

Features

- ◆ Ultra low capacitance: 0.1 pF typical (I/O to I/O)
- ◆ Ultra low leakage: nA level
- ◆ Low operating voltage: 3.3V
- ◆ Low clamping voltage
- ◆ Up to 4 data lines and one power line protects
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20\text{kV}$
 - Contact discharge: $\pm 15\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) : 6.5A(8/20 μs)
- ◆ ROHS Compliant

Mechanical Characteristics

- ◆ Package: DFN2510-10 (2.5 \times 1.0 \times 0.5mm)
- ◆ Ultra low leakage: nA level
- ◆ Case Material: "Green" Molding Compound.
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below

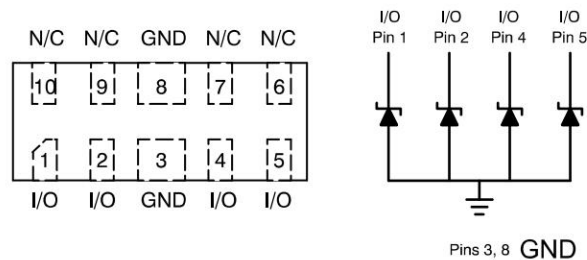
Applications

- ◆ High Definition Multimedia Interface (HDMI)
- ◆ Digital Visual Interface (DVI)
- ◆ Unified Display Interface (UDI)
- ◆ MDDI Ports
- ◆ PCI Express
- ◆ Serial ATA

Ordering Information

Part Number	Qty per Reel	Reel Size
ESD8104MUTAG-P	3000	7"

Dimensions and Pin Configuration



MARKING CODE:



30 = Specific Device Code

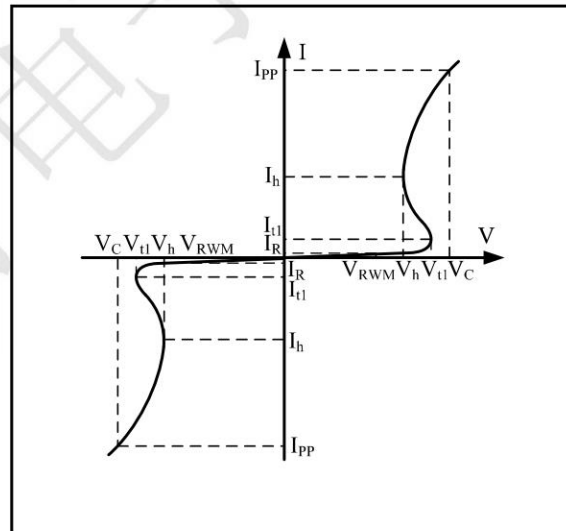
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Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20μs)	Ipp	6.5	A
ESD per IEC 61000-4-2 (Air)	VESD	±20	kV
ESD per IEC 61000-4-2 (Contact)		±15	
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter
V _{RWM}	Nominal Reverse Working Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{t1}	Trigger Voltage
I _{t1}	Trigger Current @ V _{t1}
V _h	Holding Voltage
I _h	Holding Current @ V _h
V _C	Clamping Voltage @ I _{pp}
I _{pp}	Maximum Peak Pulse Current
V _F	Forward Voltage @ I _F
C _{ESD}	Parasitic Capacitance



Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			3.3	V	
Trigger Voltage	Vt1	6		9	V	IT = 1mA
Holding Voltage	Vh	2		3	V	Ih = 1mA
Reverse Leakage Current	IR			0.08	uA	VRWM = 3.3V
Clamping Voltage	VC		5		V	Ipp=6A(8x 20us pulse)
Clamping Voltage	VC		5.2		V	Ipp=8A(100ns pulse)
Clamping Voltage	VC		7.5		V	Ipp=16A(100ns pulse)
Junction Capacitance	CJ		0.18	0.3	pF	VR = 0V, f = 1MHz, Between IO and GND
Junction Capacitance	CJ		0.1	0.2	pF	VR = 0V, f = 1MHz, Between IO and IO

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig1. 8/20 μs Pulse Waveform

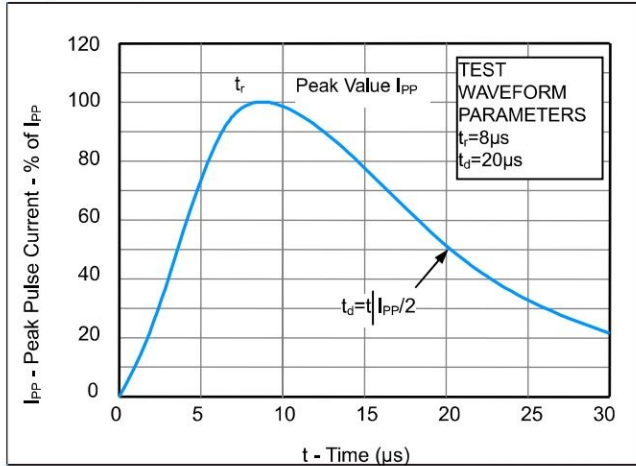


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

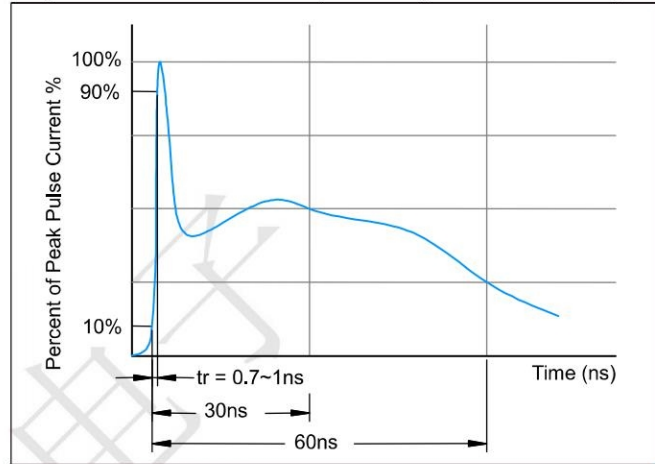
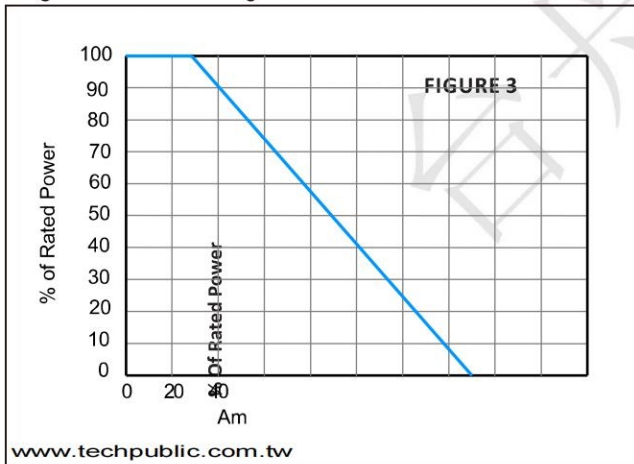
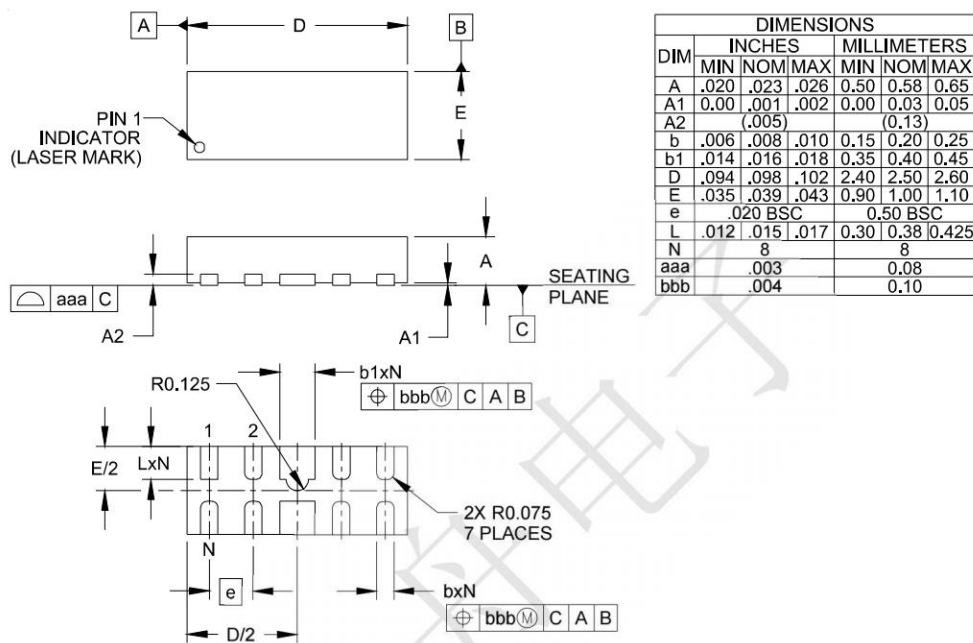


Fig3. Power Derating Curve



Outline Drawing - DFN2510-10



Land Pattern - DFN2510-10

