

PESD2ETH1G ESD Protection Diode

Feature

- Bi-directional ESD protection of two lines
- Junction capacitance: 0.95pF(Typ)
- Working voltage: 24V
- IEC 61000-4-2 $\pm 25\text{kV}$ contact $\pm 25\text{kV}$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)

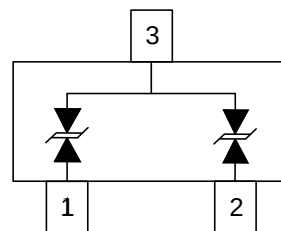
Application

- Open Alliance IEEE 100/1000BASE-T1 Ethernet
- Low-Voltage Differential Signaling(LVDS)
- Automotive

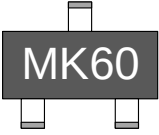
Mechanical Data

- Package: SOT-23
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DPESD2ETH1G	SOT-23		3000 Tape & Reel	7 inches

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

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	V_{ESD}	25	kV
ESD per IEC 61000-4-2 (Contact)		25	
Lead Soldering Temperature	T_L	260 (10sec)	$^\circ\text{C}$
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +125	$^\circ\text{C}$

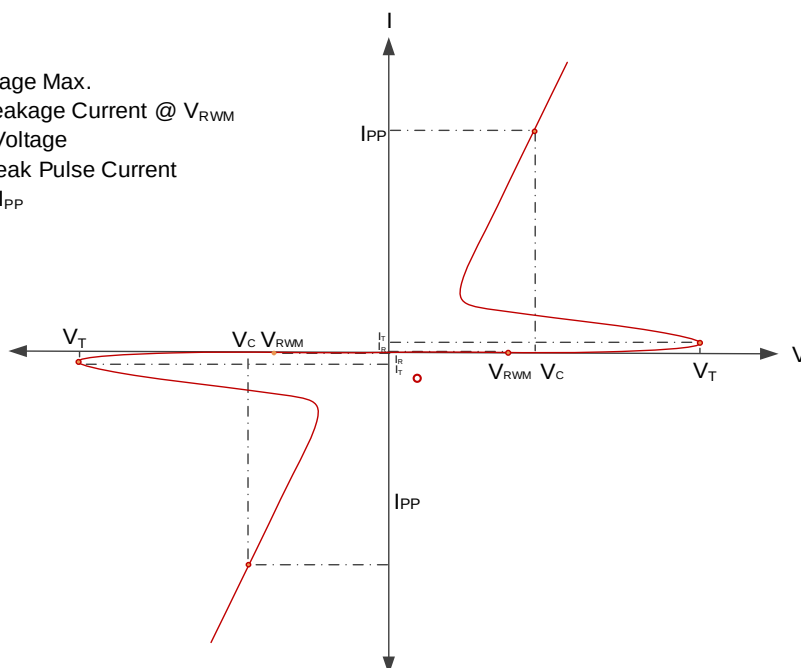
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	100			V
Reverse Leakage Current	I_R	$V_{\text{RWM}} = 24\text{V}$			0.1	nA
Clamping Voltage	V_C	$I_{\text{TLP}}=4\text{A}, t_p=0.2/100\text{ns}$		29.5		V
Clamping Voltage	V_C	$I_{\text{TLP}}=16\text{A}, t_p=0.2/100\text{ns}$		32.5		V
ESD Dynamic Resistance	R_{DYN}	$t_p=0.2/100\text{ns}$		0.25		Ω
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$, I/O pin to GND		2.0	2.5	pF
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$, Between I/O pins		0.95	1.2	pF



Electrical Parameters

- V_{RWM} Reverse Working Voltage Max.
- I_R Maximum Reverse Leakage Current @ V_{RWM}
- V_{BR} Reverse Breakdown Voltage
- I_{PP} Maximum Reverse Peak Pulse Current
- V_C Clamping Voltage @ I_{PP}



Typical Characteristic ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1: Power Derating Curve

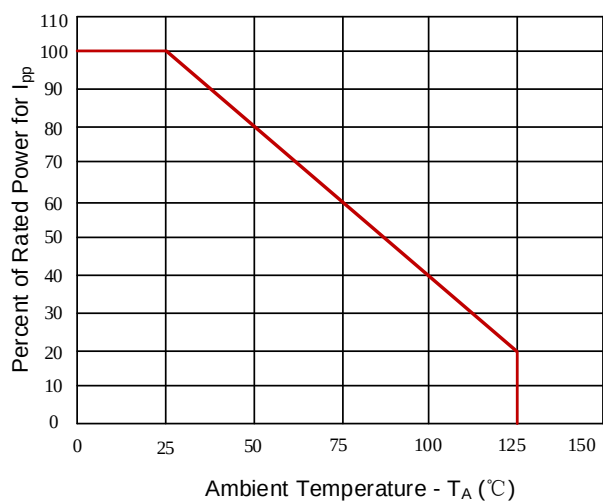


Figure 2: Pulse Waveform-ESD(IEC61000-4-2)

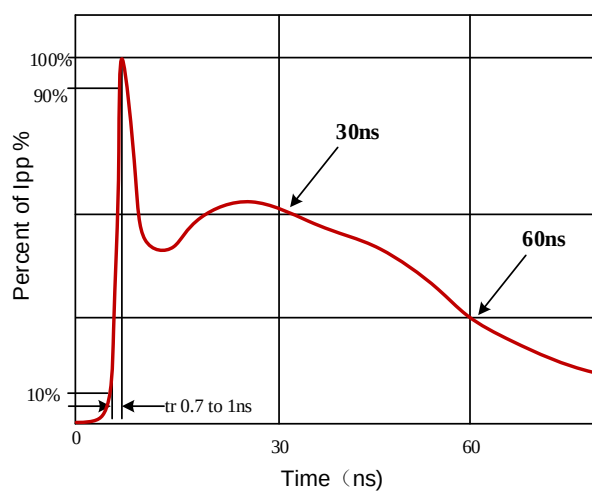


Figure 3: TLP Positive I-V Curve

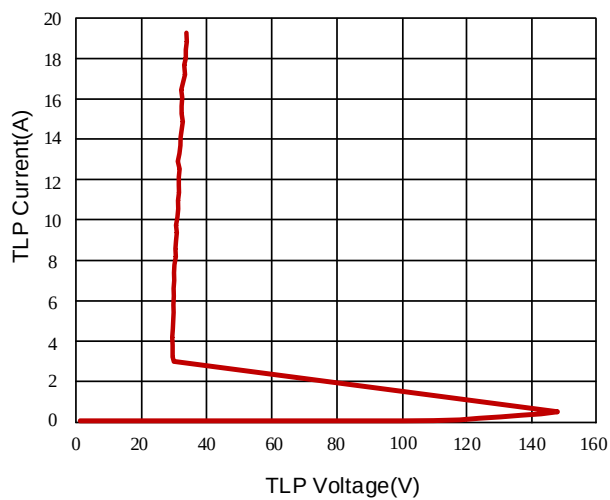
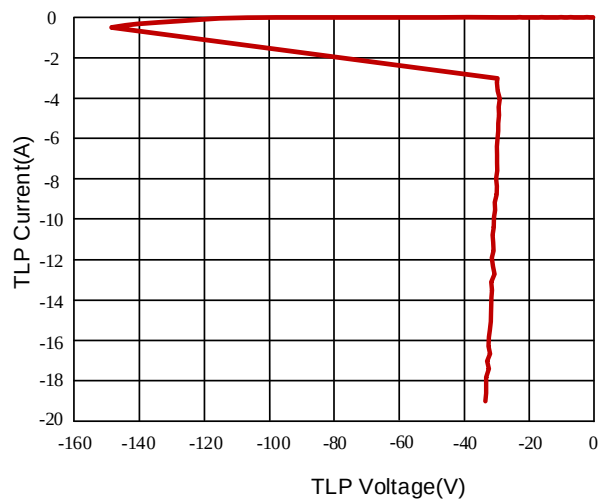
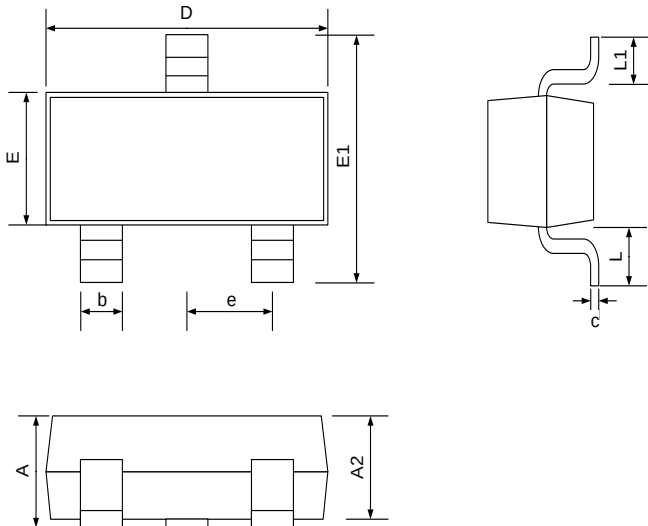


Figure 4: TLP Negative I-V Curve



Outline Drawing –SOT-23



COMMON DIMENSION (mm)			
PKG	SOT23		
REF.	MIN.	NOM.	MAX.
A	0.900		1.150
A2	0.900		1.050
b	0.300		0.500
c	0.080		0.150
D	2.800		3.000
E	1.200		1.400
E1	2.250		2.550
e		0.950	
L		0.550	
L1	0.300		0.500