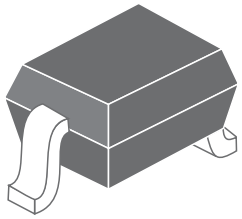
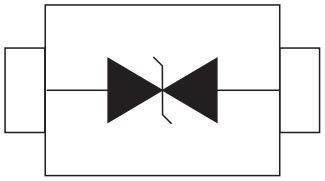
Electro-Static Discharge
TESD03-36FB
Bidirectional TVS Diode

SOD-323



Pin Configuration



Features

- 320 Watts Peak Pulse Power per Line (tp=8/20μs)
- 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) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA's)
- Notebooks,Desktops,and Servers
- Portable Instrumentation
- Peripherals
- Pagers

Mechanical Characteristics

- JEDEC SOD-323 Package
- Molding Compound Flammability Rating:L 94V-O
- Weight 5 Millgrams(Approximate)
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power(tp=8/20μs)	P_{PP}	320	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)

TESD03FB(Marking:2A)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			3.3	V
Breakdown Voltage	V_{BR}	I_T=1mA	3.6		V
Clamping Voltage	V_C	IPP=1A,tp=8/20μs IPP=18A,tp=8/20μs IPP=21A,tp=8/20μs		7.5 13 16	V V V
Reverse Leakage Current	I_R	@V_{RWM}		1	μA
Junction Capacitance	$C_{I/O}$	0Vdc,f=1MHz Between I/O Pins and GND		250	pF

TESD05FB(Marking:2B)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			5	V
Breakdown Voltage	V_{BR}	I_T=1mA	6		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		9.8	V
		I_{PP}=17A,tp=8/20μs		18	V
Reverse Leakage Current	I_R	@V_{RWM}		1	μA
Junction Capacitance	$C_{I/O}$	0Vdc,f=1MHz Between I/O Pins and GND		200	pF

TESD08FB(Marking:2C)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			8	V
Breakdown Voltage	V_{BR}	I_T=1mA	8.5		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		13.4	V
		I_{PP}=15A,tp=8/20μs		25	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℃ unless otherwise specified)

TESD12FB(Marking:2D)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			12	V
Breakdown Voltage	V_{BR}	I_T=1mA	13.3		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		19	V
		I_{PP}=12A,tp=8/20μs		35	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

TESD15FB(Marking:2J)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			15	V
Breakdown Voltage	V_{BR}	I_T=1mA	16. 7		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		24	V
		I_{PP}=10A,tp=8/20μs		40	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

TESD18FB(Marking:2K)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			18	V
Breakdown Voltage	V_{BR}	I_T=1mA	19		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		29	V
		I_{PP}=9A,tp=8/20μs		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		57	pF

TESD24FB(Marking:2H)

Parameter	Symbol	Conditions	Min.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}			24	V
Breakdown Voltage	V_{BR}	I_T=1mA	26. 7		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		40	V
		I_{PP}=7A,tp=8/20μs		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		50	pF

Electrical Characteristics(T_A=25℃ unless otherwise specified)

TESD36FB(Marking:2N)					
Parameter	**Symbol**	**Conditions**	**Min.**	**Max.**	**Units**
Reverse Stand-off Voltage	V_{RWM}			36	V
Breakdown Voltage	V_{BR}	I_T=1mA	40		V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs		60	V
		I_{PP}=5A,tp=8/20μs		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		40	pF

Ratings and Characteristic Curves

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

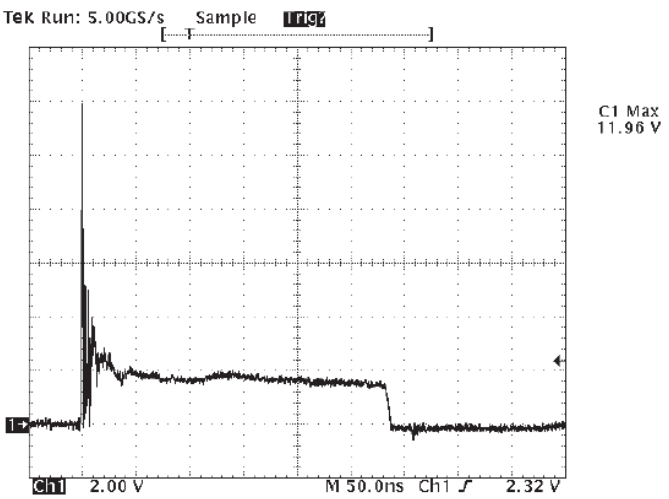
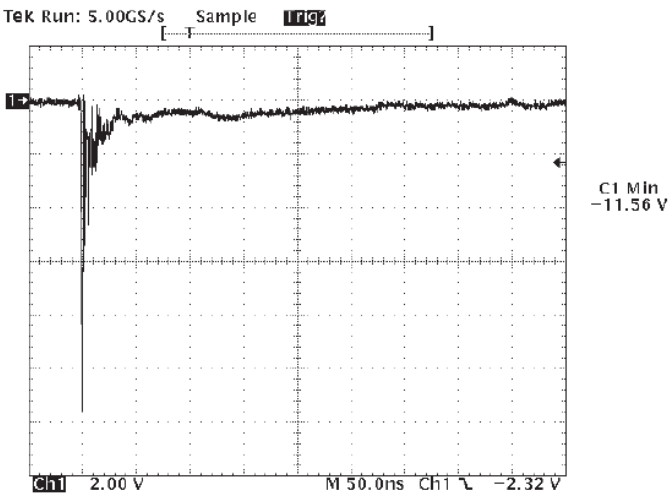
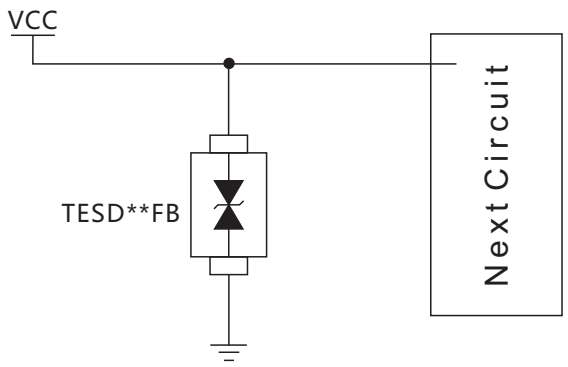


Fig.2 ESD Clamping Voltage Screenshot
Negative 8 kV Contact per IEC61000-4-2



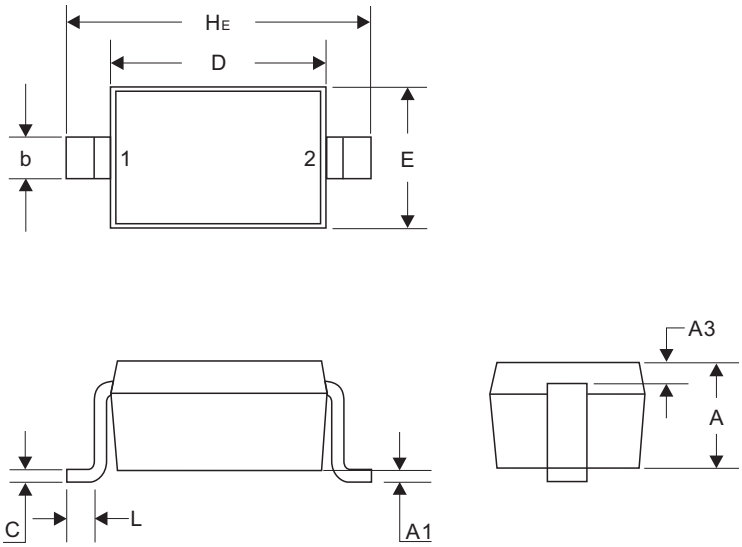
Application

Power Protection



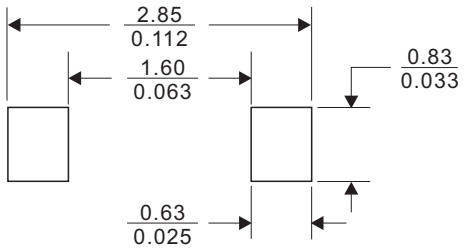
Dimensions(SOD-323)

SOD-323



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.80	1.00	0.031	0.040
A1	0.00	0.10	0.000	0.004
A3	0.15REF		0.006REF	
b	0.25	0.40	0.010	0.016
C	0.089	0.177	0.003	0.007
D	1.60	1.80	0.062	0.070
E	1.15	1.35	0.045	0.053
L	0.08		0.003	
HE	2.30	2.70	0.090	0.105

Recommended Mounting Pad Layout



Dimensions in (millimeters / inches)