TLP Setting: $t_p = 100\text{ns}$, $t_r = 1\text{ns}$, I_{TLP} and V_{TLP} sample window: $t_1 = 70\text{ns}$ to $t_2 = 90\text{ns}$
2. Dynamic resistance calculated from $I_{PP} = 4\text{A}$ to $I_{PP} = 16\text{A}$ using "Best Fit"

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

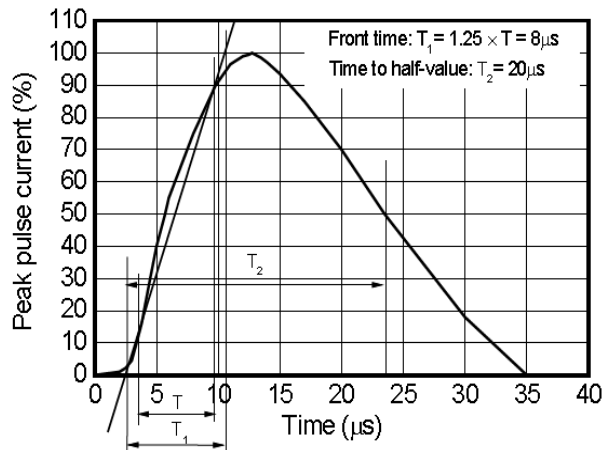


Fig 1 8/20 μs waveform per IEC61000-4-5

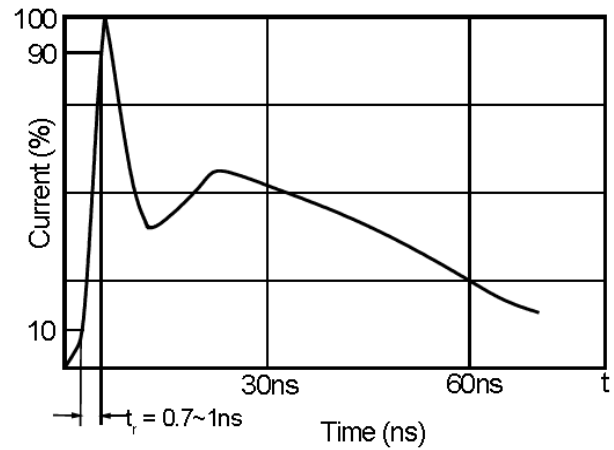


Fig 2 ESD pulse waveform according to IEC61000-4-2

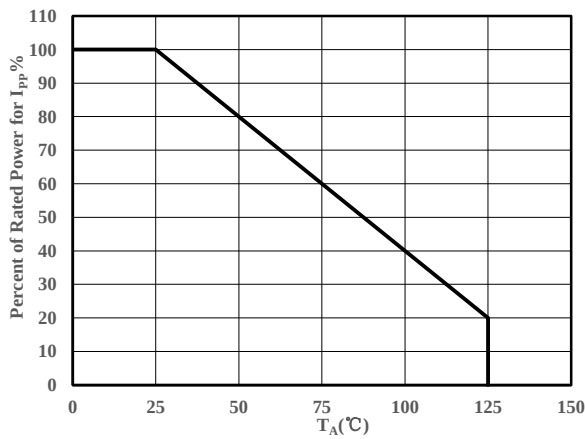


Fig 3 Power Derating Curve

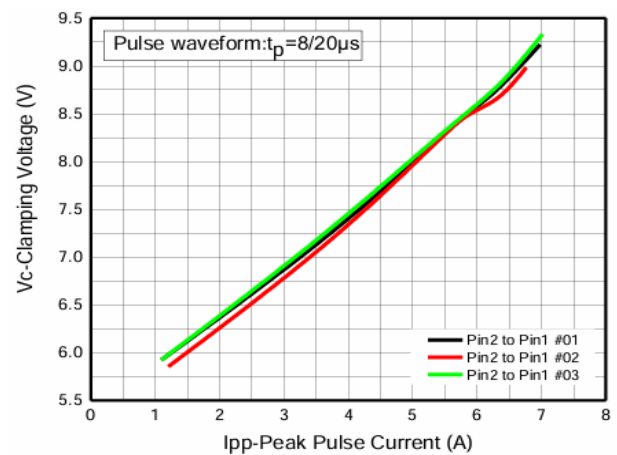


Fig 4 Clamping Voltage vs. Peak Pulse Current

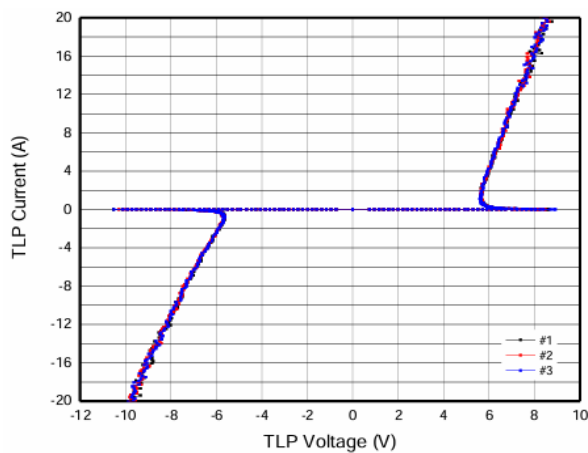
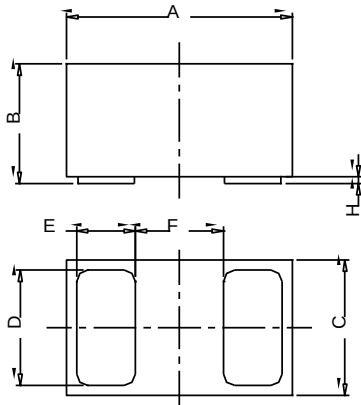


Fig 5 TLP Measurement

Package Outline Dimensions (Unit: mm)



DFN1006-2			
Dimension	Min.	Typ.	Max.
A	0.95	1.00	1.075
B	0.45	0.50	0.55
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E	0.20	0.25	0.30
F	-	0.40	-
H	0	0.03	0.05

Package Outline Dimensions (Unit: mm)

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