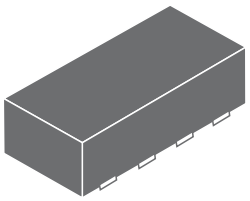
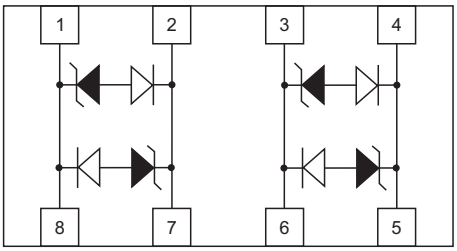
Electro-Static Discharge
TUSD03S2B
Lightning and ESD Protection for Gigabit Ethernet Interface

DFN2010P8



Pin Configuration



Features

- 200 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects Up To Two Bidirectional I/O Lines
- Low Capacitance (0.4pF) For High-Speed Interfaces
- Working Voltages : 3.3V
- Ultra-small Package Requires Less Than 2.0x1.0mm of PCB area

IEC Compatibility

- IEC61000-4-2(ESD):Contact:±30kV,Air:±30kV
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (Lighting) 13A (8/20μs)

Applications

- 10/100/1000 Ethernet
- Integrated magnetics/RJ-45 connectors
- LAN/WAN Equipment
- Security Cameras
- Industrial Controls
- Peripherals
- Notebooks & Desktop Computers

Mechanical Characteristics

- JEDEC DFN2010P8 Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 1Millgrams(Approximate)
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free

Maximum Ratings(T_A=25℃ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power(tp=8/20μs)	P_{PP}	200	Watts
Lead Soldering Temperature	T_L	260(10 sec.)	℃
Operating Temperature Range	T_J	-55~150	℃
Storage Temperature Range	T_{STG}	-55~150	℃

Electrical Characteristics(T_A=25℃ unless otherwise specified)

TESD03S2B(Marking:U33)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			3	V
Breakdown Voltage	V_{BR}	I_T=1mA	3.5		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		7	V
		I_{PP}=13A,tp=8/20μs		17	V
Reverse Leakage Current	I_R	T_C=25℃		0.1	μA
		T_C=125℃		1	μA
Junction Capacitance	$C_{I/O}$	V_R=2.5V,f=1MHz		0.4	pF

Ratings and Characteristic Curves

Fig.1 Pulse Waveform

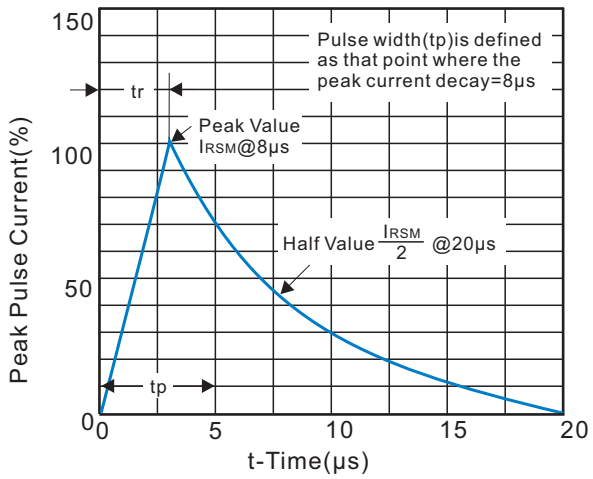
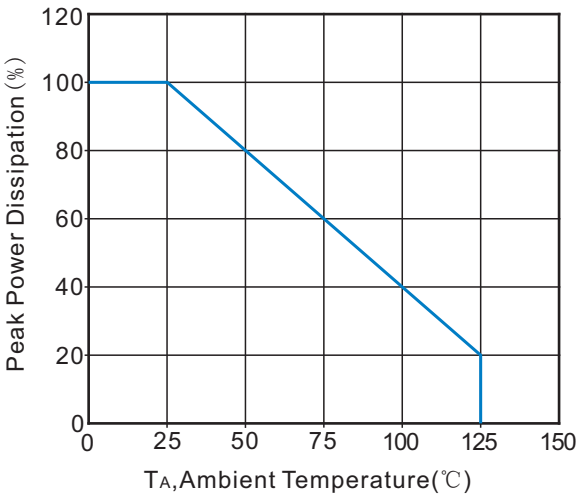


Fig.2 Power Derating Curve



Ratings and Characteristic Curves

Fig.3 Clamping Voltage vs. Peak Pulse Current(8x20μs)

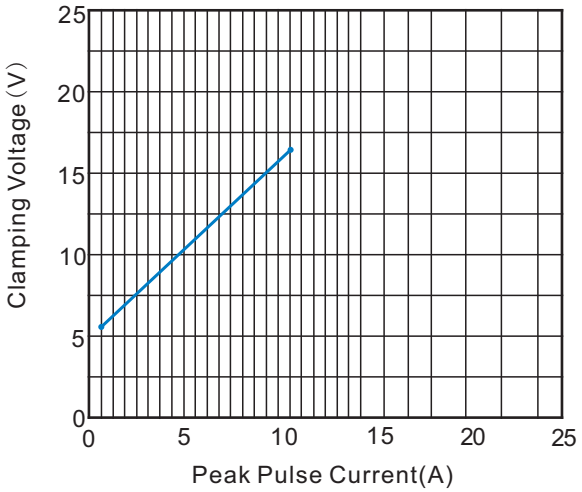
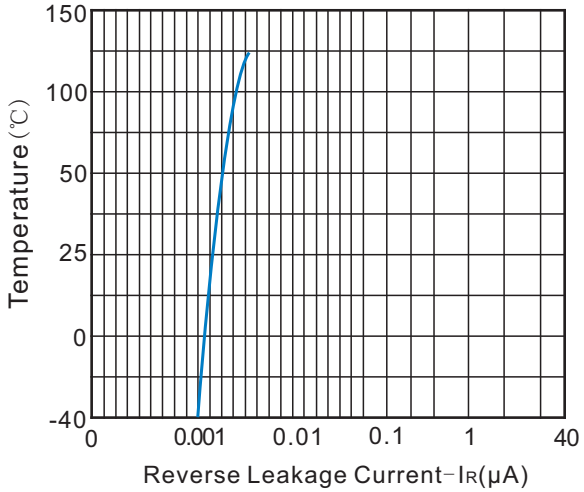
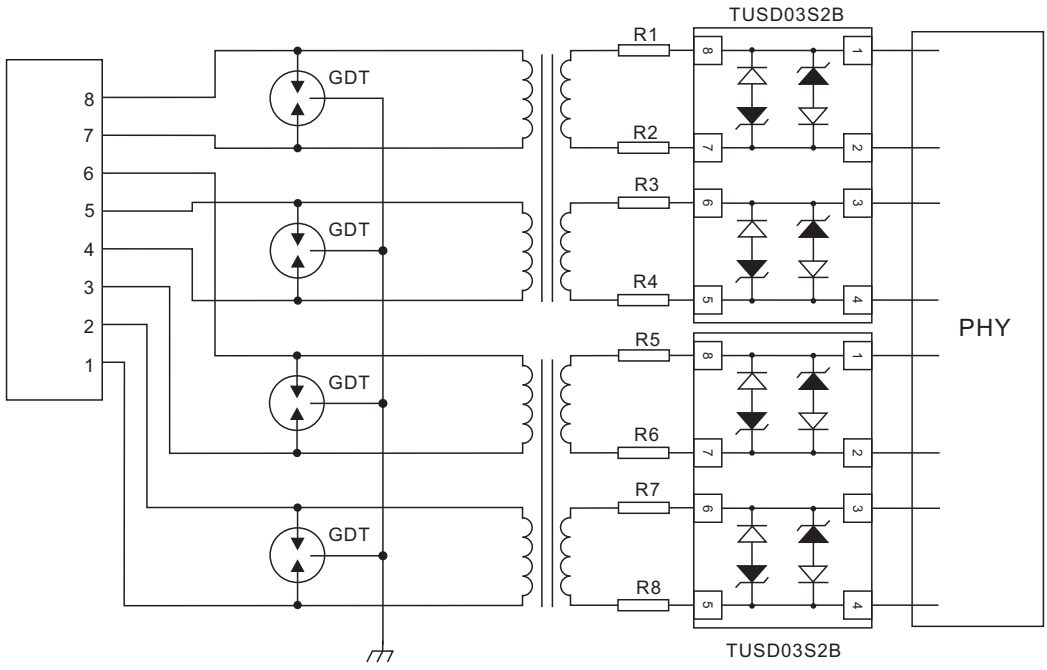


Fig.4 Reverse Leakage Current vs. Temperature



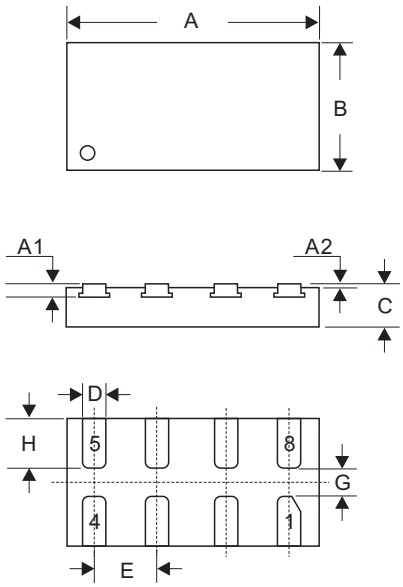
Application

RJ45 Protection



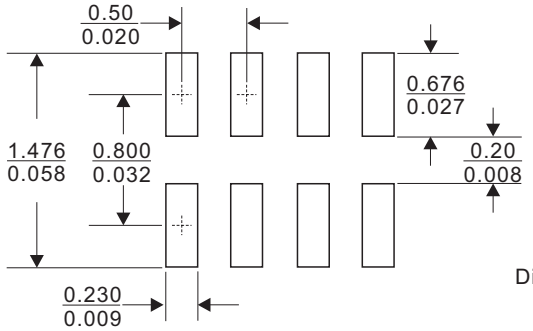
Dimensions(DFN2010P8)

DFN2010P8



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.924	2.076	0.076	0.082
A1	0.120REF		0.005REF	
A2	0.000	0.050	0.000	0.002
B	0.924	1.076	0.036	0.042
C	0.700	0.800	0.028	0.031
D	0.180	0.280	0.007	0.011
E	0.500 TYP		0.020 TYP	
G	0.200MIN		0.008MIN	
H	0.274	0.426	0.011	0.017

Recommended Mounting Pad Layout



Dimensions in (millimeters / inches)