

General Characteristics



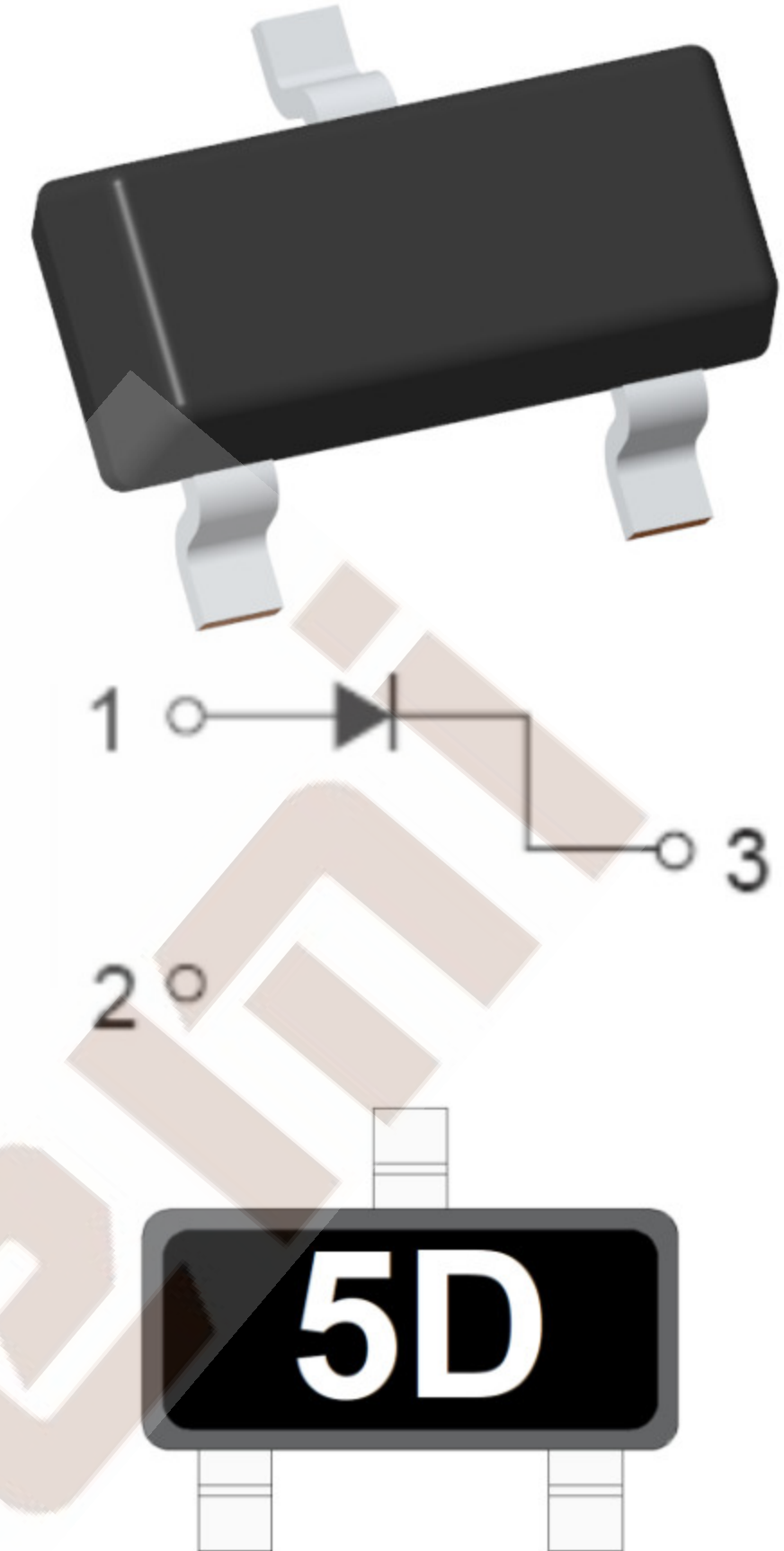
V_R	I_F	$V_{F(\text{type})}$	I_{FSM}	$T_{j\text{max}}$
100V	300mA	0.98V	2A	150°C

Features

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

Application

- Extreme fast switches
- Automotive



Package Marking and Ordering Information

Product ID	Package	Marking	Qty(PCS)
MMBD914	SOT23	5D	3000

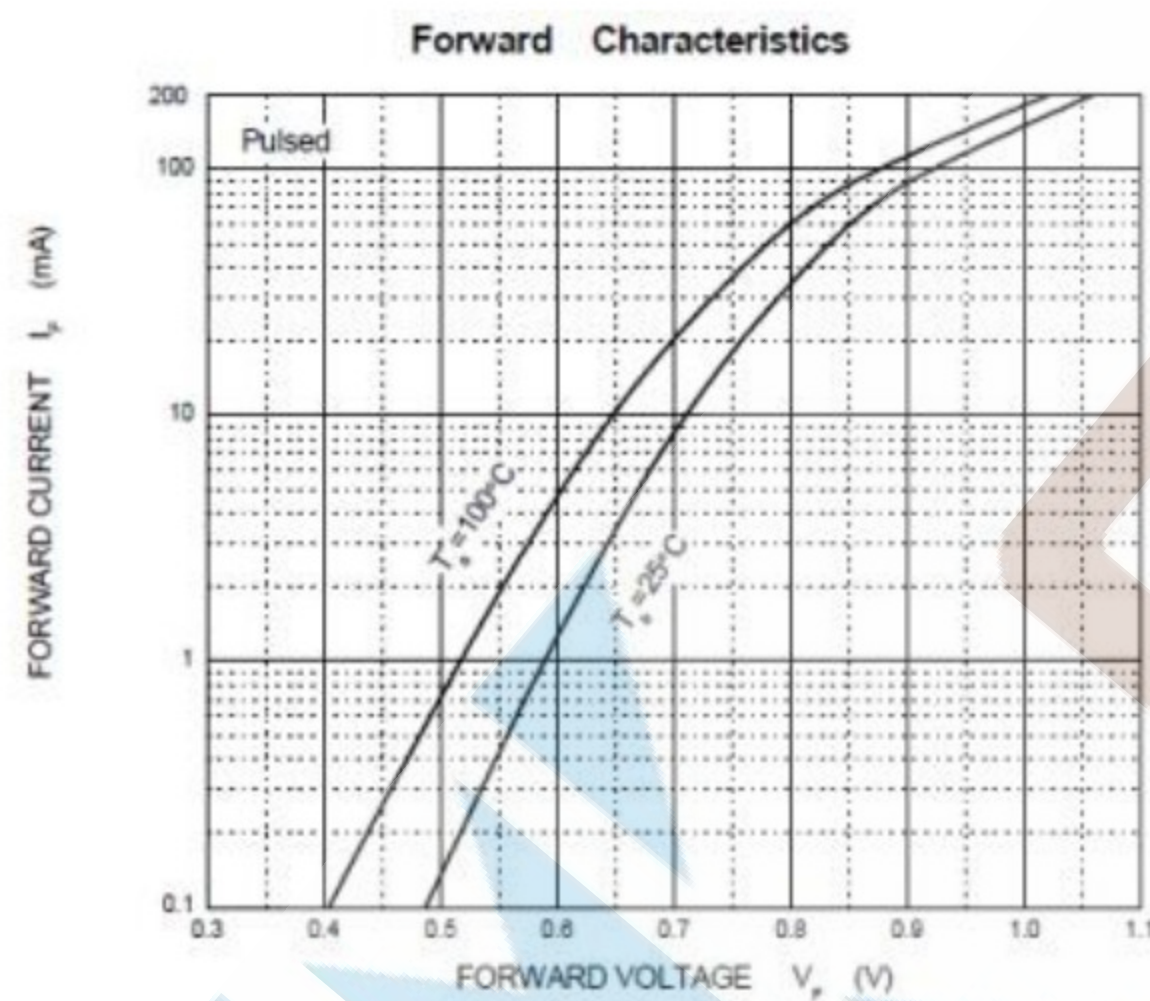
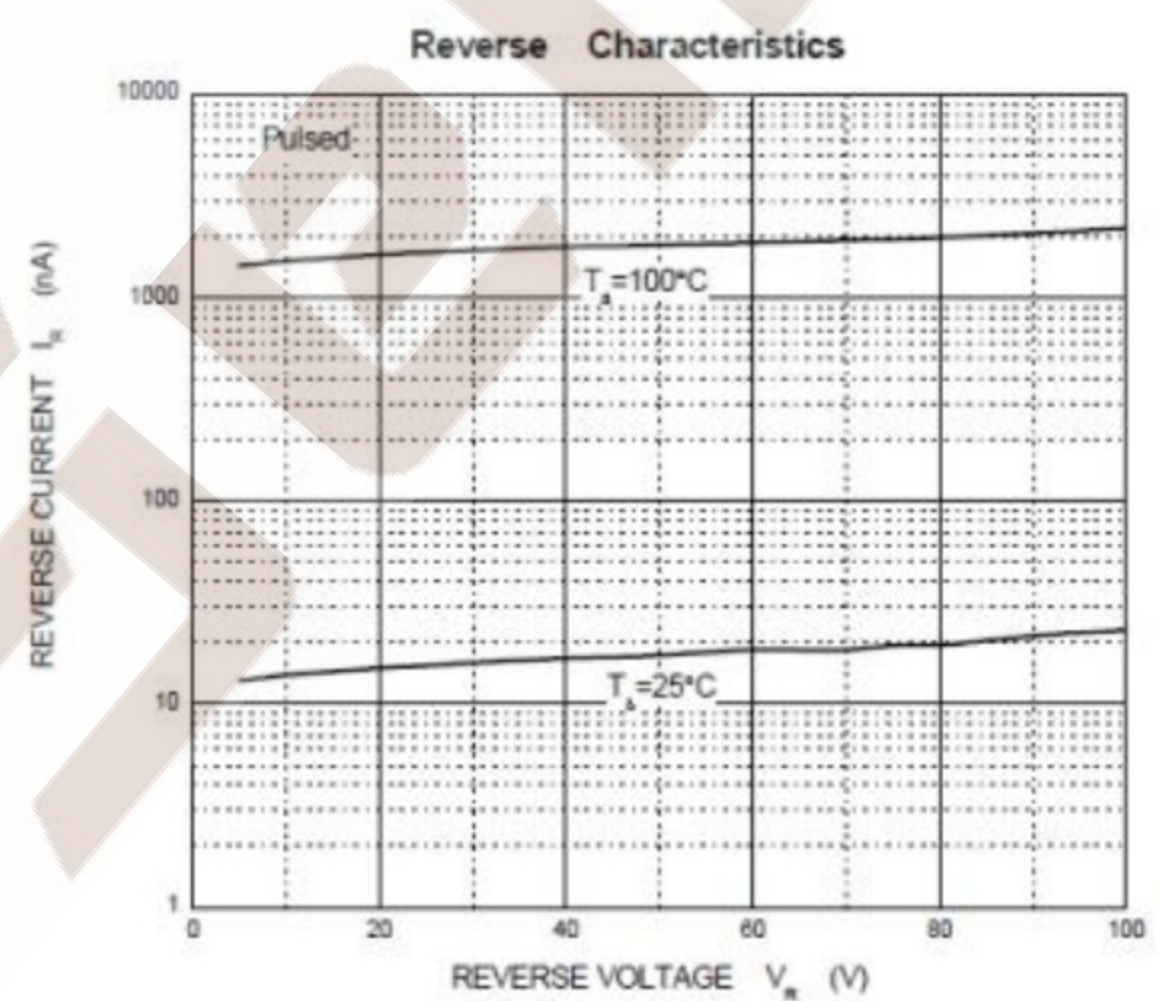
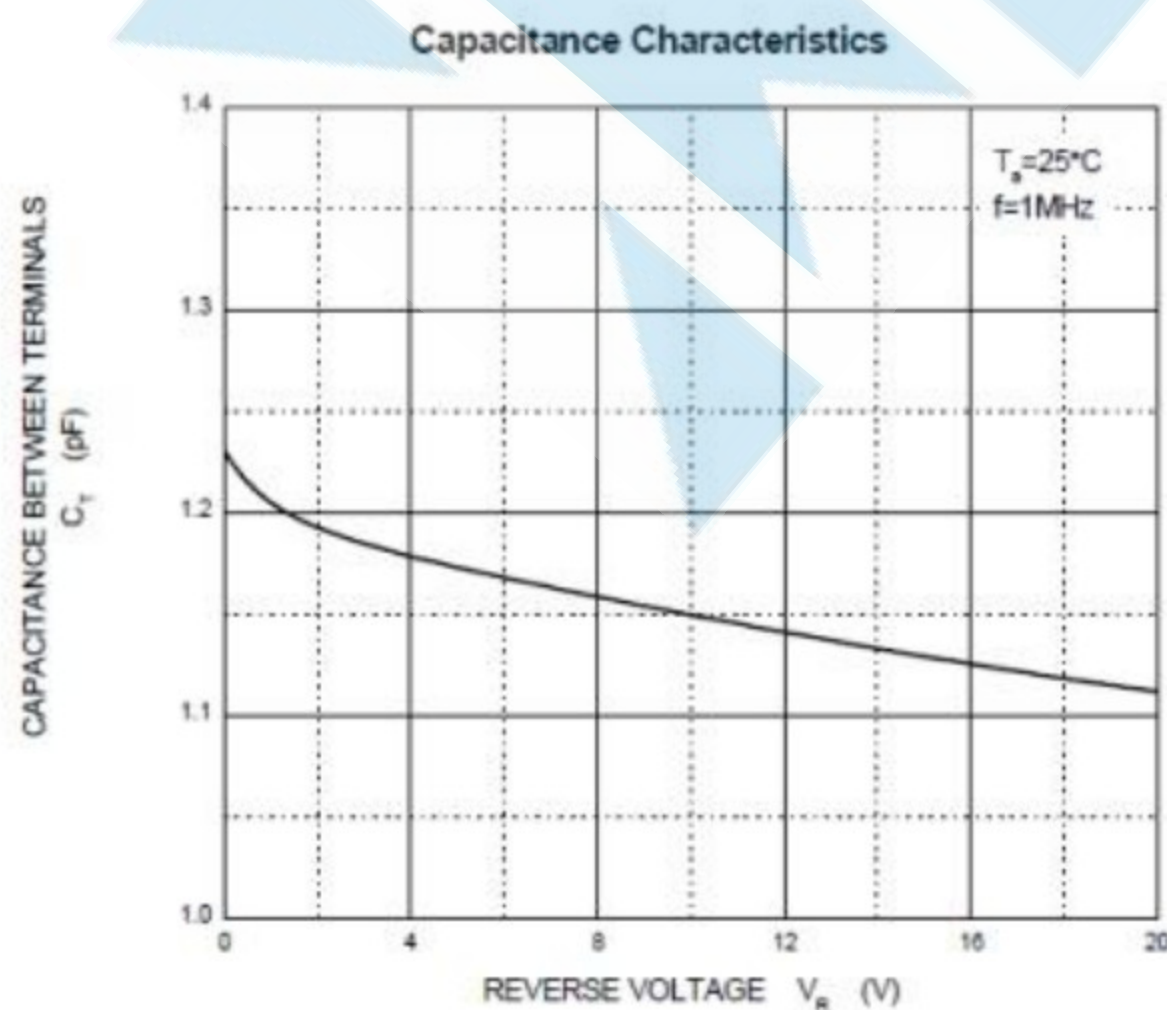
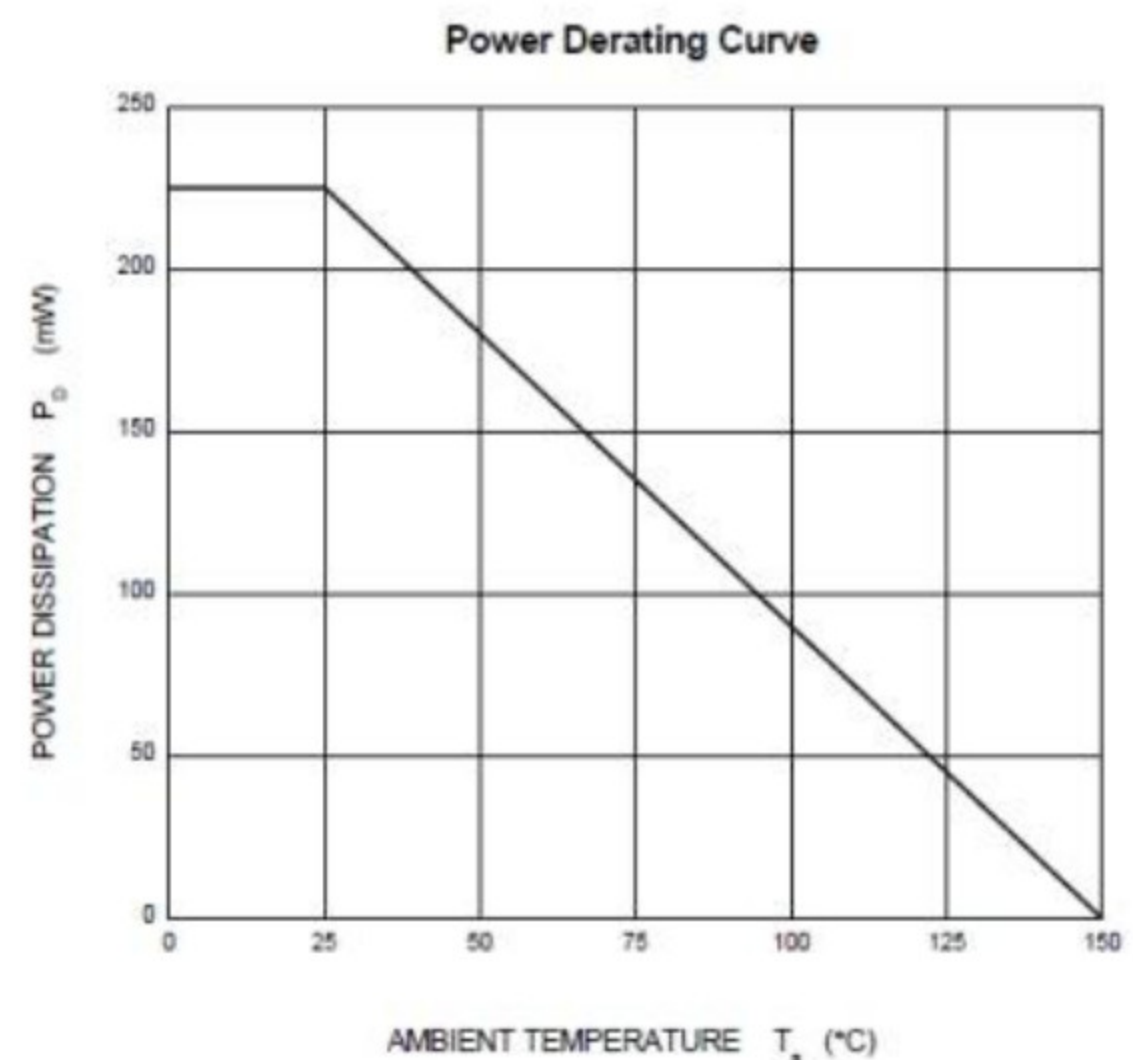
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Parameter	Symbols	MMBD914	Units
Repetitive peak reverse voltage	VRRM	100	V
DC Blocking Voltage	VR	100	V
Average forward current	IFAV	300	mA
Peak forward surge current(tp=1us)	IFSM	2	A
Power dissipation	PD	350	mW
Thermal Resistance Junction to Ambient Air	R θ JA	357	°C/W
Junction temperature	Tj	-55~150	°C
Storage temperature range	Tstg	-55~150	°C

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

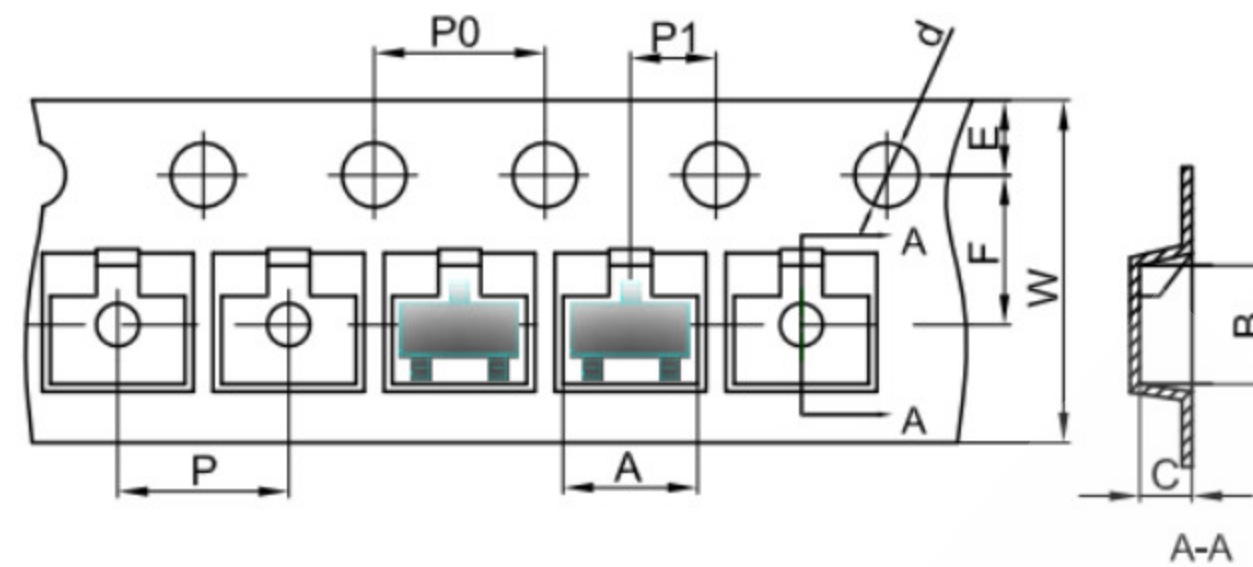
Electrical Characteristics (T_J=25°C , unless otherwise noted)

Parameter	Symbols	Test Conditions	Min	Type	Max	Units
Forward Voltage	V _{F1}	I _F =1mA		0.55	0.715	V
	V _{F2}	I _F =10mA		0.67	0.855	
	V _{F3}	I _F =50mA		0.83	1	
	V _{F4}	I _F =150mA		0.98	1.25	
Reverse Current	I _{R1}	V _R =20V			0.025	μ A
	I _{R2}	V _R =75V			1	
Breakdown Voltage	V _R	I _R =100 μ A	100			V
Diode Capacitance	C _j	V _R =V _F =0V, f =1MHZ			2	pF
Reverse Recovery Time	t _{rr}	I _F =I _{rr} =10mA, I _{rr} =0.1I _R , R _L =100 Ω			4	ns

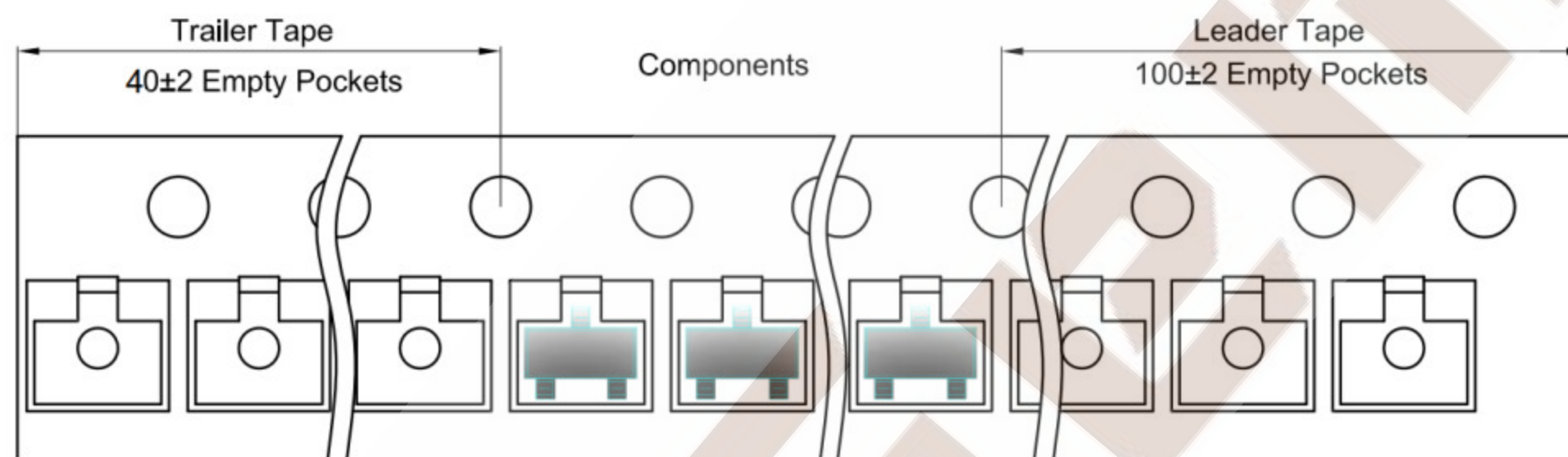
Ratings And Characteristic Curves


Package Information

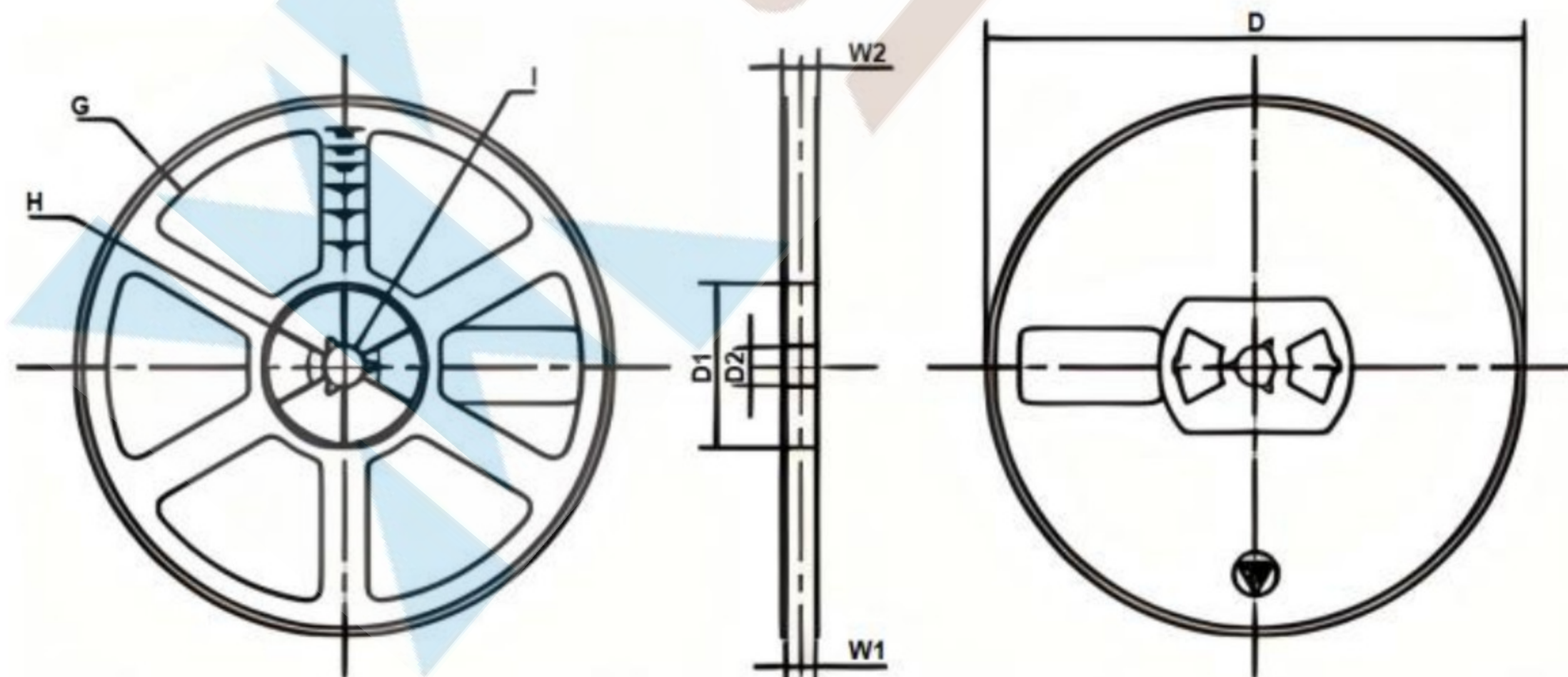
Carrier Dimension(mm)



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)



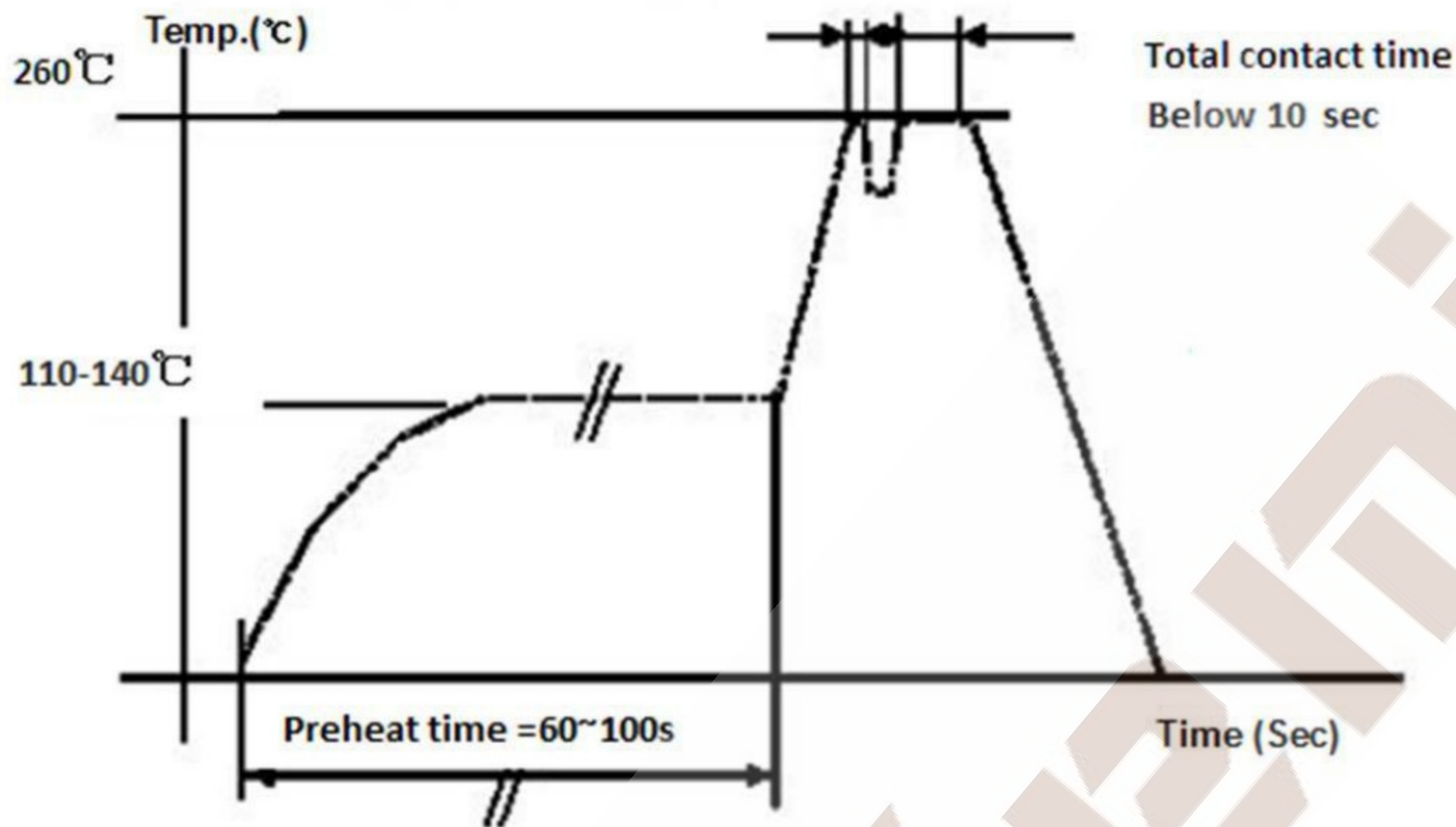
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

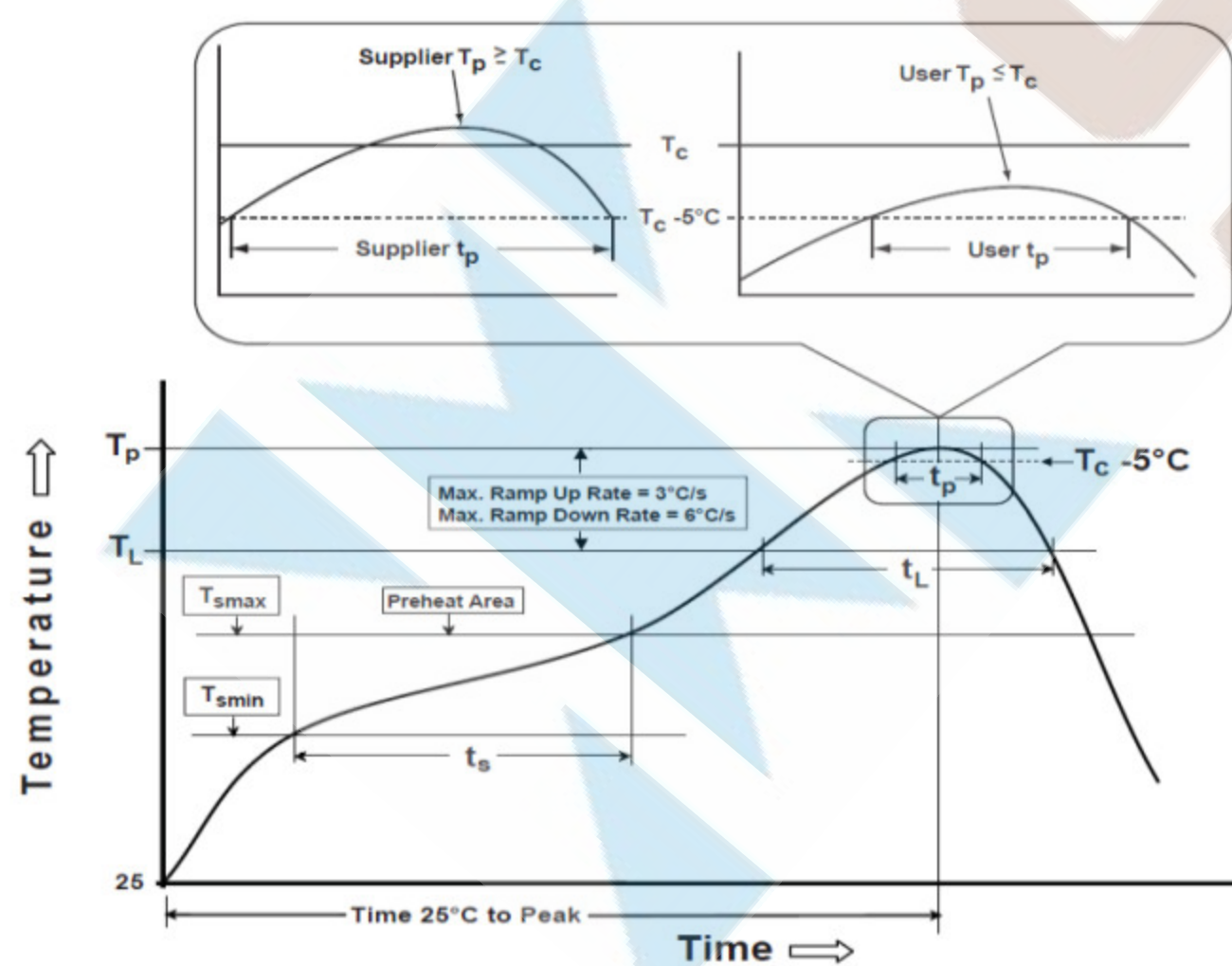
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT23	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



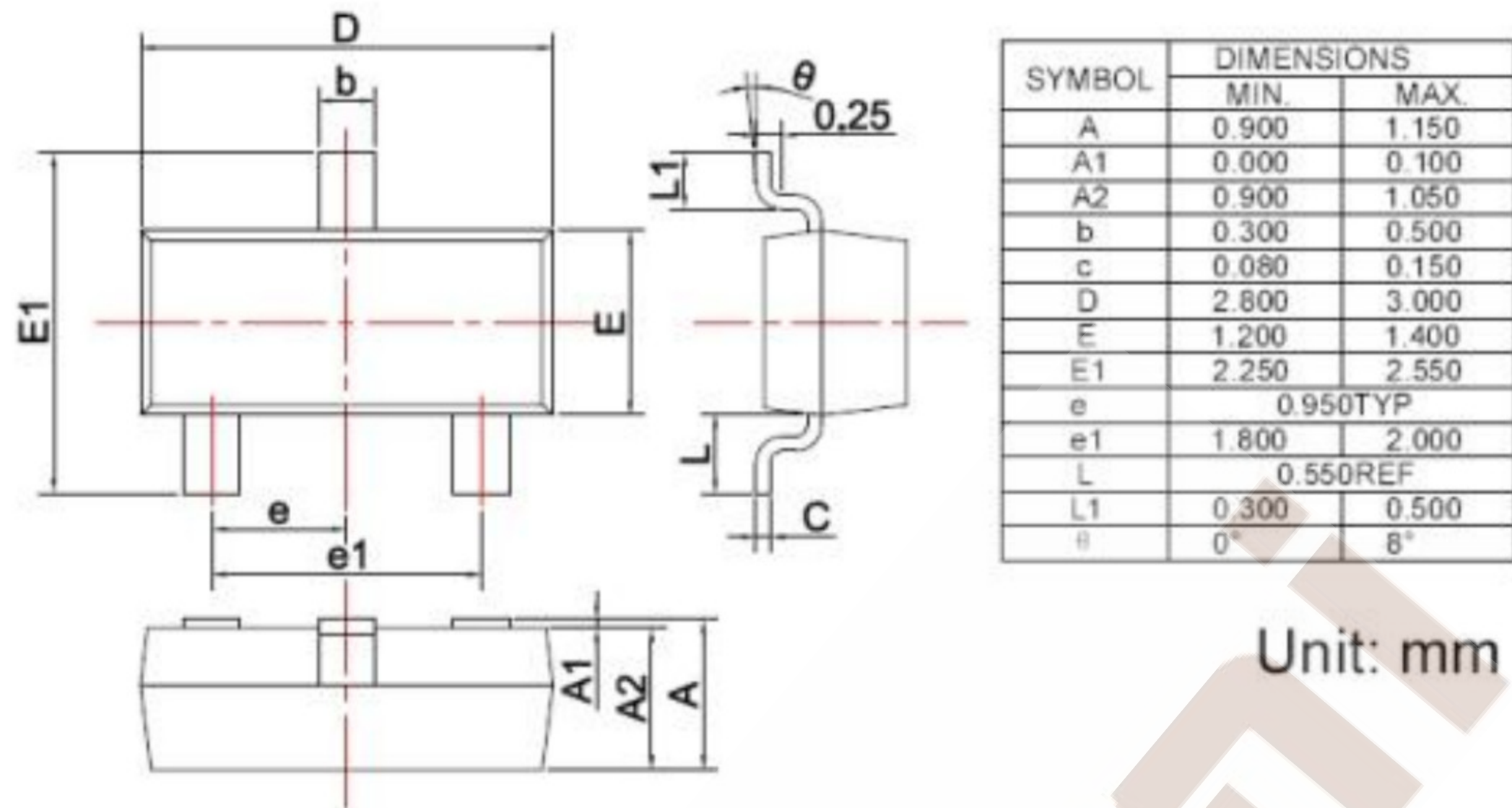
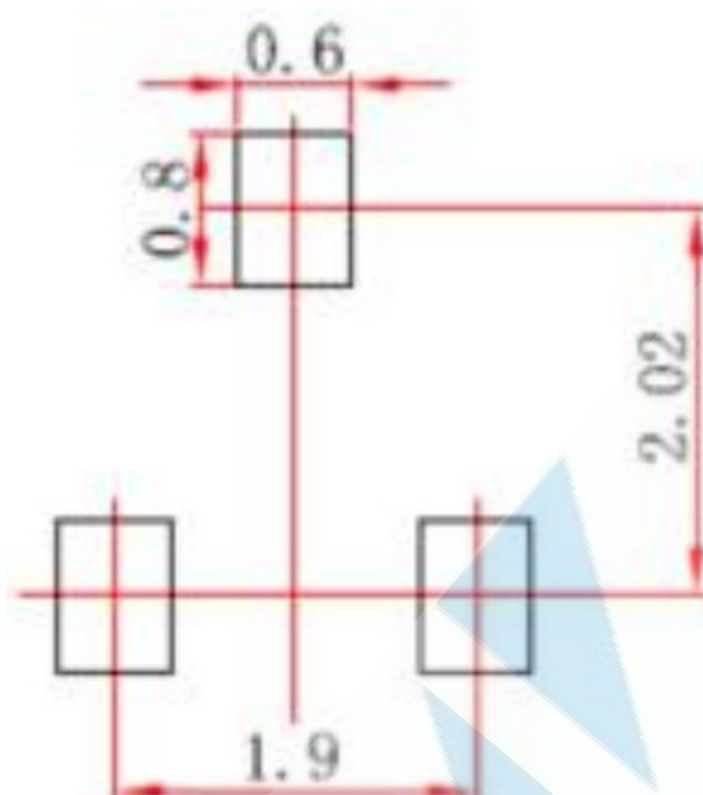
b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020



Preheat/Soak Temperature Min (T _{min}) Temperature Max (T _{max}) Time (ts) from (T _{min} to T _{max})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C 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 °C and the soldering time is less than 10 seconds.

Package Mechanical Data

Suggested Pad Layout

Note:

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

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