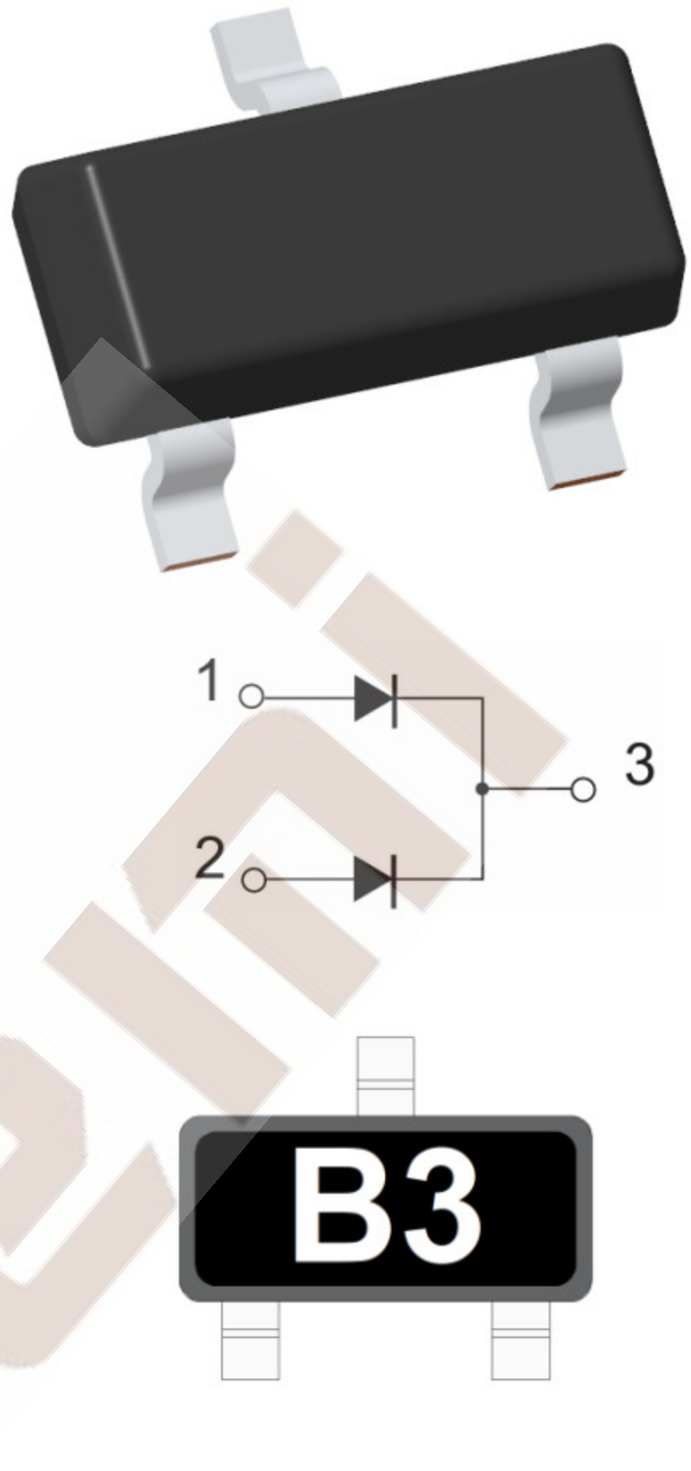
1SS184

Small-Signal Fast Switching Diodes

General Characteristics

V_R	I_F	$V_{F(type)}$	I_{FSM}	T_{jmax}
80V	100mA	0.93V	2A	150℃



Features

- SOT23 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- High temperature soldering guaranteed 260℃/10seconds at terminals

Application

- Extreme fast switches
- Automotive

Package Marking and Ordering Information

Product ID	Package	Marking	Qty(PCS)
1SS184	SOT23	B3	3000

Absolute Maximum Ratings (Ta=25℃ unless otherwise noted)

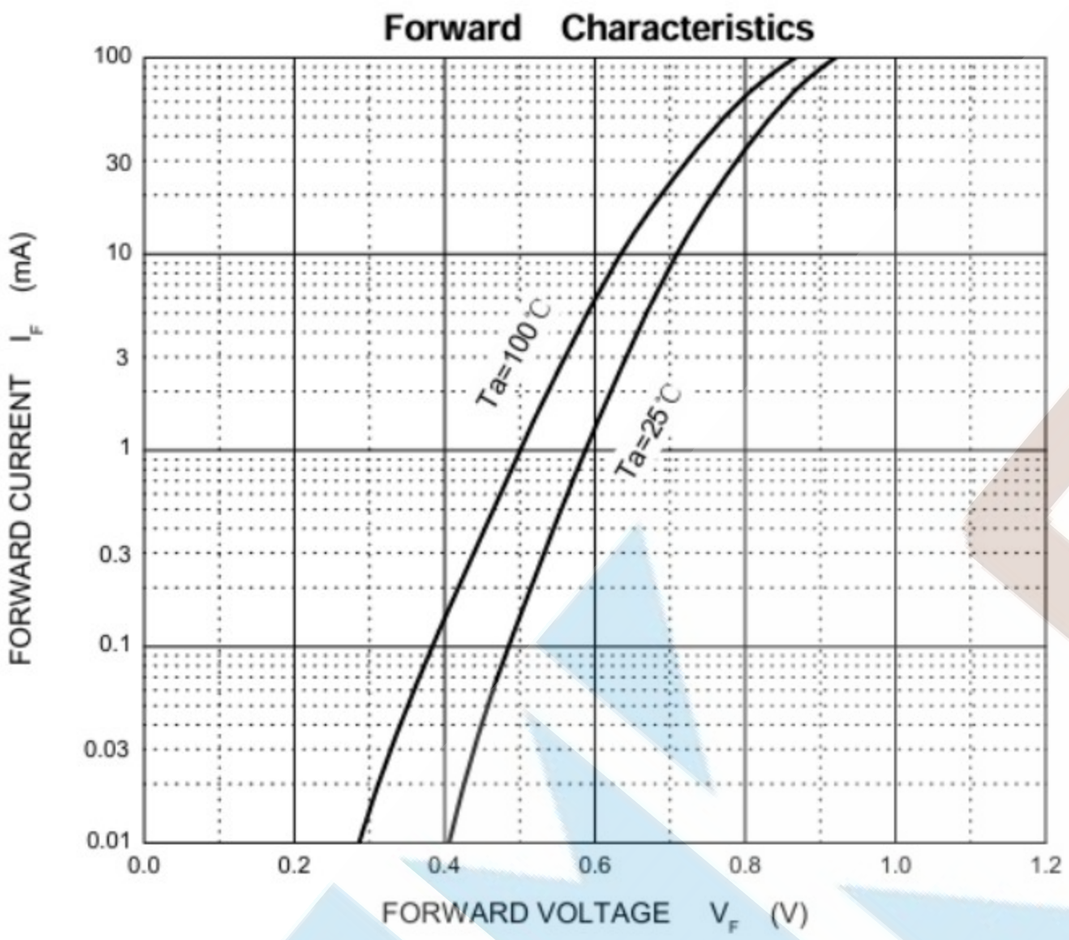
Parameter	Symbols	1SS184	Units
Repetitive peak reverse voltage	VRRM	85	V
DC Blocking Voltage	VR	80	V
Average forward current	IFAV	100	mA
Peak forward surge current(tp=1us)	IFSM	2	A
Power dissipation	PD	150	mW
Thermal Resistance Junction to Ambient Air	R θ JA	833	℃/W
Junction temperature	T_j	-55~150	℃
Storage temperature range	T_{stg}	-55~150	℃

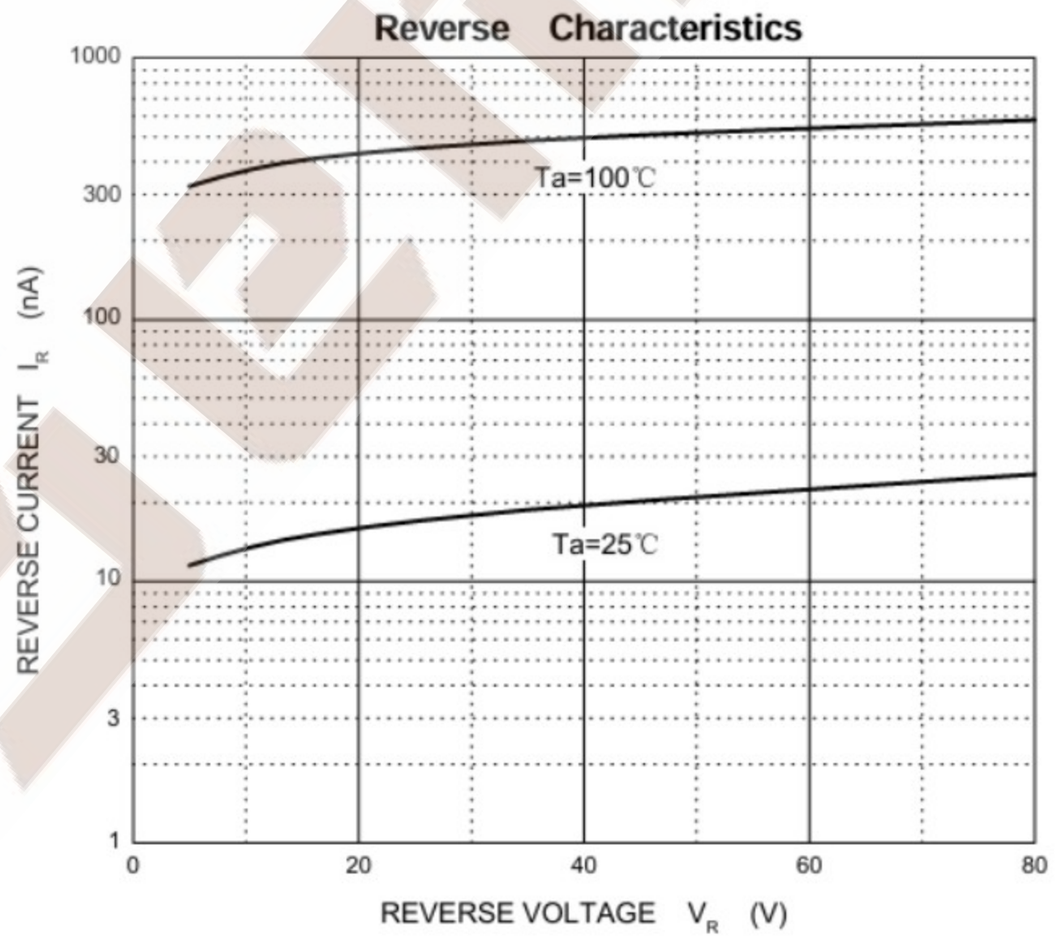
Note: 1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-side copper, tin-plated and standard footprint.

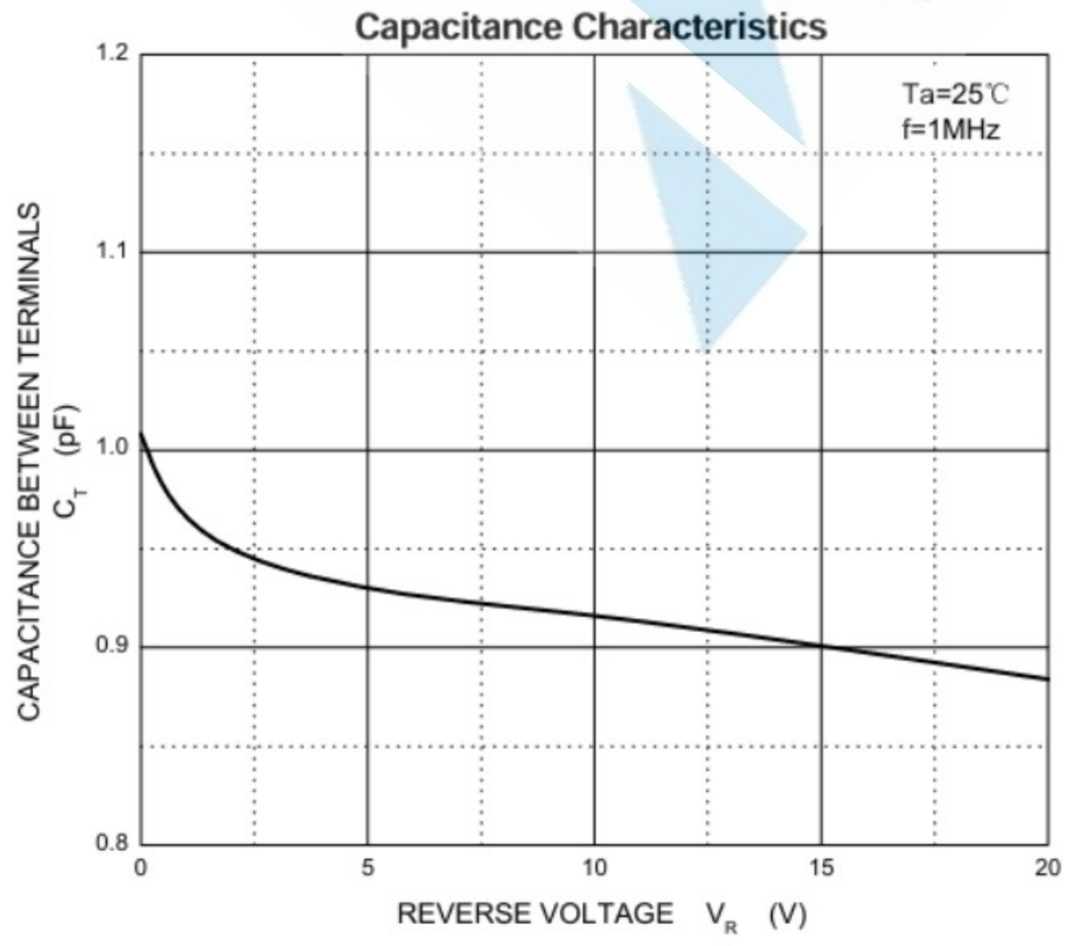
Electrical Characteristics (TJ=25℃ , unless otherwise noted)

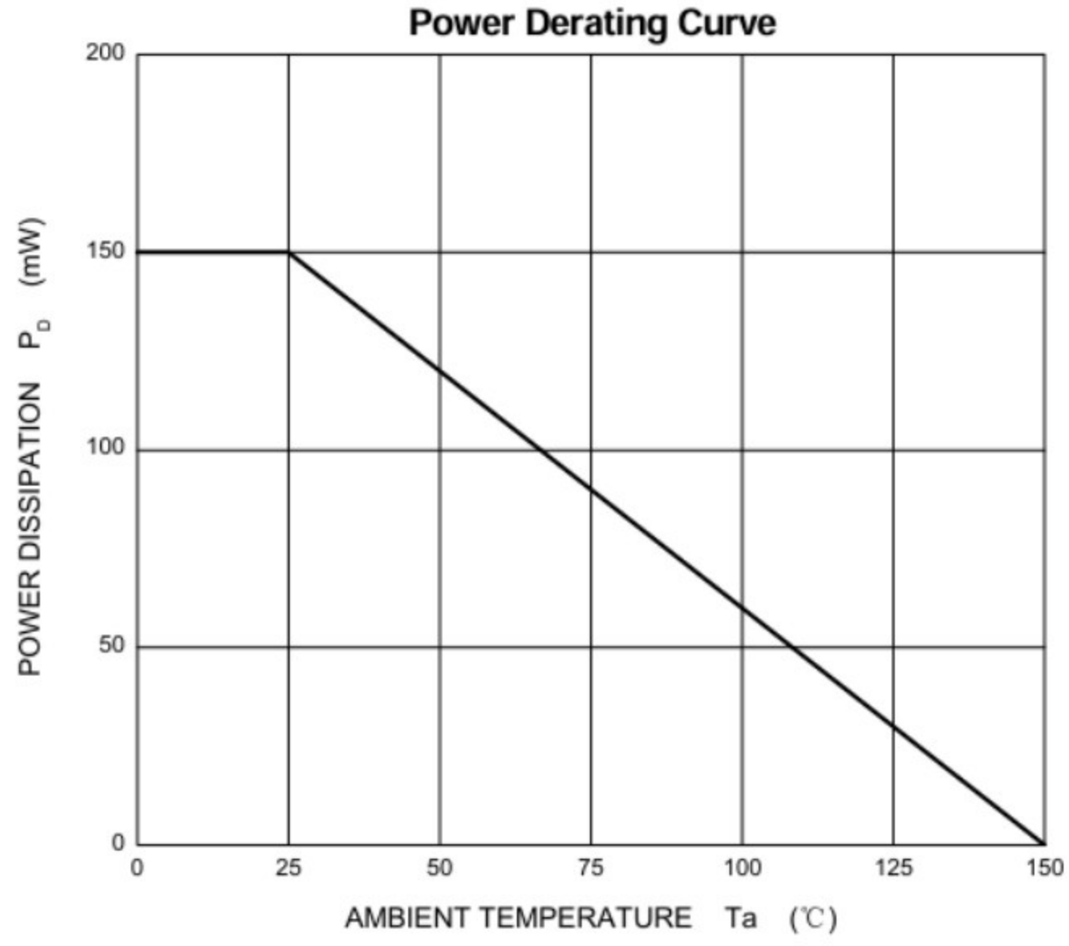
Parameter	Symbols	Test Conditions	Min	Type	Max	Units
Forward Voltage	V_{F1}	I_F=1mA		0.61	0.8	V
	V_{F2}	I_F=10mA		0.74	1.00	
	V_{F3}	I_F=100mA		0.93	1.2	
Reverse Current	I_{R1}	V_R=30V			0.1	μA
	I_{R2}	V_R=80V			0.5	
Breakdown Voltage	V_R	I_R=100 μA	80			V
Diode Capacitance	Cj	V_R=V_F=0V, f =1MHZ			3	pF
Reverse Recovery Time	t_{rr}	I_F=I_{rr}=10mA,I_{rr}=0.1I_R,R_L=100 Ω			4	ns

Ratings And Characteristic Curves



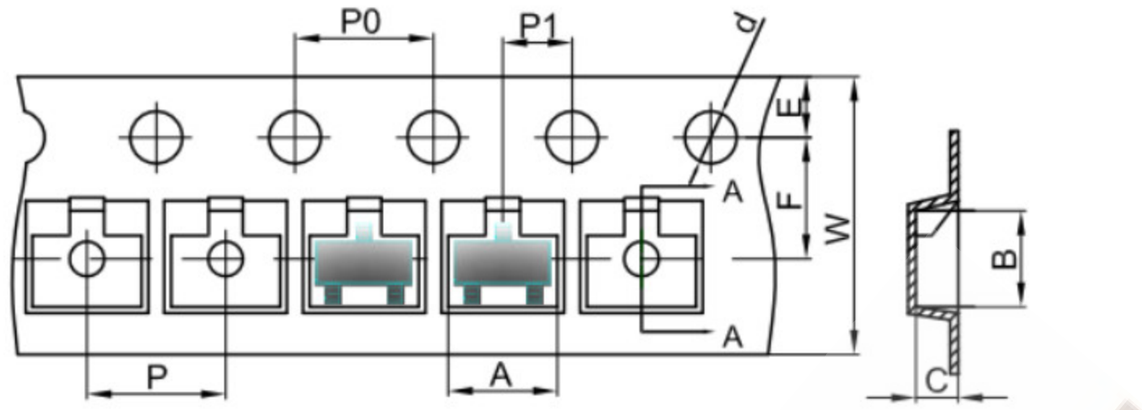






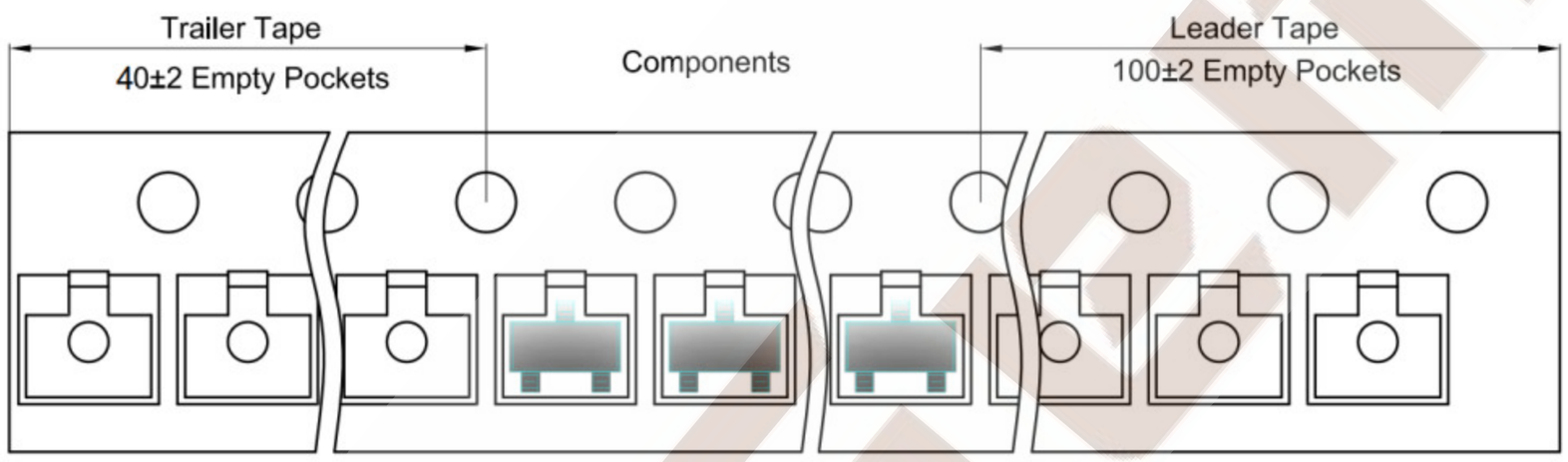
Package Information

Carrier Dimension(mm)

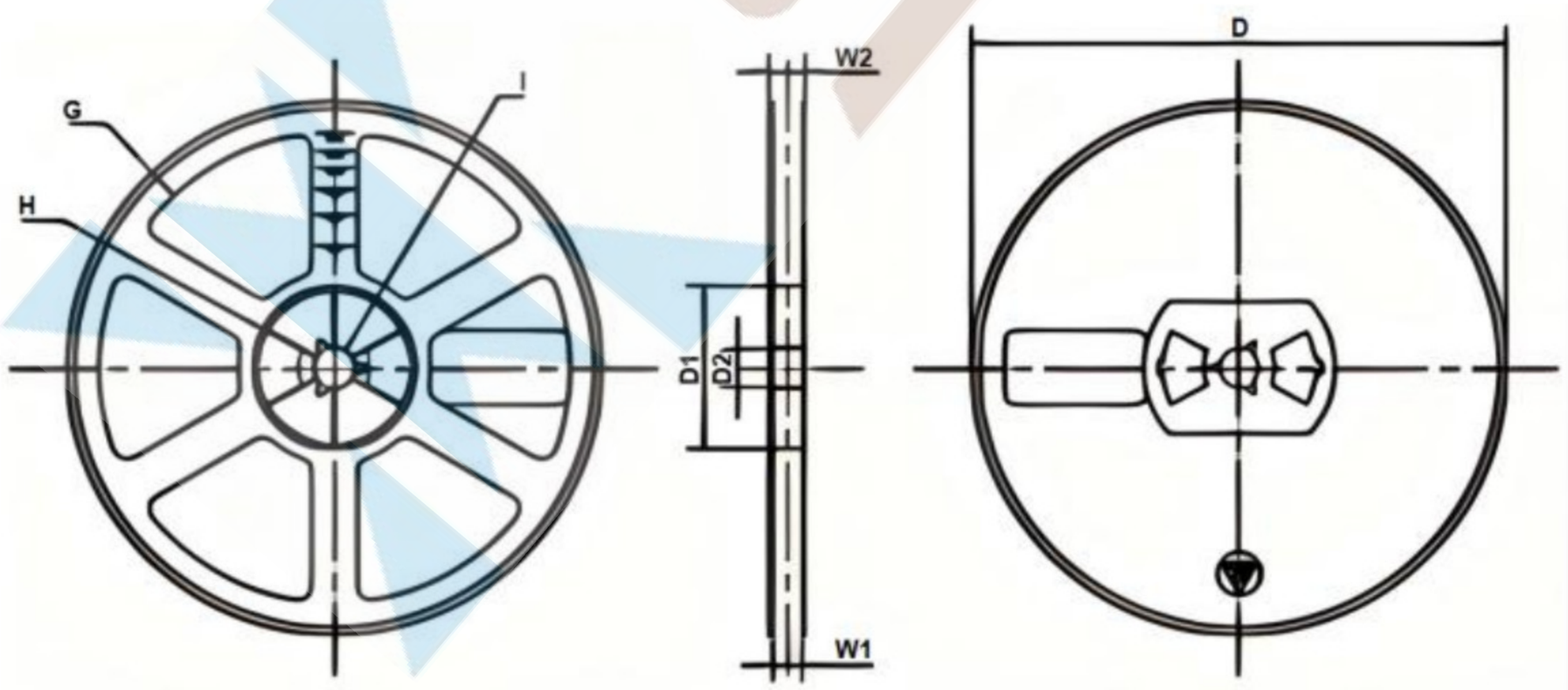


A-A

Dimensions are in millimeter															
Pkg Type	A0	A1	B0	B1	K0	D0	D1	E	F	P0	P1	P2	10*P0	W	T
SOT-23	3.15	1.09	2.77	2.15	1.22	1.55	1.00	1.75	3.50	4.00	4.00	2.00	40.00	8.00	0.20
Tolerance	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.2	±0.1	±0.03



Reel Dimension(mm)



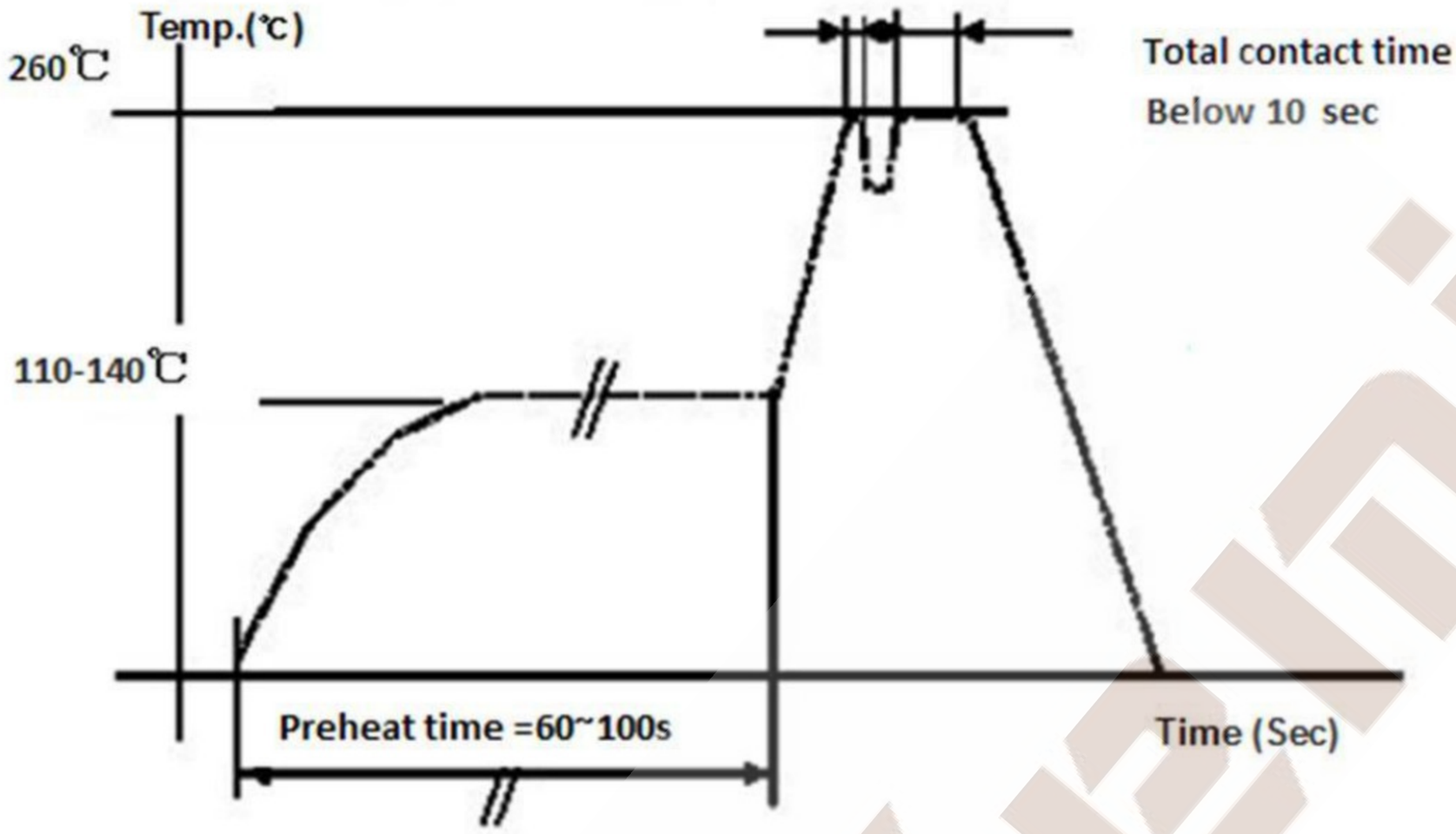
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

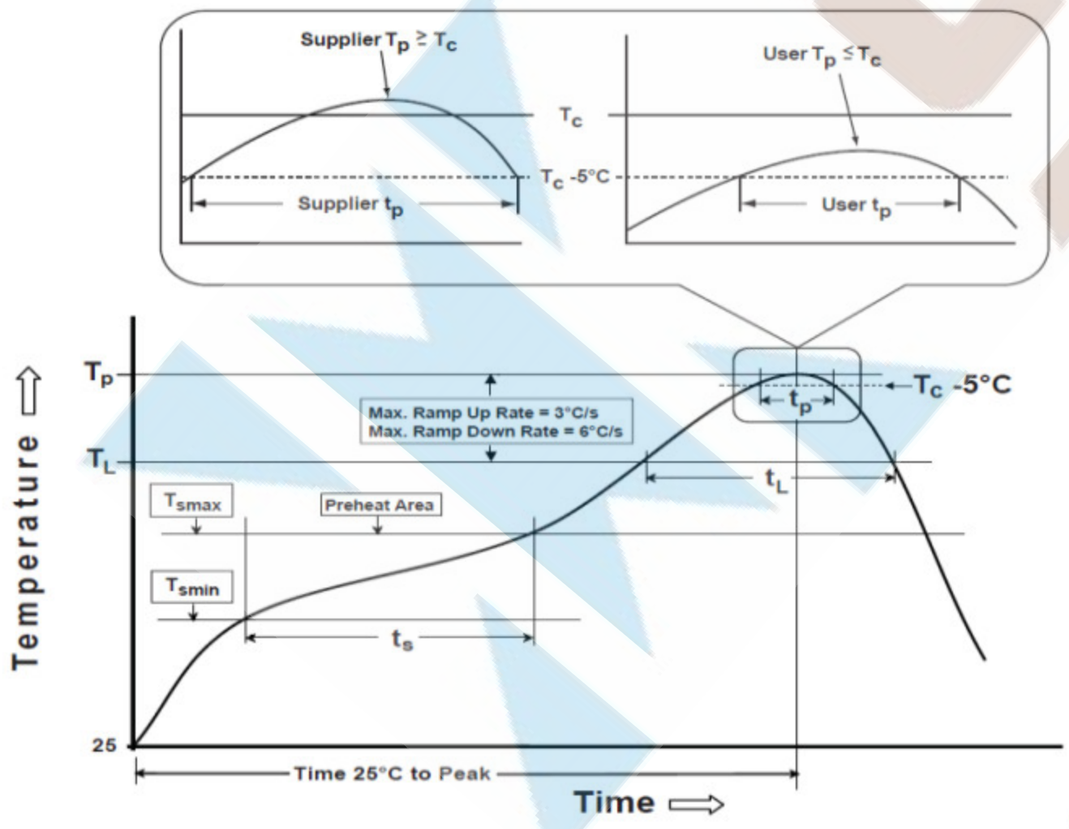
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT23	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

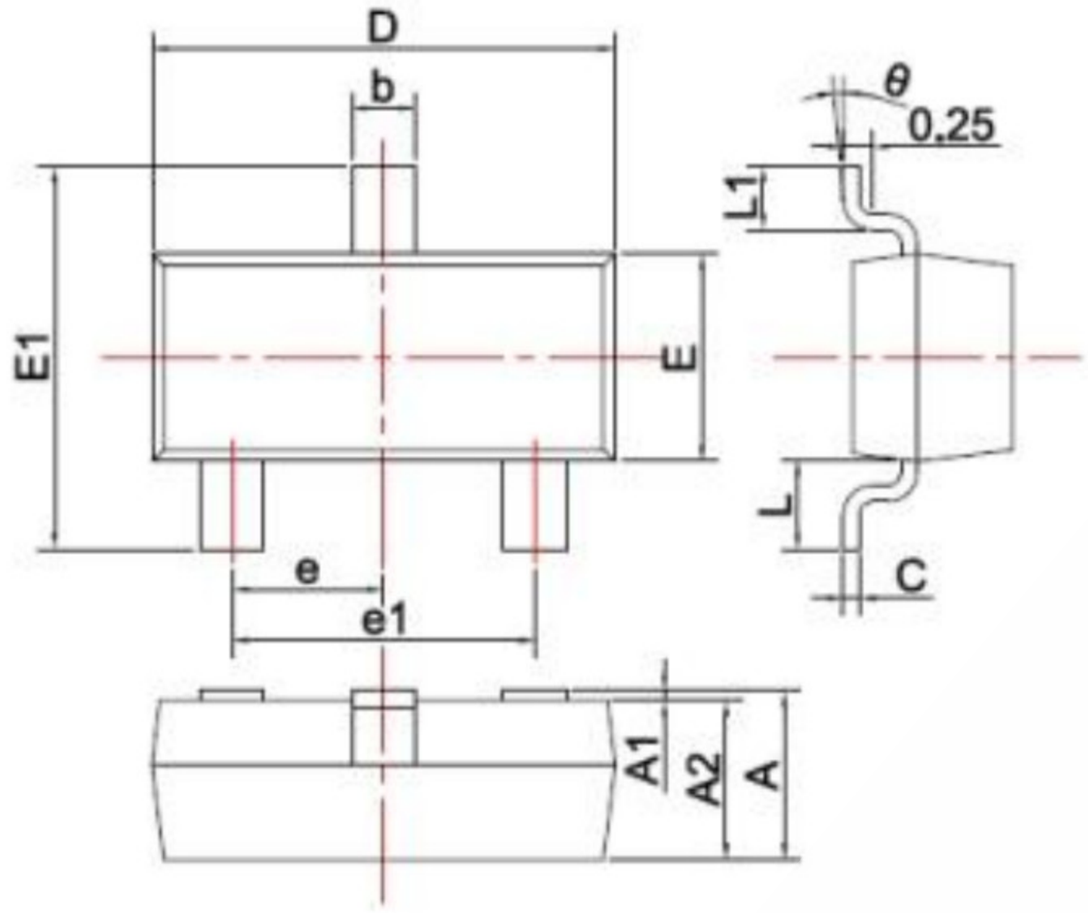


Preheat/Soak Temperature Min (Tsmin) Temperature Max (Tsmax) Time (ts) from (Tsmin to Tsmax)	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217℃
Ramp-up Rate to 217℃(Melting Point of Solder)	3℃/sec
Time at Temp.>217℃ (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5℃
Time within 5℃below Peak Temp.	20~40 Sec
Cooling Rate	6℃/sec (max)
Time from 25℃ to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300 ℃ and the soldering time is less than 10 seconds.

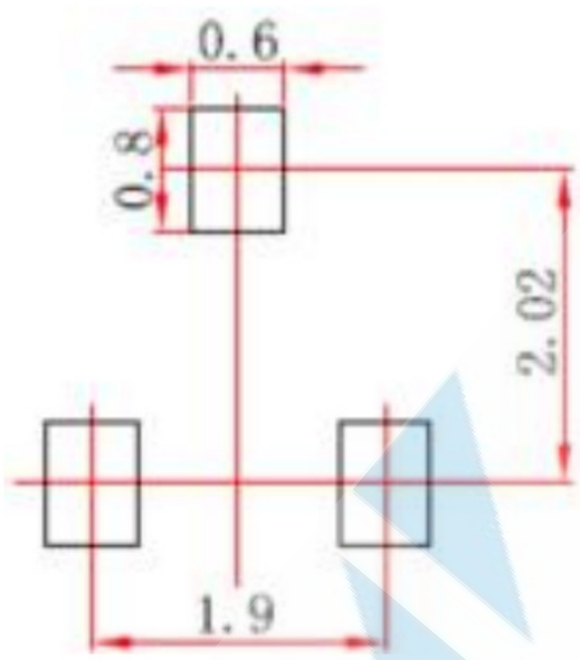
Package Mechanical Data



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Suggested Pad Layout



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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