1. Description

The PESD2ETH1GXT-QR Series are ultra-low capacitance transient voltage suppressor arrays, designed to protect applications such as portable electronics and SMART phones. This series is available bidirectional configurations and is rated at 300 Watts for an 8/20μs wave shape. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major conc ern. This series offers a ultra low capacitance and low leakage current in a miniature SOT-23 package.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±25kV Contact Discharge
  - ±25kV Air Discharge
- 300W Peak pulse Power (8/20us)
- Low clamping voltage
- Protects two bidirectional or two Unidirectional lines
- Low leakage current
- RoHS compliant

3. Applications

- Ethernet 10/100/1000 Base T
- Handheld - Wireless Systems
- Servers, notebooks, and desktop PCs
- SMART Phones
- USB Interface
- Cellular handsets and accessories

4. Ordering Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
PESD2ETH1GXT-QR	SOT-23	BWF	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

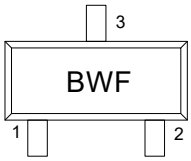
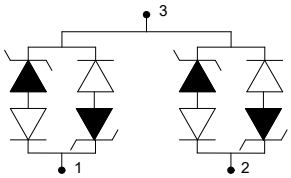
Pin	Name	Description	Outline	Circuit Diagram
1	IO	Connect to IO		
2	IO	Connect to IO		
3	GND	Connect to GND		

Table-2 Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	300	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		Refer to Table-5	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±25	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±25	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

6.2. Electrical Characteristics

Symbol	Description
V_{RWM}	Rated reverse stand-off voltage
V_{BR}	Minimum breakdown voltage @I_T = 1mA
V_{CL}	Typical Clamping voltage
I_{PP}	Maximum peak pulse current
I_R	Reverse leakage current @V_{RWM}
C_O	Typical line capacitance (V_{IO}=0V, V_{P-P} = 30mV, f = 1MHz)

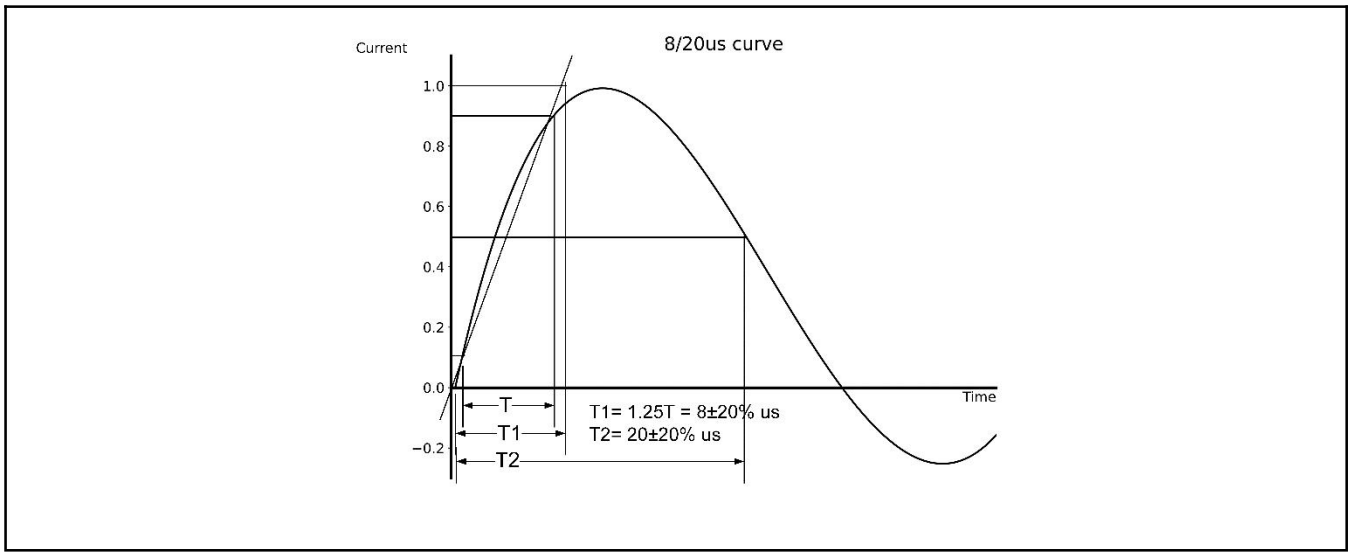
Table-4 Parameters Description

At TA = 25℃ unless otherwise noted

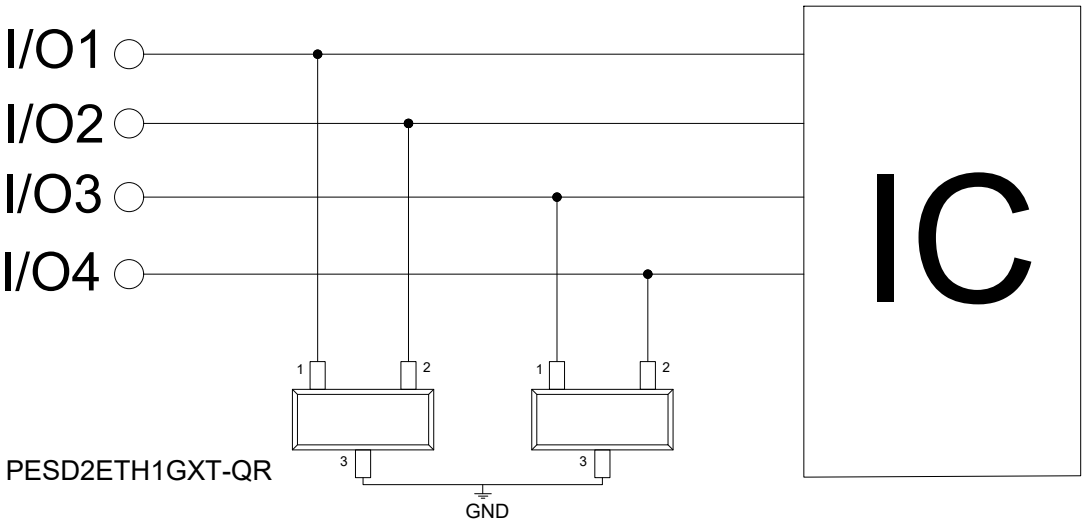
Part Number	V_{RWM} (Max.)	V_{BR}(Min.)	V_{CL}@I=1A (Typ.)	I_{PP} (Max.)	V_{CL}@I=I_{PP} (Typ.)	I_R (Max.)	C_O(Typ.)
	(V)	(V)	(V)	(A)	(V)	(uA)	(pF)
PESD2ETH1GXT-QR	24.0	26.0	34.0	4.0	42.0	1.0	0.8

Table-5 Electrical Characteristics for All Series

7. Typical Characteristic



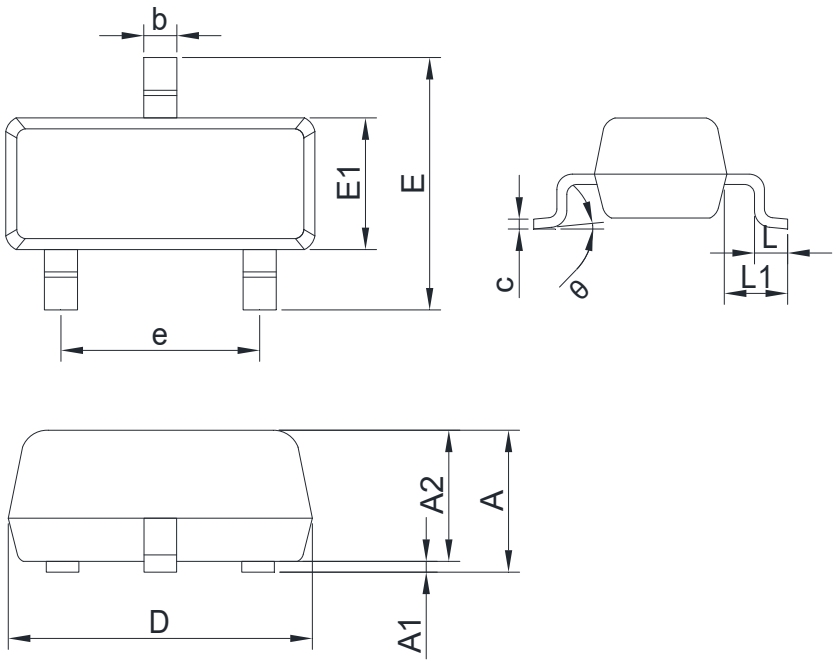
8. Typical Application



Typical Interface Application

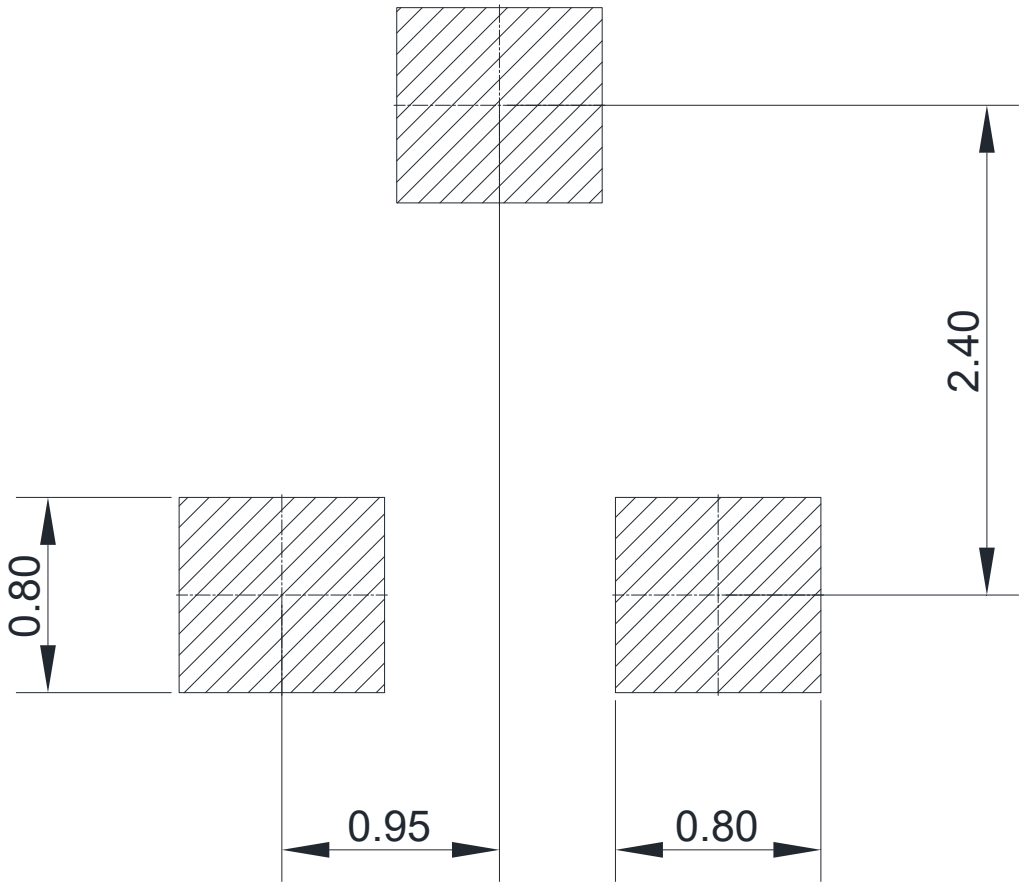
9. Dimension (SOT-23)

POD(Z)



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	0.90	1.20	E	2.25	2.55
A1	0.00	0.10	E1	1.20	1.40
A2	0.90	1.10	e	1.80	2.00
b	0.30	0.50	L	0.30	0.50
c	0.07	0.18	L1	0.475	0.625
D	2.80	3.04	θ	0°	8°

10. Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS

Flow (wave) soldering (solder dipping)

Product	Peak Temperature	Dipping Time
Pb device	245℃±5℃	5sec±1sec
Pb-Free device	260℃+0/-5℃	5sec±1sec



This integrated circuit can be damaged by ESD BYSEMI Corporation recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedure can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

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SI4410DYTRPBF DSS16 ME9435 SI4410BDY SI4447ADY MMBTA05LT1G PSD15C SI2301DS-T1-GE3 SI2307CDS-T1-E3 BV-D505ZC CEM4953 PESD5V0L5UY RS1M SI2307BDS-T1-GE3 TL432 1N5819W LESD8D3.3CAT5G PESD3V3L5UY SI2302DS-T1-GE3 ESDA6V8AV6-6/TR MMBD4148CA NCE4953 SI9435DY 2SA733 BSS84 MB6F NTD20N06HL SI2312CDS-T1-GE3 BC817-40LT1G ESDA6V1W5