

Schottky Barrier Diode

Features

- Small Surface Mounting Type
- Ideal for Automated Placement
- High Surge Capability
- Low Forward Voltage Drop
- Ultrafast Reverse Recovery Time
- Low Power Losses, High Efficiency
- RoHS Compliant

Applications

- Low Voltage
- Free Wheeling
- Switching circuit
- High-Frequency Inverters

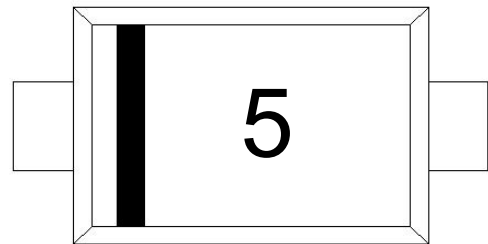
Mechanical Characteristics

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020

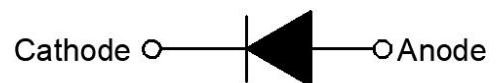


Marking: 5

SOD-523



Schematic Diagram



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

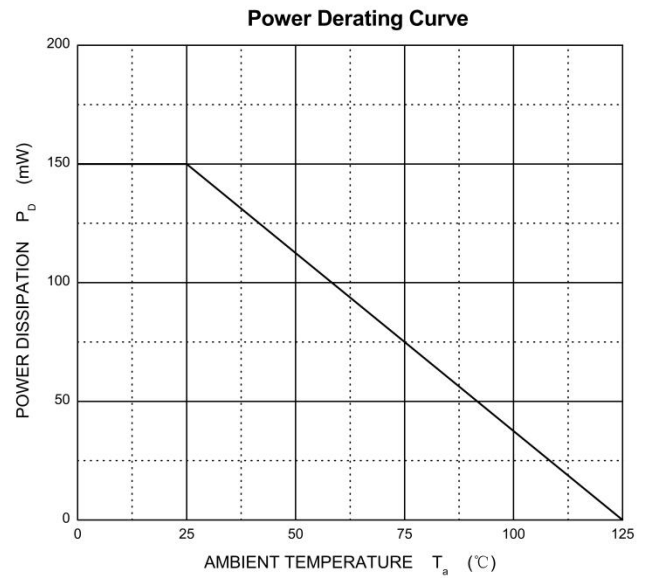
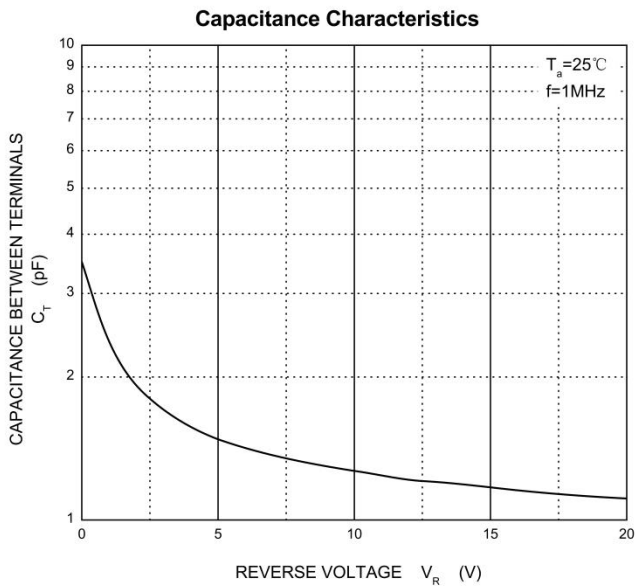
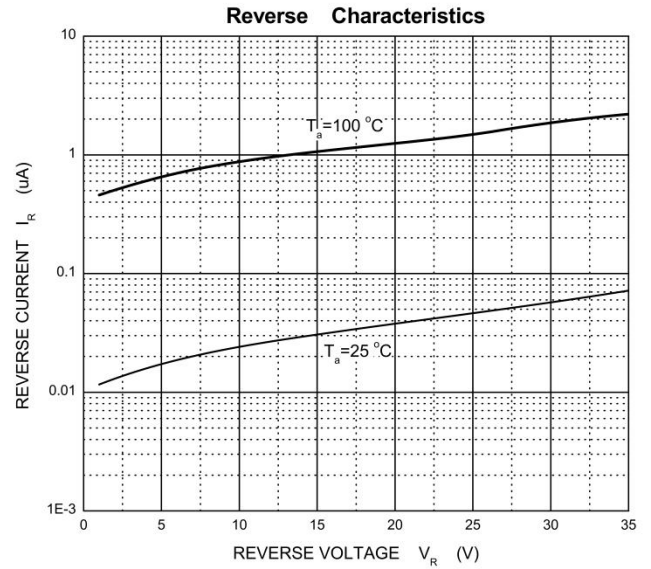
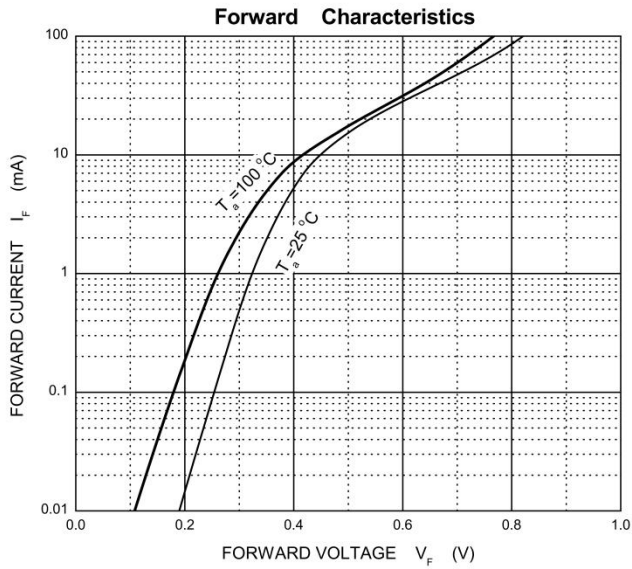
Parameter	Symbol	Limit	Unit
Reverse Voltage (Repetitive Peak)	V_{RRM}	40	V
Reverse Voltage (RMS)	$V_{R(RMS)}$	32	V
DC Blocking Voltage	V_R	40	V
Average rectified output current	I_O	30	mA
Non-repetitive Peak Forward Surge Current@ $t=8.3\text{ms}$	I_{FSM}	0.2	A
Power Dissipation	P_D	150	mW
Thermal Resistance Junction to Ambient(Typ)	$R_{\theta JA}$	320	$^{\circ}\text{C/W}$
Operating Junction temperature	T_J	-55 ~ +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Electrical Specifications($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage	V_{BR}	$I_R = 1\text{mA}$	40			V
Reverse Leakage Current	I_R	$V_R = 30\text{V}$			0.5	μA
Forward Voltage	V_F	$I_F = 1\text{mA}$			0.37	V
Total Capacitance	C_T	$V_R=1\text{V}, f=1\text{MHz}$		2		pF

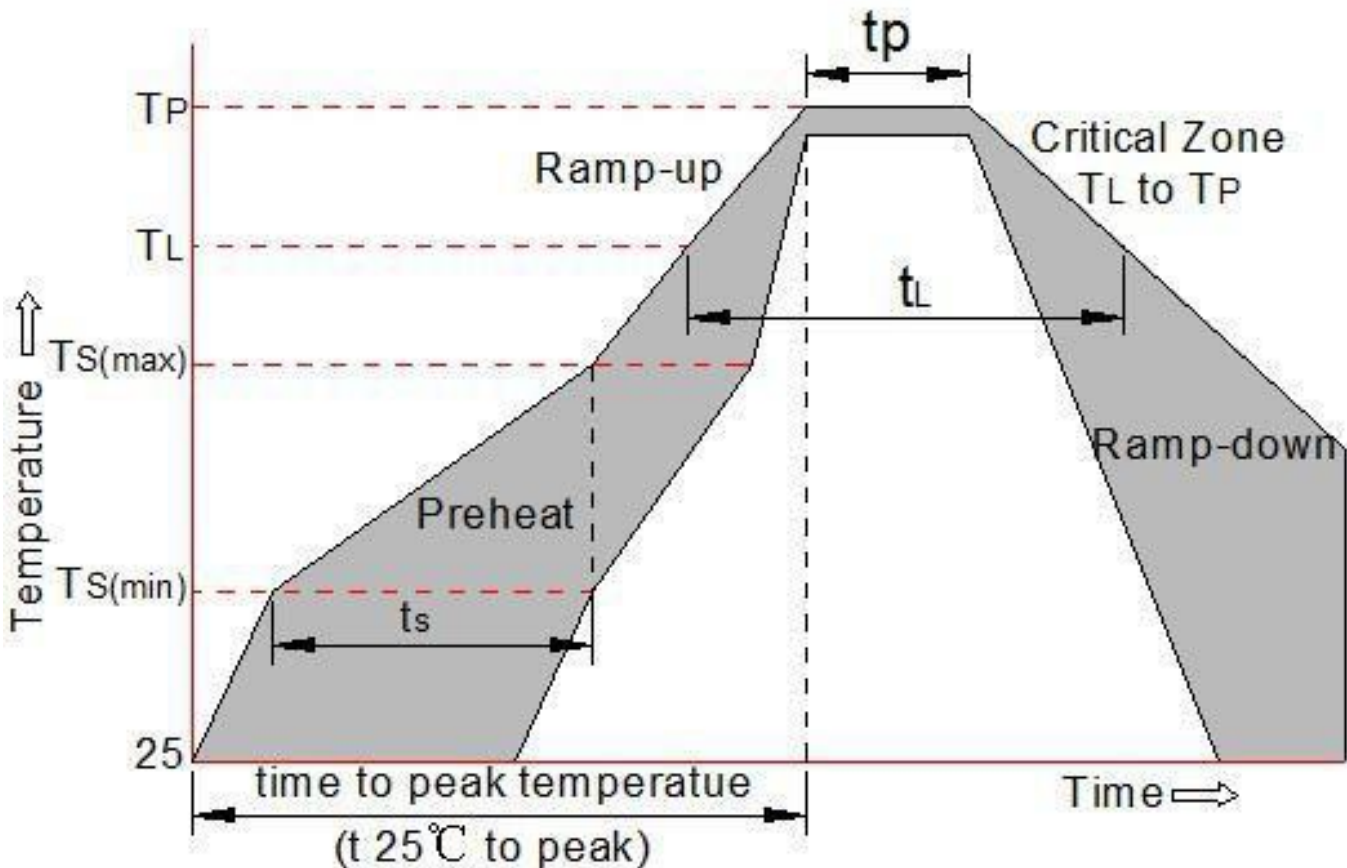
Ratings and Characteristics Curves

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



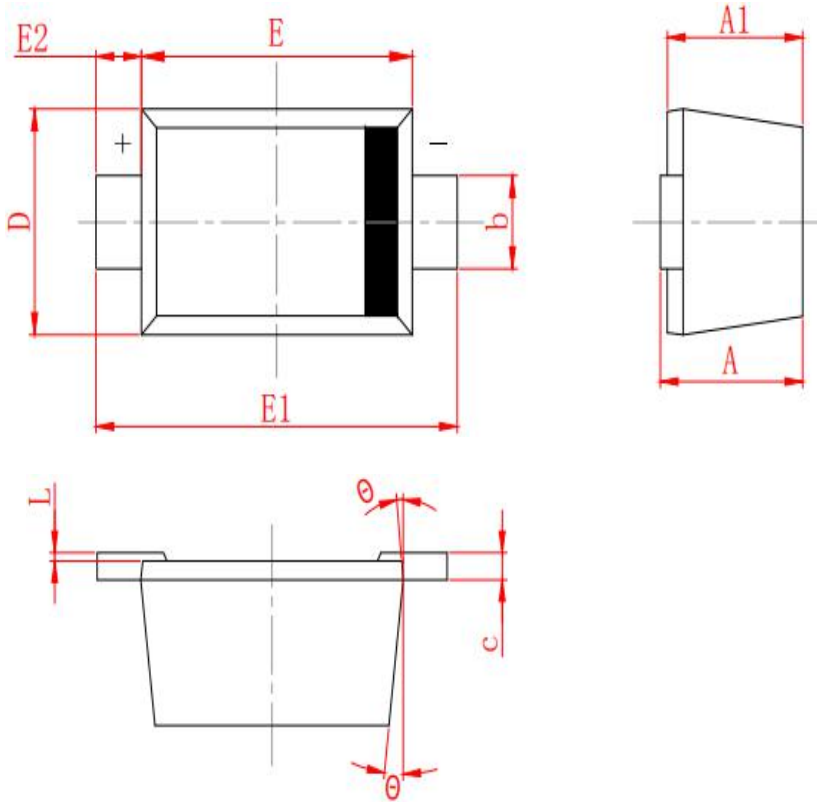
Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150 °C
	-Temperature Max($T_{s(max)}$)	+200 °C
	-Time (Min to Max) (t_s)	60 -180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C /sec. Max
$T_{s(max)}$ to T_L - Ramp -up Rate		3°C /sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217 °C
	-Temperature(t_L)	60 -150 secs.
Peak Temp (T_p)		+260(+0/ -5) °C
Time within 5 °C of actual Peak Temp (t_p)		30 secs. Max
Ramp -down Rate		6°C /sec. Max
Time 25 °C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 °C



Package Outline Dimensions

millimeters



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.530	0.730
A1	0.500	0.700
b	0.280	0.380
c	0.080	0.150
D	0.750	0.850
E	1.100	1.300
E1	1.500	1.700
E2	0.200 REF	
L	0.010	0.070
θ	7° REF	

Revision History

Document Version	Date of release	Description of changes
Rev.A	2022.05.10	First issue

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