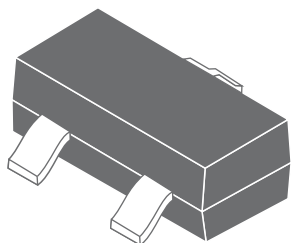
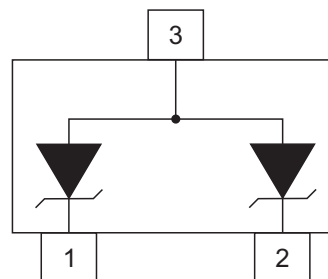


Electro-Static Discharge TESD03-36G2U Unidirectional TVS Diode

SOT-23



Pin Configuration



Features

- 300 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- Protects one I/O or power line
- Low clamping voltage
- Working voltages: 3. 3V, 5V, 12V, 15V, 18V, 24V and 36V
- Low leakage current

IEC Compatibility

- IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Applications

- RS-232, RS-422 & RS-423 Data Lines
- Audio/Video Inputs
- Wireless Network Systems
- Digit Video Interface (DVI)
- Medical Sensors
- Notebook Computers

Mechanical Characteristics

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating:UL 94V-O
- Weight 8.0 Milligrams(Approximate)
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

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

Parameter	Symbol	Value	Units
Peak Pulse Power($t_p=8/20\mu\text{s}$)	P_{PP}	300	Watts
Lead Soldering Temperature	T_L	260(10 sec.)	$^{\circ}\text{C}$
Operating Temperature Range	T_J	-55~150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55~150	$^{\circ}\text{C}$

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

TESD03G2U(Marking:M03)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	3.6			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			7	V
		$I_{PP}=15\text{A}, t_p=8/20\mu\text{s}$			13	V
Reverse Leakage Current	I_R	@ V_{RWM}			20	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		350		pF

TESD05G2U(Marking:M05)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			9.8	V
		$I_{PP}=14\text{A}, t_p=8/20\mu\text{s}$			18	V
Reverse Leakage Current	I_R	@ V_{RWM}			10	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		250		pF

TESD12G2U(Marking:M12)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				12	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	13.3			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			19	V
		$I_{PP}=11\text{A}, t_p=8/20\mu\text{s}$			32	V
Reverse Leakage Current	I_R	@ V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		120		pF

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

TESD15G2U(Marking:M15)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				15	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	16.7			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			24	V
		$I_{PP}=10\text{A}, t_p=8/20\mu\text{s}$			38	V
Reverse Leakage Current	I_R	@ V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		100		pF

TESD18G2U(Marking:M18)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				18	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	20			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			29	V
		$I_{PP}=9\text{A}, t_p=8/20\mu\text{s}$			45	V
Reverse Leakage Current	I_R	@ V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		75		pF

TESD24G2U(Marking:M24)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	26.7			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			43	V
		$I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$			52	V
Reverse Leakage Current	I_R	@ V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		60		pF

TESD36G2U(Marking:M36)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				36	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	40			V
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$			60	V
		$I_{PP}=4\text{A}, t_p=8/20\mu\text{s}$			75	V
Reverse Leakage Current	I_R	@ V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc, f=1MHz Between I/O Pins and GND		50		pF

Ratings and Characteristic Curves

Fig.1 ESD Clamping Voltage Screenshot
Positive 8 kV Contact per IEC61000-4-2

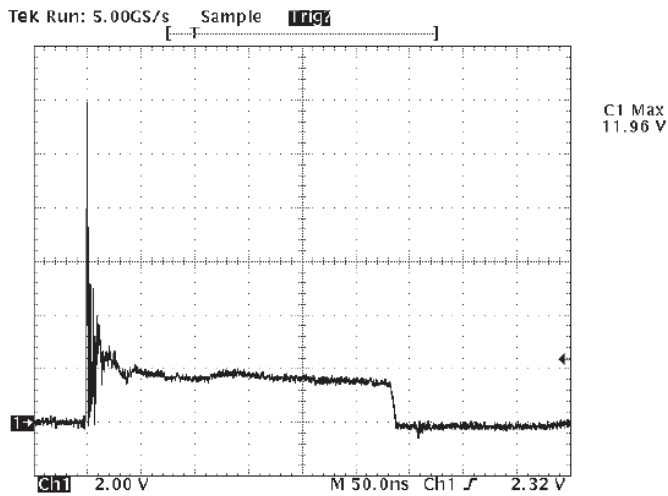
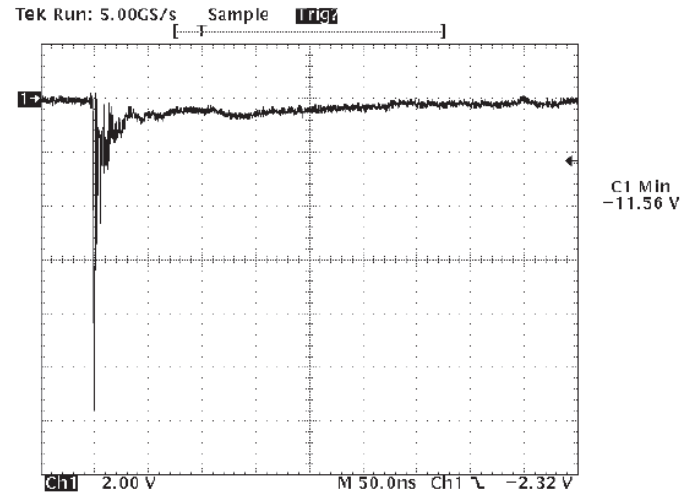
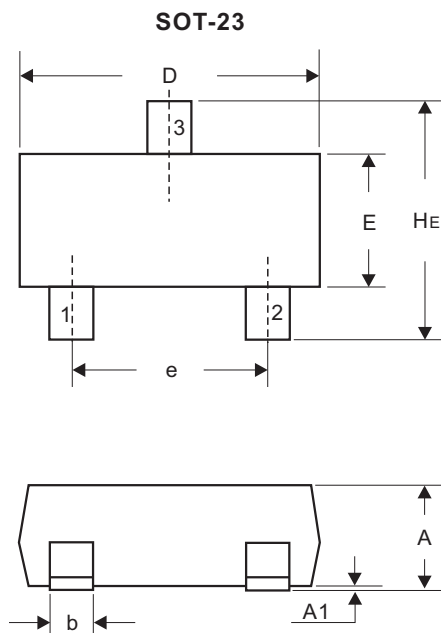


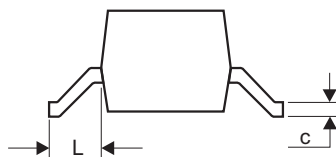
Fig.2 ESD Clamping Voltage Screenshot
Negative 8 kV Contact per IEC61000-4-2



Dimensions(SOT-23)



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.020
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.070	0.081
L	0.35	0.69	0.014	0.029
HE	2.10	2.64	0.083	0.104



Recommended Mounting Pad Layout

