

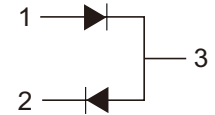
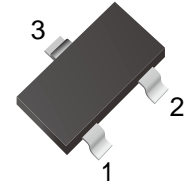
Switching Diodes

Features

- Fast Switching Device ($T_{RR} < 4.0\text{ns}$)
- Power Dissipation of 225mW
- High Stability and High Reliability
- Low reverse leakage
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOT-23
- Approx. Weight: 8.1mg



Ordering Information

Part Number	Marking	Shipping	Reel
LTBD7000-TR3	M5C	3000PCS Tape&Reel	7 inchs
LTBD7000-TR12	M5C	12000PCS Tape&Reel	13 inchs

Maximum Ratings @ $T_a=25^\circ\text{C}$

Parameter	Symbol	Limit	Unit
Reverse Voltage	V_{RM}	100	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Forward Current	I_F	200	mA
Peak Forward surge Current	I_{FM}	500	mA
Power Dissipation	P_D	225	mW
Thermal Resistance Junction to Ambient Air(Note1)	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55~+150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	Min	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$	100		V
Reverse voltage leakage current	I_R	$V_R = 50\text{V}$ $V_R = 100\text{V}$		1.0 3.0	μA
Forward voltage	V_F	$I_F = 1\text{mA}$ $I_F = 10\text{mA}$ $I_F = 100\text{mA}$		700 820 1100	mV
Diode capacitance	C_T	$V_R = 0\text{V}, f = 1\text{MHz}$		2	pF
Reverse recovery time	t_{rr}	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$		4	ns



Characteristics Curves

Fig.1 Forward Characteristics

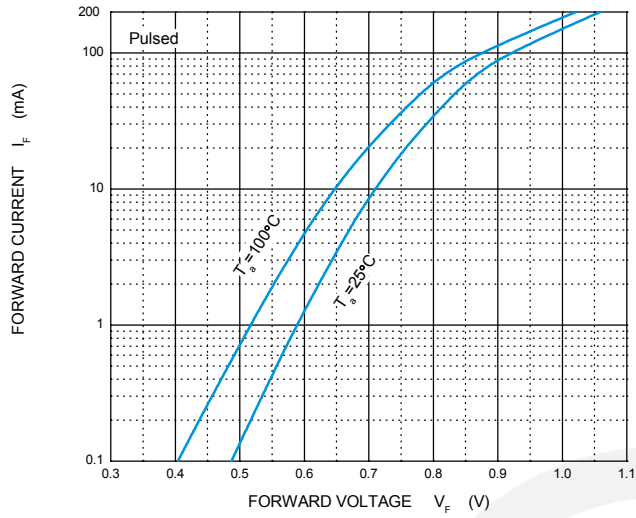


Fig.2 Reverse Characteristics

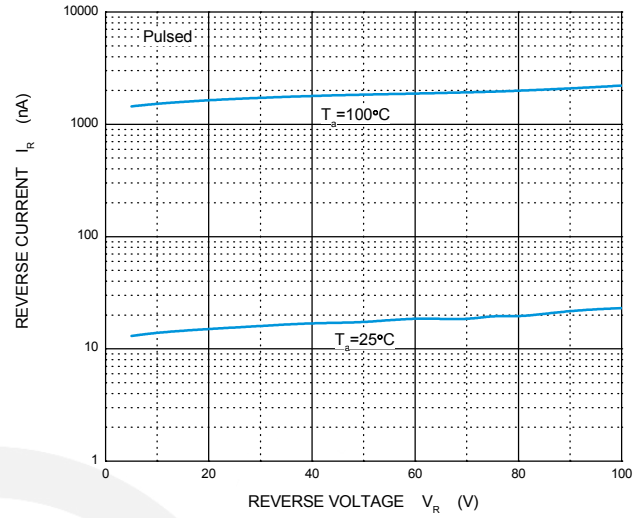


Fig.3 Capacitance Characteristics

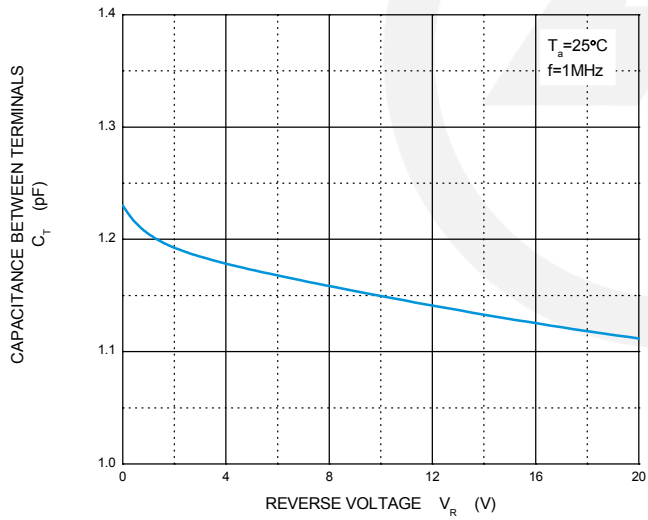
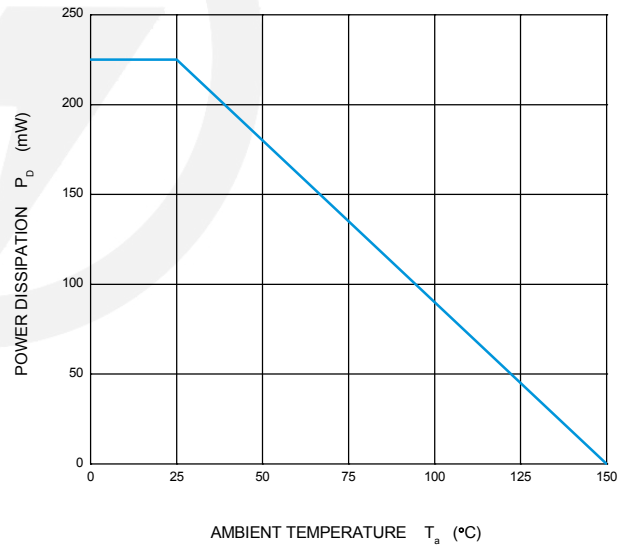
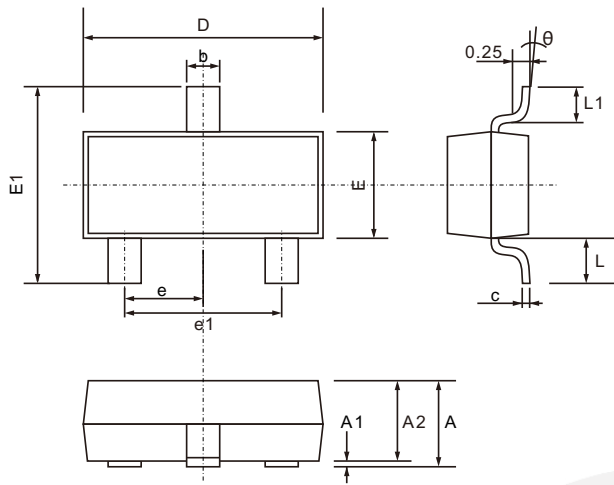


Fig.4 Power Derating Curve



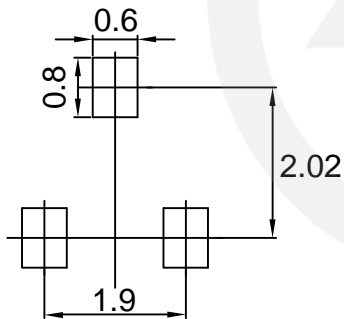
SOT-23 Package Outline

Unit: mm



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

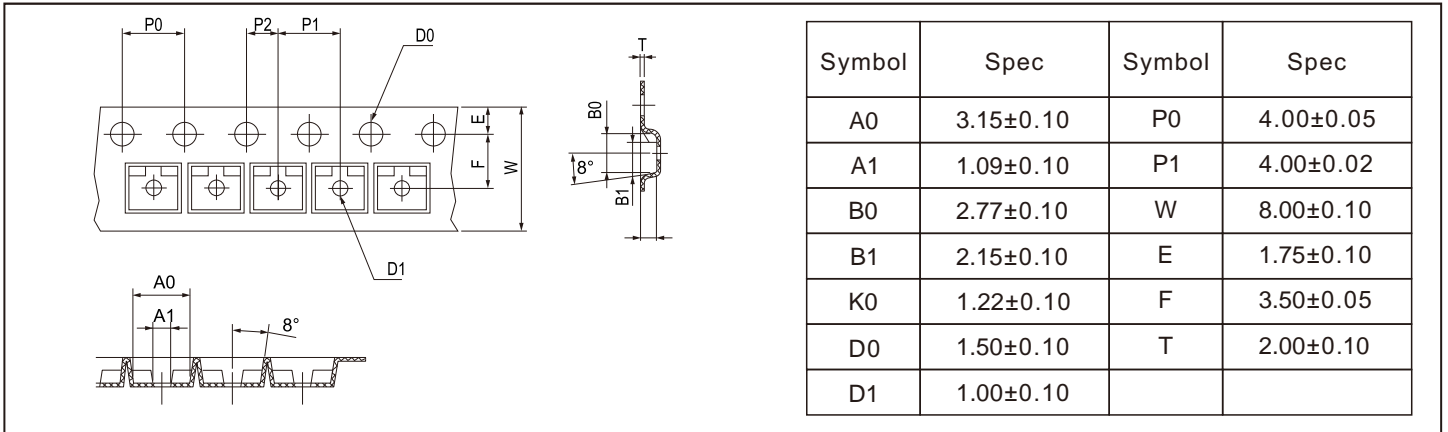
SOT-23 Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$
 3. The pad layout is for reference purpose only.

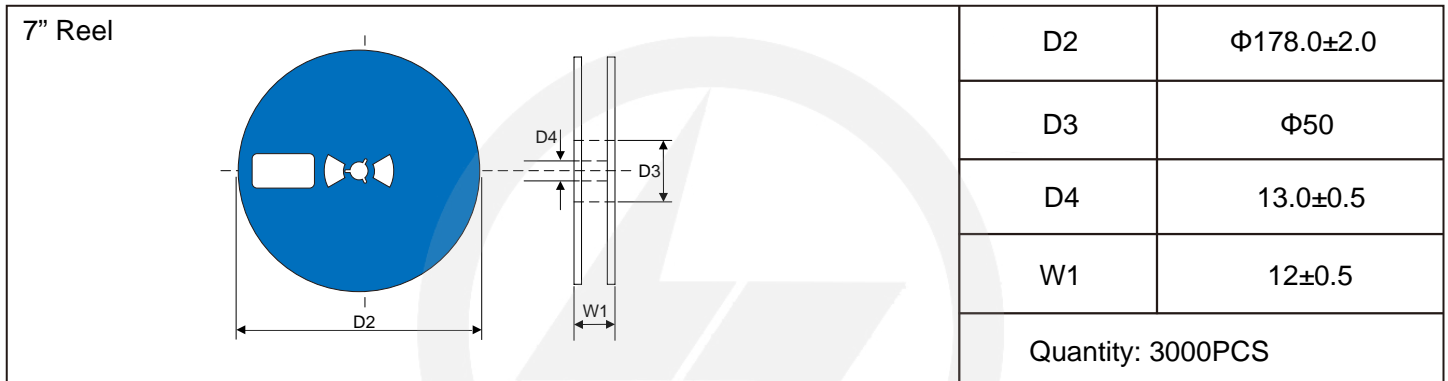
Carrier Tape Dimensions

Unit : mm



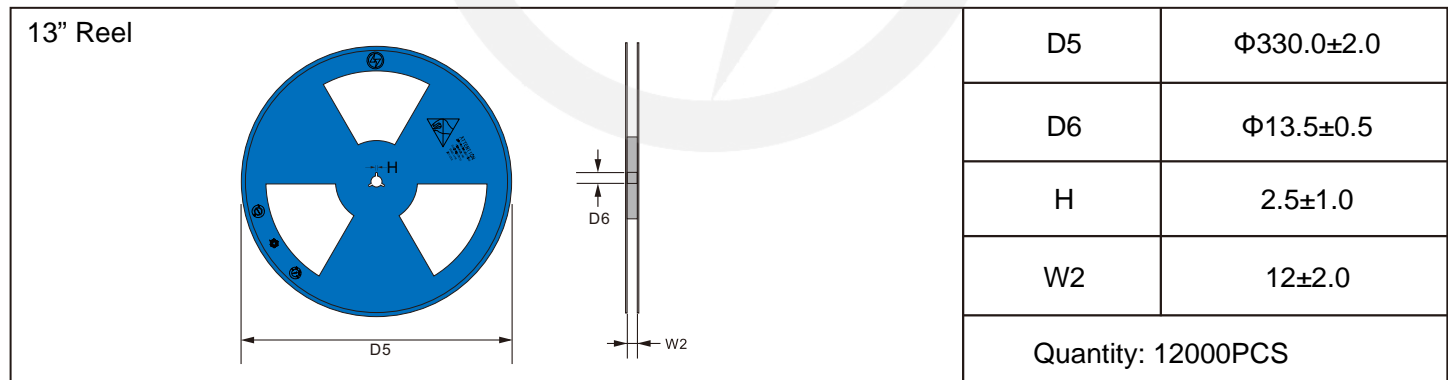
Reel Dimensions

Unit : mm

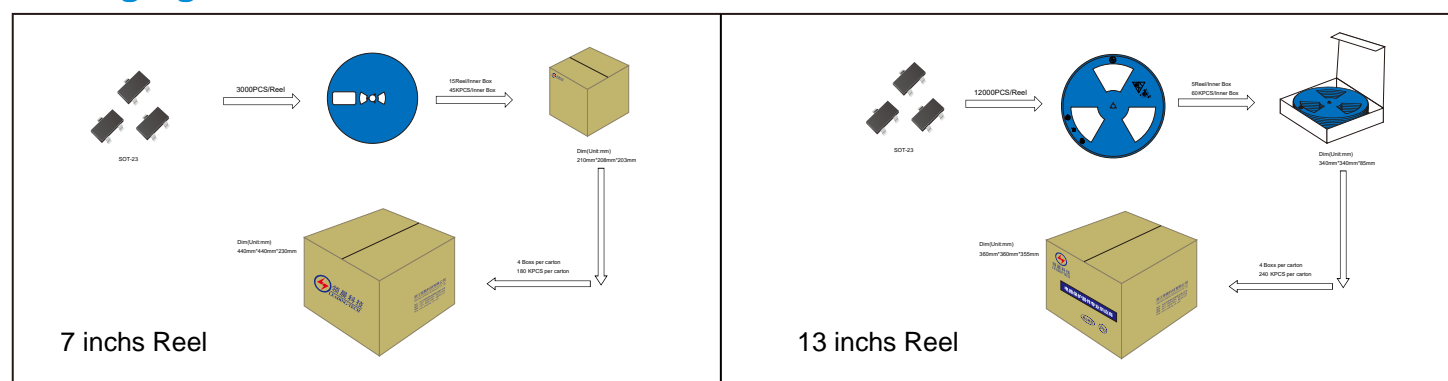


Reel Dimensions

Unit : mm



Packaging





Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision Content	Revision Reason	Revision Person	Note
01	2024.10.25	2024.10.25	3.0	New file	/	Ding	
02	2025.06.11	2025.06.11	3.1	Update packaging information	/	Ding	
03	2026.03.04	2026.03.04	3.2	Package outline E1(max)=2.6mm	/	Ding	