

ESD Protection Diode : TEDST2324280U



SOT23 package

■ Features

1. RoHS compliant and halogen-free
2. Working voltage: 24V
3. Capacitance: 28pF
4. Low clamping voltage
5. Low leakage current
6. IEC 61000-4-2 (ESD) $\pm 30\text{KV}$ (air), $\pm 30\text{KV}$ (contact)



■ Recommended Applications

1. Can Bus protection
2. Automotive applications

■ Mechanical Data

1. Case: SOT23, molded plastic meets UL flammability rating 94V-0
2. Terminals : Au plated, Solderable per MIL-STD-750,method 2026
3. Meets MSL level 1, per J-STD-020

■ Part Number Code

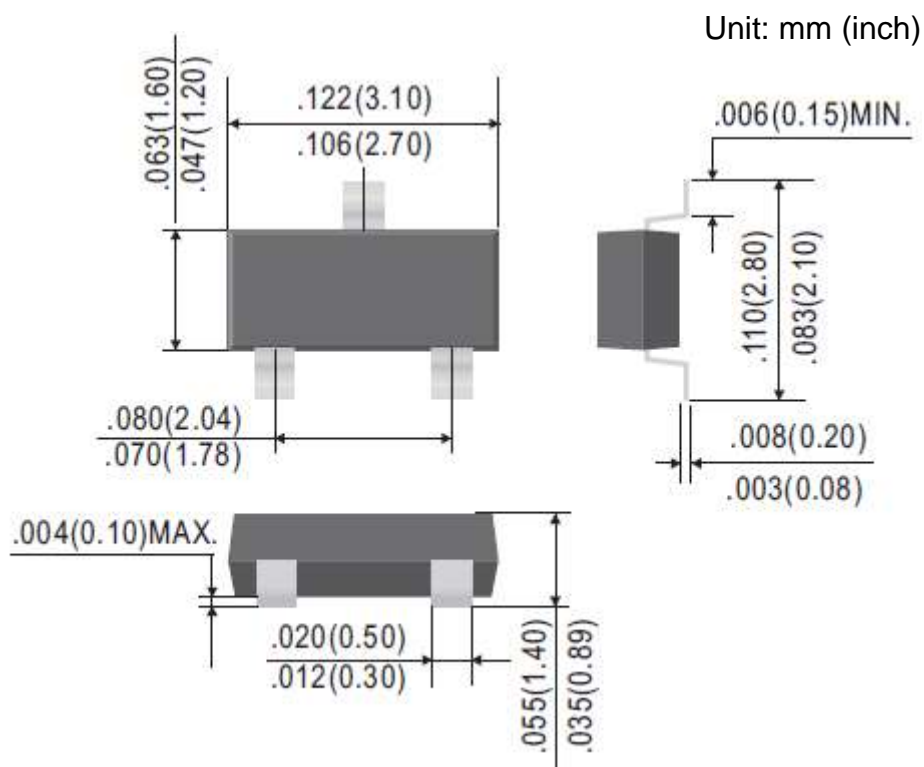
T	E	D	S	T	2	3	2	4	2	8	0	U
1	2	3	4	5	6	7	8	9	10	11	12	13

Product Series		Type code		Package		Reverse Stand off Voltage(V_{RWM})		Junction Capacitance(C_j)		Type Code	
TE	THINKING ESD Transient Voltage Suppression Diodes	D	Standard Capacitance $>10\text{pF}$	SD32	SOD-323, 2pins	24	24V	0R8	0.8pF	U	Uni-directional
		L	Low Capacitance $>1\text{pF}, \leq 10\text{pF}$	D102	DFN1006, 2pins			030	3.0pF	B	Bi-directional,
		U	Ultra-low Capacitance $\leq 1\text{pF}$	D062	DFN0603, 2pins	03D	3.3pF				
								280	28pF		

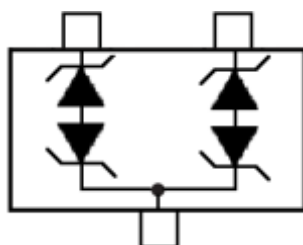
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Structures and Dimensions

SOT-23



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
ESD per IEC61000-4-2 (Air) ESD per IEC61000-4-2 (Contact)	V _{ESD}	±30 ±30	KV
Operating junction temperature	T _J	-55~+125	°C
Storage temperature range	T _{STG}	-55~+150	°C

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

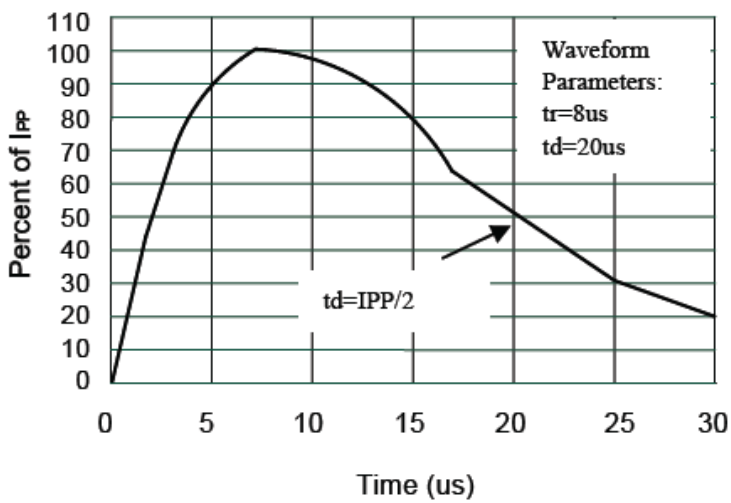
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Stand-off Voltage	V _{RWM}	-			24	V
Breakdown Voltage	V _{BR}	I _R =1mA	26.2			V
Reverse Leakage Current	I _R	V _{RWM} =24V		1	10	nA
Clamping Voltage	V _C	I _{pp} =1A, tp= 8/20μs I _{pp} =7A, tp= 8/20μs		50	34 60	V
Junction Capacitance	C _j	V _R =0V, f=1MHz		28	40	pF

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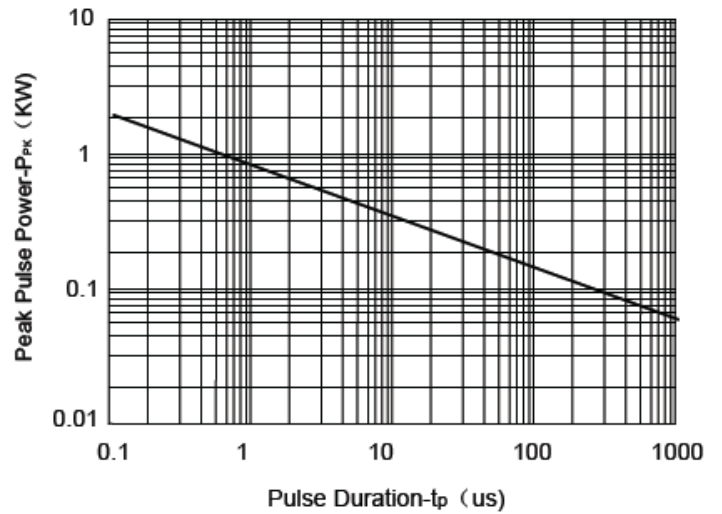


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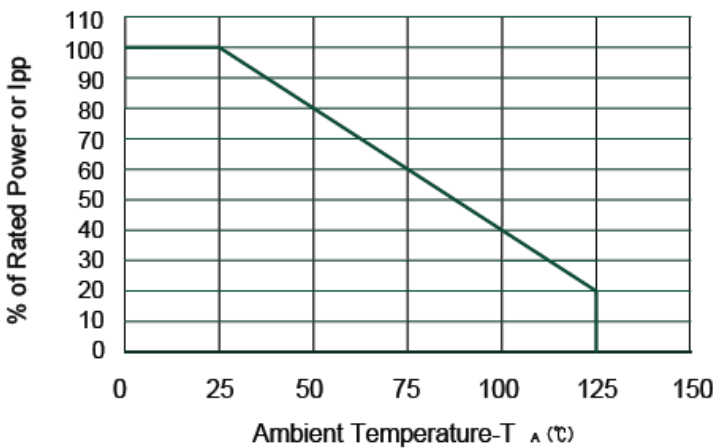
■ Rate and Characteristic Curve ($T_A=25^\circ\text{C}$ unless otherwise noted)



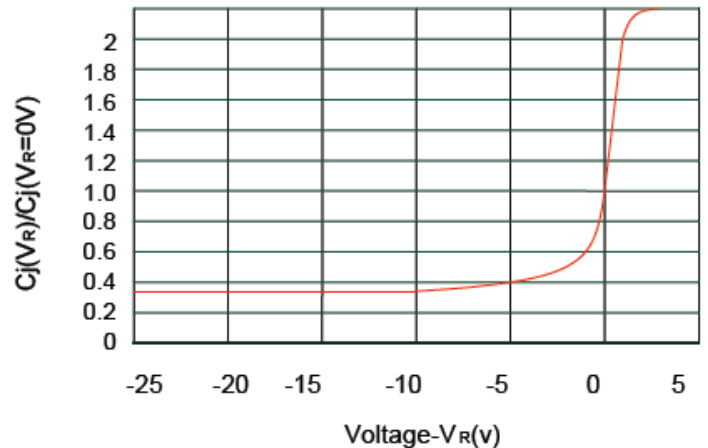
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



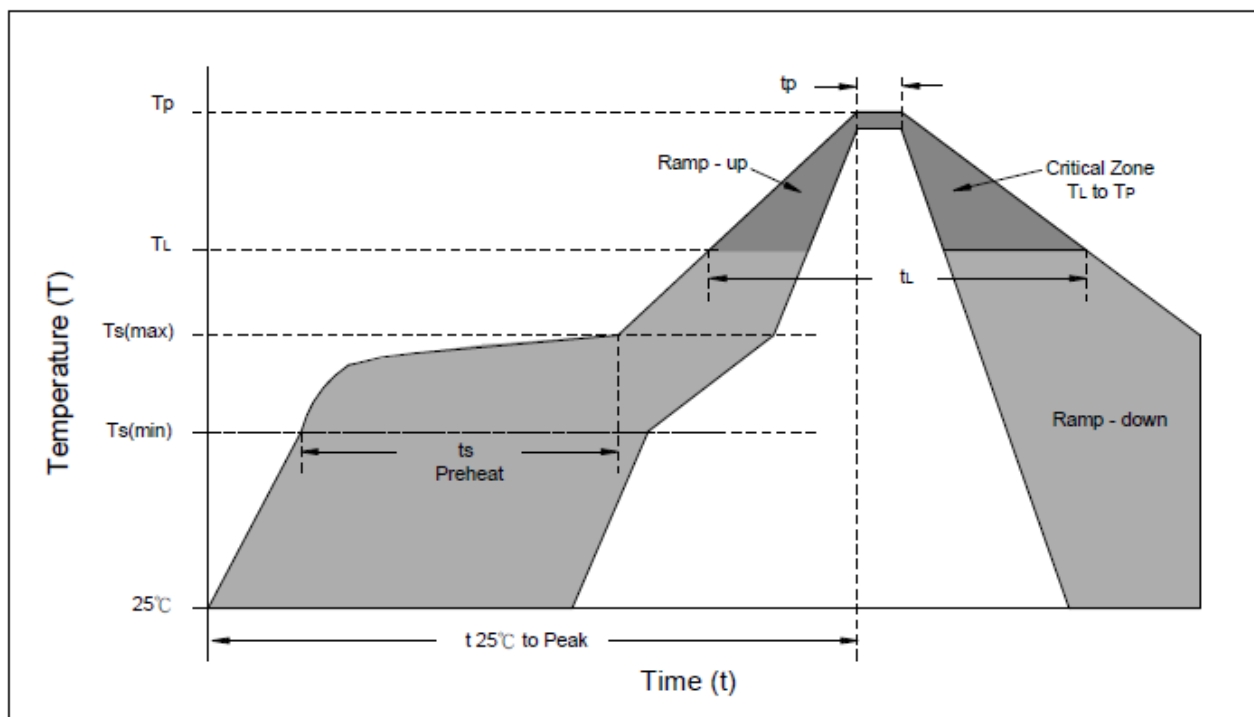
Power Derating Curve



Junction Capacitance vs. Reverse Voltage

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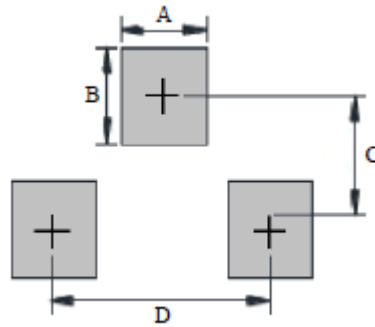
■ Soldering Recommendation



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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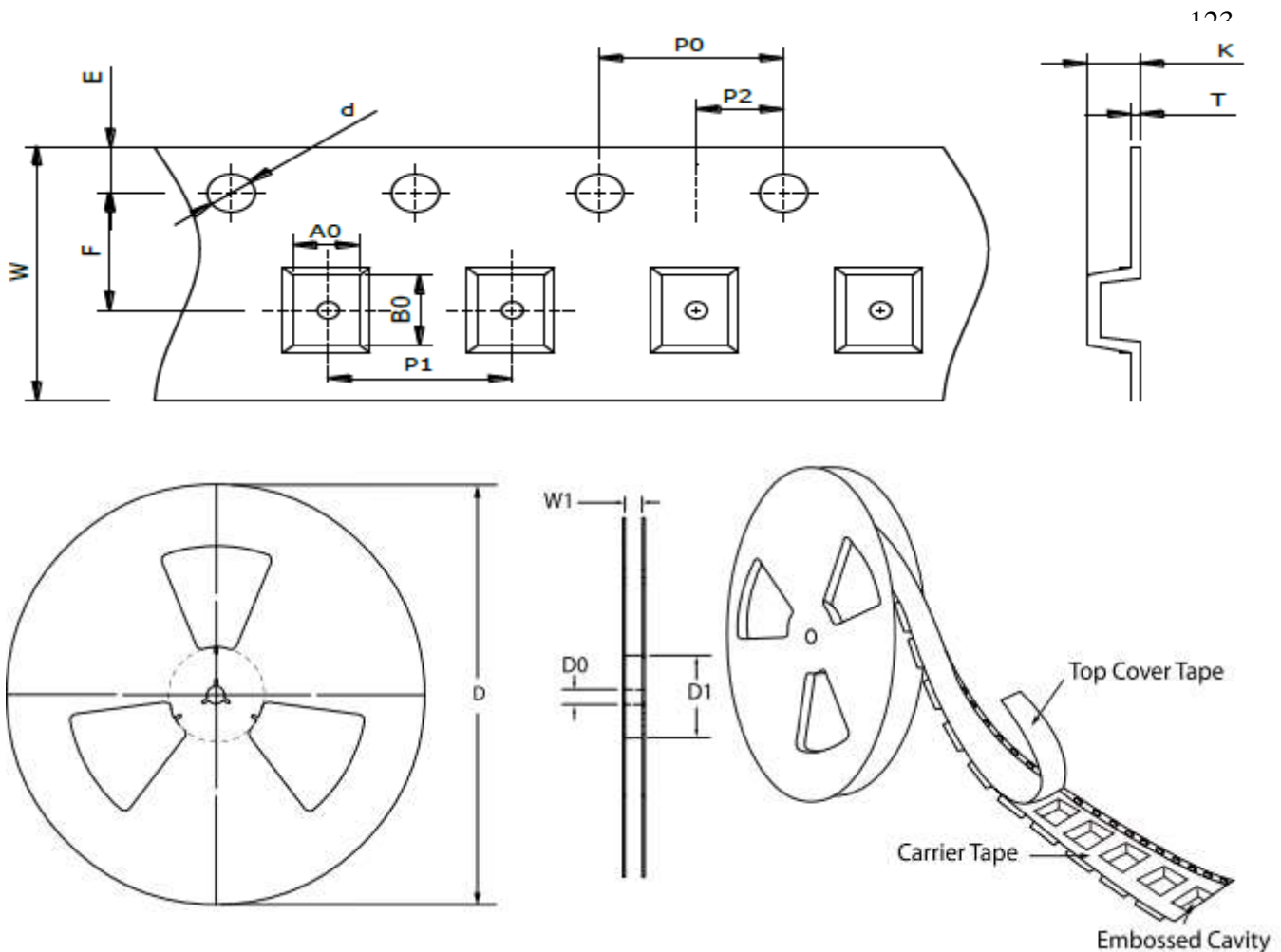
Recommended Soldering Pad Dimensions



Unit: mm

Package Type	A	B	C	D
SOT-23	0.8	0.8	2.02	1.9

Packaging



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Item	Symbol	SOT-23 (Unit: mm)
Carrier width	A0	3.10 ± 0.10
Carrier length	B0	2.70 ± 0.10
Carrier length	K	1.15± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D0	13.00 ± 0.20
Reel inner diameter	D1	MIN. 54.00
Sprocke hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocke hole pitch	P0	4.00 ± 0.10
Punch hole pitch	P1	4.00 ± 0.10
Embossment center	P2	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W1	MAX. 13.50

■ Quantity

Package Type	Marking Code	Reel Size (inch)	Reel (Kpcs)
SOT-23	6R-	7	3

■ Warehouse Storage Conditions of product

- Storage condition:
 - 1.Storage Temperature: -10℃~+40℃
 - 2.Relative Humidity: ≤75%RH
 - 3.Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.