

ESD Protection Diode : TEUSD32050R8B

SOD323 package Ultra-low capacitance type



■ Features

1. RoHS compliant and halogen-free
2. Working voltage: 5V
3. Ultra-low capacitance: 0.8pF
4. Low clamping voltage
5. Low leakage current
6. IEC 61000-4-2 (ESD) ±30KV (air), ±30KV (contact)



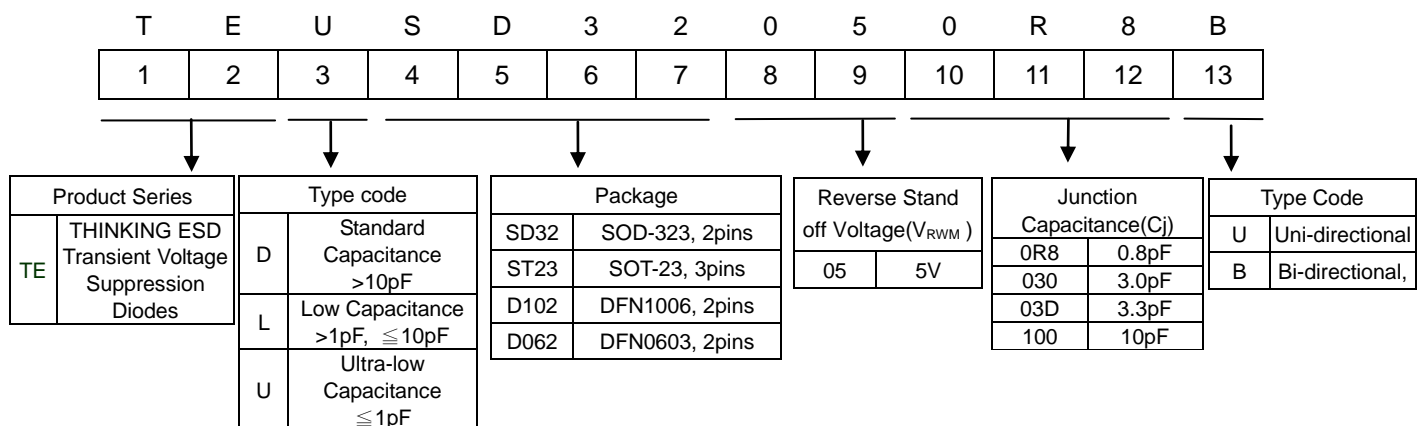
■ Recommended Applications

1. Notebooks, Desktops, Servers
2. USB interface
3. Personal Digital Assistant (PDA)
4. Networking and Telecom(Ethernet 10/100/1000 Base T)

■ Mechanical Data

1. Case: SOD-323, molded plastic meets UL flammability rating 94V-0
2. High temperature soldering guaranteed:260°C/10 seconds
3. Meets MSL level 1, per J-STD-020

■ Part Number Code



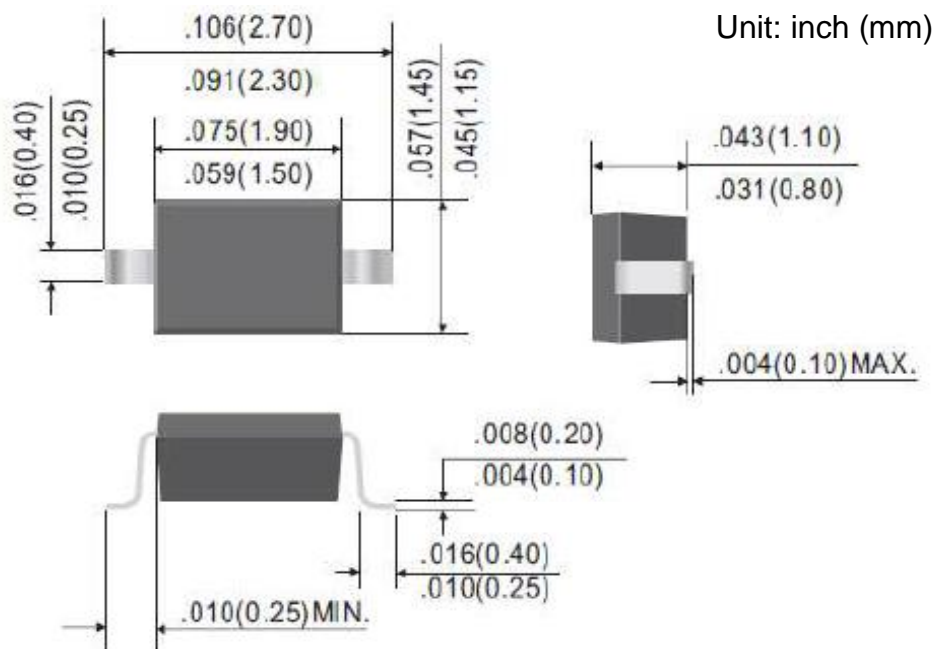
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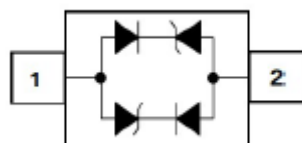


Structures and Dimensions

SOD-323



Schematic & PIN Configuration



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■ Maximum Rating (Rating at 25°C ambient temperature unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power (tp= 8/20μs waveform)	P _{PPM}	350	W
Peak Pulse Current (tp= 8/20μs waveform)	I _{PP}	17	A
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	±30 ±30	KV
Operating junction temperature	T _J	-55~+150	°C
Storage temperature range	T _{STG}	-55~+150	°C

■ Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V _{RWM}	-			5	V
Breakdown Voltage	V _{BR}	I _R =1mA	6.0			V
Reverse Leakage Current	I _R	V _{RWM} =5V			1	μ A
Clamping Voltage	V _C	I _{pp} =1A, tp= 8/20μs			9.8	V
Junction Capacitance	C _j	V _R =0V , f=1MHz		0.8	1.5	pF

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

Figure 1

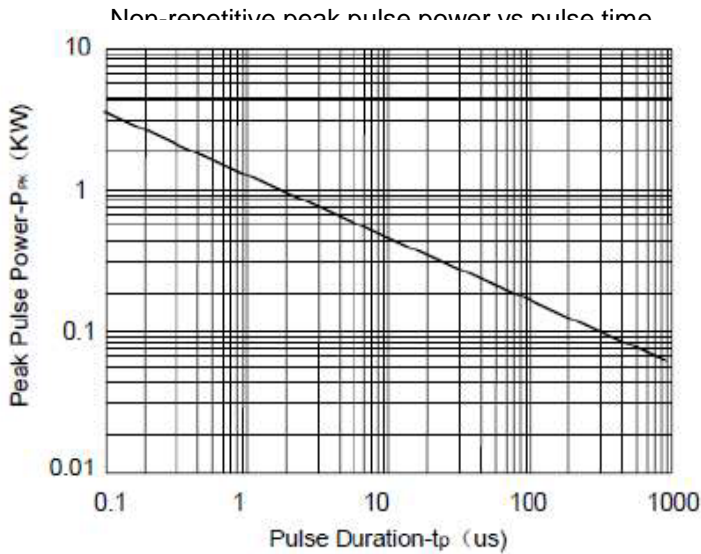


Figure 2

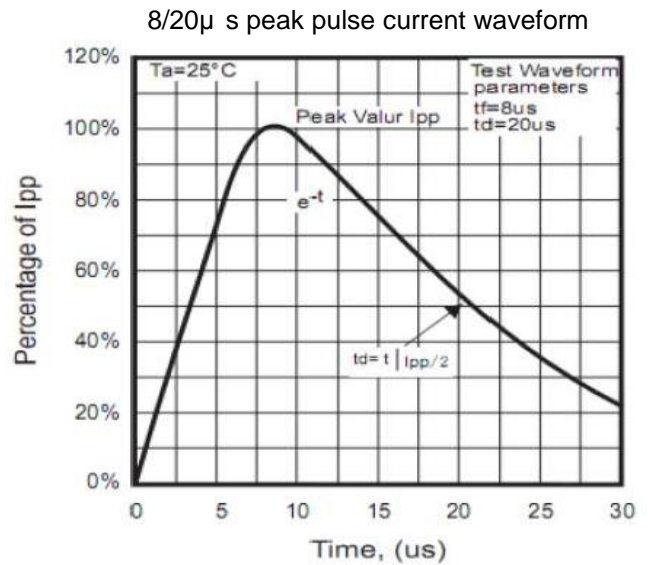


Figure 3 Power derating Curve

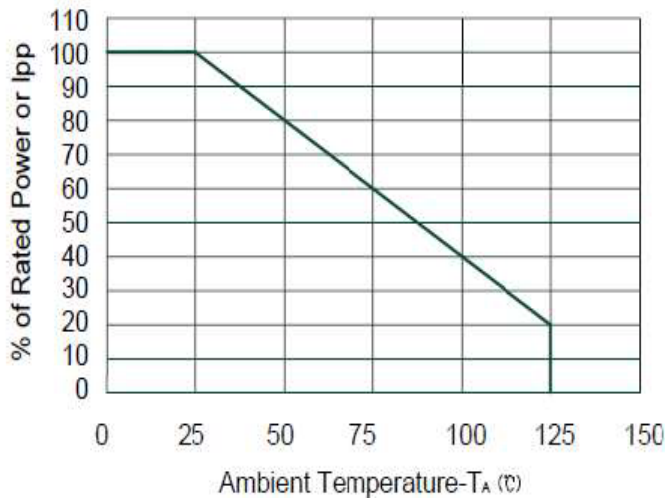


Figure 4 Capacitance vs. Reverse voltage

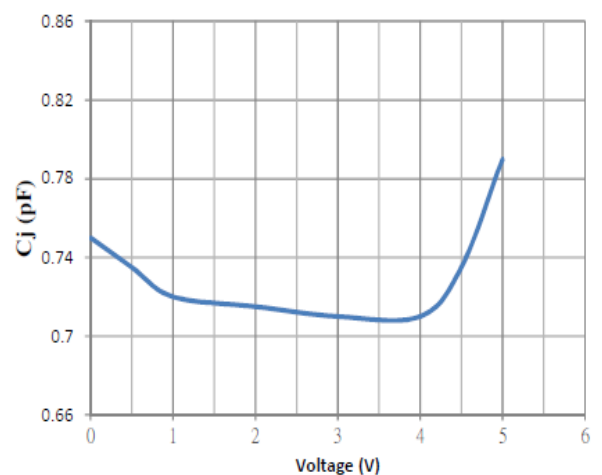


Figure 5 Vc vs Ipp

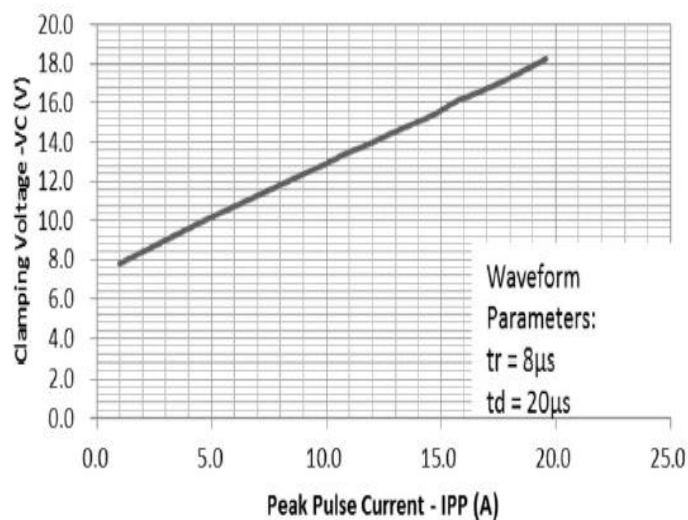
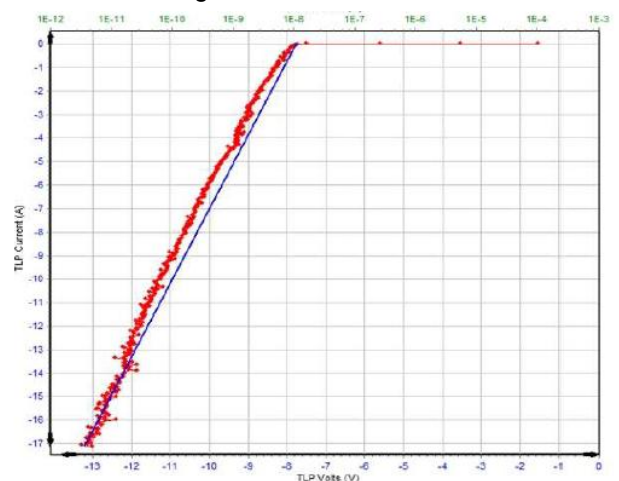


Figure 6 TLP I-V Curve

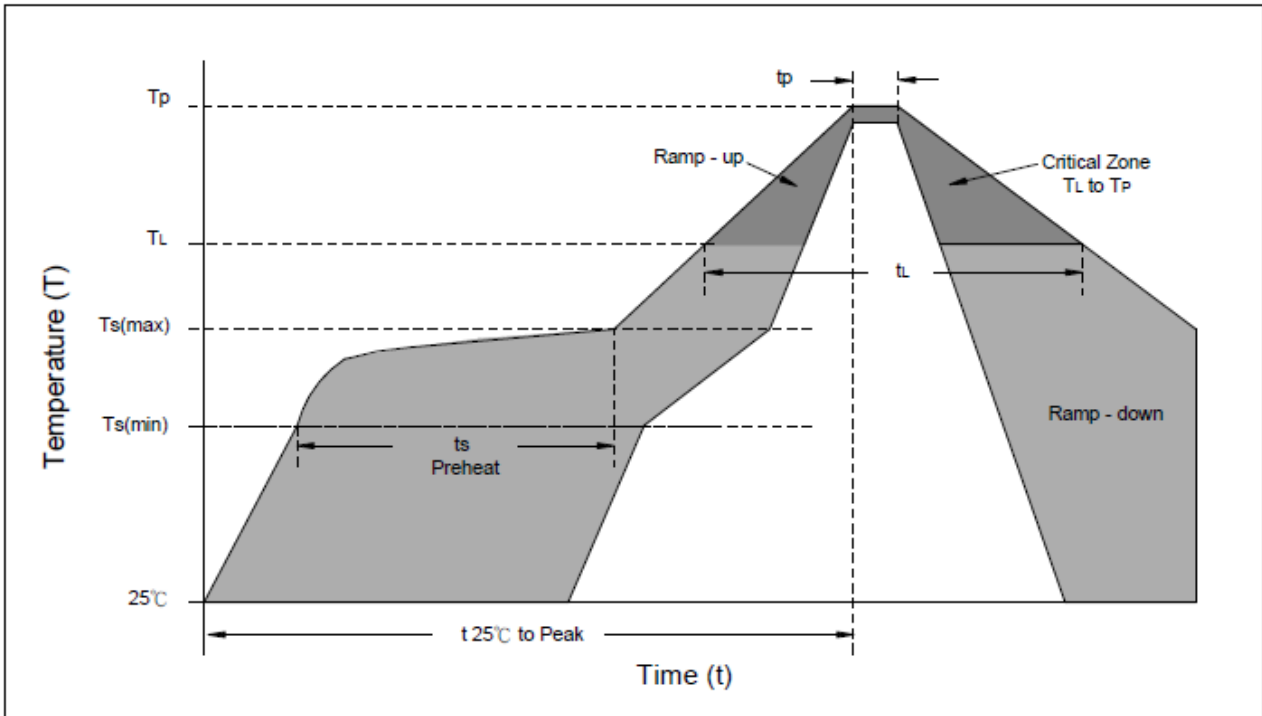


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■ Soldering Recommendation



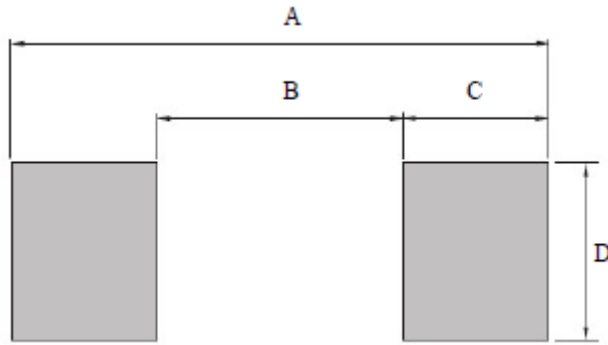
Reflow Condition	Lead-free assembly
Preheat -Temperature Min(Ts min) -Temperature Min(Ts max) -Time (min to max) (ts)	150°C 200°C 60 – 180 seconds
Average ramp up rate -Temperature Liquidus (TL) to peak	3°C/second max
Ts(max) to TL -Ramp-up Rate	3°C/second max.
Reflow -Temperature Liquidus (TL) -Time (tL)	217°C 60 – 150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual peak Temperature(tp)	20 – 40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to peak Temperature(TP)	8 minutes max.
Do not exceed	260°C

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Recommended Soldering Pad Dimensions

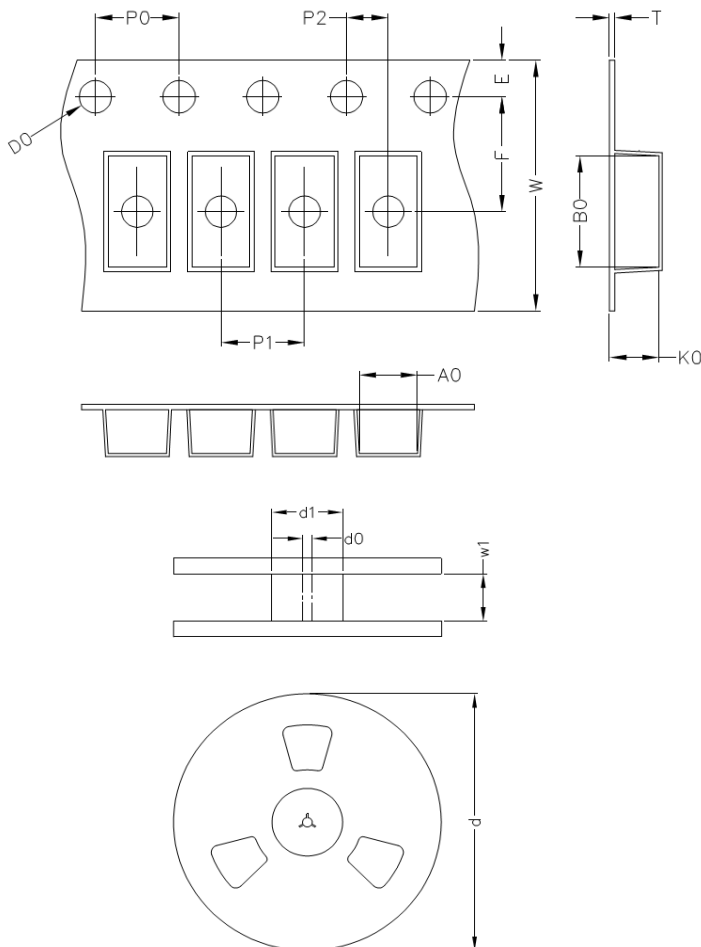


Unit: mm

Package Type	A	B	C	D
SOD-323	2.85	1.45	0.70	0.70

Packaging

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Symbol	SOD-323 (Unit: mm)
A0	1.50 ± 0.10
B0	3.30 ± 0.10
K0	0.95 ± 0.10
D0	1.50 ± 0.10
E	1.75 ± 0.10
F	3.50 ± 0.10
P0	4.00 ± 0.10
P1	4.00 ± 0.10
P2	2.00 ± 0.10
T	0.20 ± 0.05
W	8.00 ± 0.20
d (7")	178.00 ± 2.00
d1	MIN. 54.00
d0	13.00 ± 0.20
w1	MAX. 13.50

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■ Quantity

Package Type	Marking Code	Reel Size (inch)	Reel (Kpcs)
SOD-323	AC	7	3

■ Warehouse Storage Conditions of product

- Storage condition:
 - 1.Storage Temperature: -10°C~+40°C
 - 2.Relatiive Humidity: $\leq 75\%RH$
 - 3.Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.