



MBR130

Schottky Power Rectifier

Features

- Low forward voltage drop
- Low power loss, high efficiency
- For surface mounted applications
- For use in low voltage, high frequency inverters, Free wheeling, and polarity protection applications



cathode 1  2 Anode

Marking:S3

Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Reverse Voltage	V_R	30	V
Average Rectified Forward Current@ $V_R, T_L=65^{\circ}\text{C}$	$I_{F(AV)}$	1	A
Non-Repetitive Peak Surge Current ⁽¹⁾	I_{FSM}	5.5	A
Operating Junction Temperature	T_J	-65~+125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-65~+125	$^{\circ}\text{C}$
Voltage Rate of Change@ V_R	dv/dt	1000	V/ μs

Thermal Characteristics

Parameter	Symbol	Value	Units
Thermal Resistance Junction to Ambient ⁽²⁾	$R_{\theta JA}$	230	$^{\circ}\text{C}/\text{W}$
Thermal Resistance Junction to Lead ⁽²⁾	$R_{\theta JL}$	108	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R=500\mu\text{A}$	30	-	-	V
Instantaneous Forward Voltage ⁽³⁾	V_F	$I_F=0.1\text{A}, T_J=25^{\circ}\text{C}$	-	-	0.35	V
		$I_F=0.7\text{A}, T_J=25^{\circ}\text{C}$	-	-	0.45	V
		$I_F=1.0\text{A}, T_J=25^{\circ}\text{C}$	-	0.47	-	V
Instantaneous Reverse Current	I_R	$V_R=30\text{V}, T_C=25^{\circ}\text{C}$	-	-	60	μA
		$V_R=5\text{V}, T_C=25^{\circ}\text{C}$	-	-	10	μA

Note: (1) Surge applied at rated load conditions Halfwave, Single Phase, 60Hz

(2) FR-4 or FR-5 = 3.5 x 1.5 inches using a 1 inch Cu pad.

(3) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$



Typical Characteristic

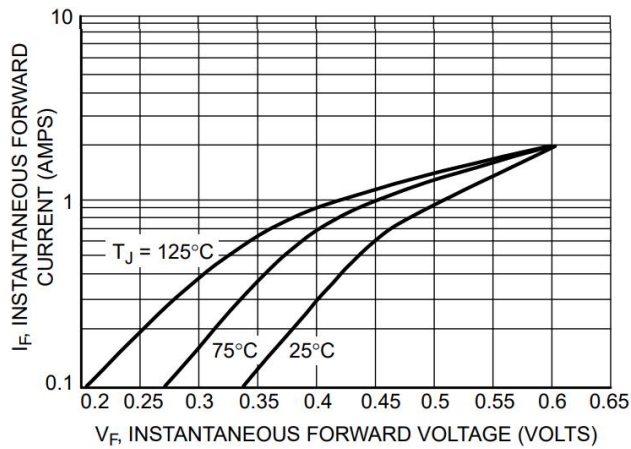


Figure 1. Maximum Forward Voltage

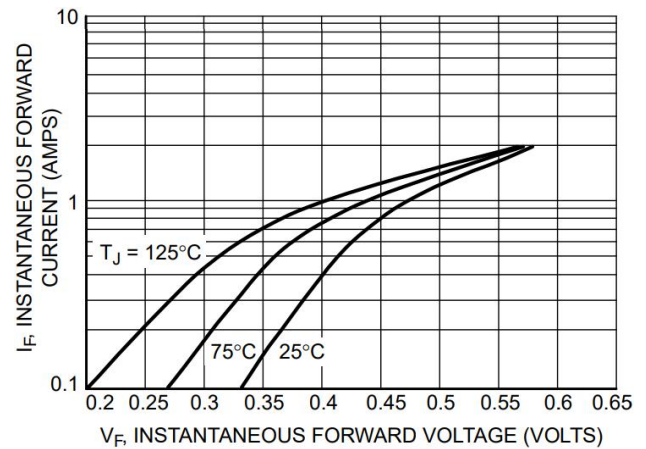


Figure 2. Typical Forward Voltage

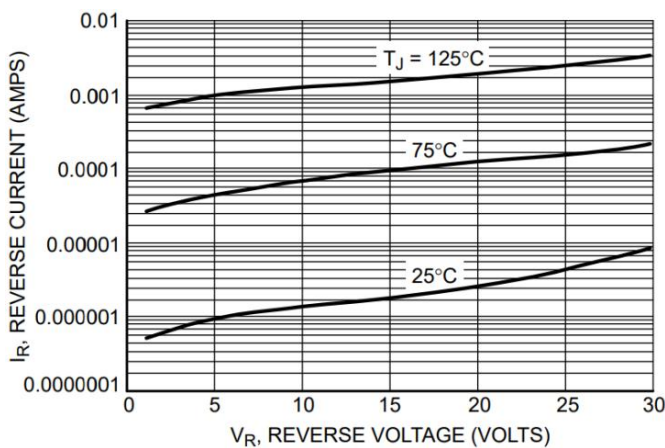


Figure 3. Typical Reverse Current

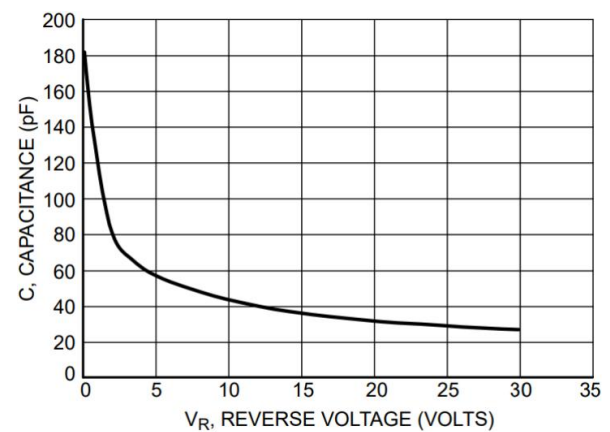


Figure 4. Typical Capacitance

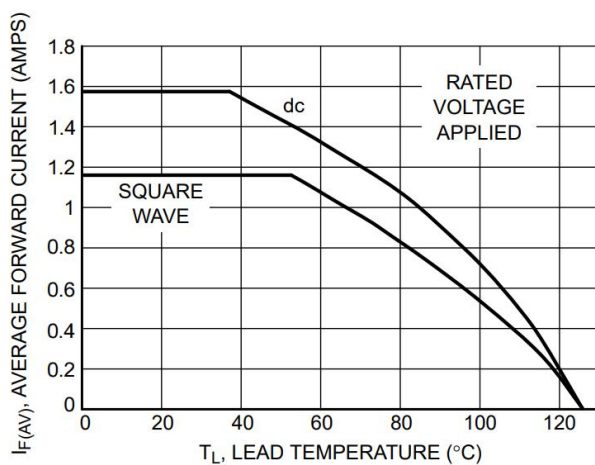


Figure 5. Current Derating, Lead, $R_{\theta_{JL}} = 108^{\circ}\text{C/W}$

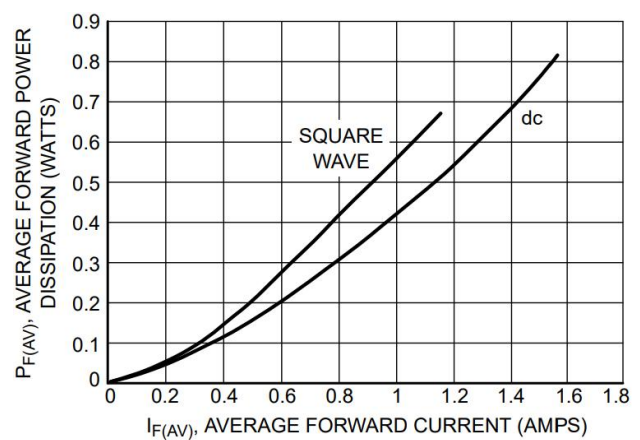


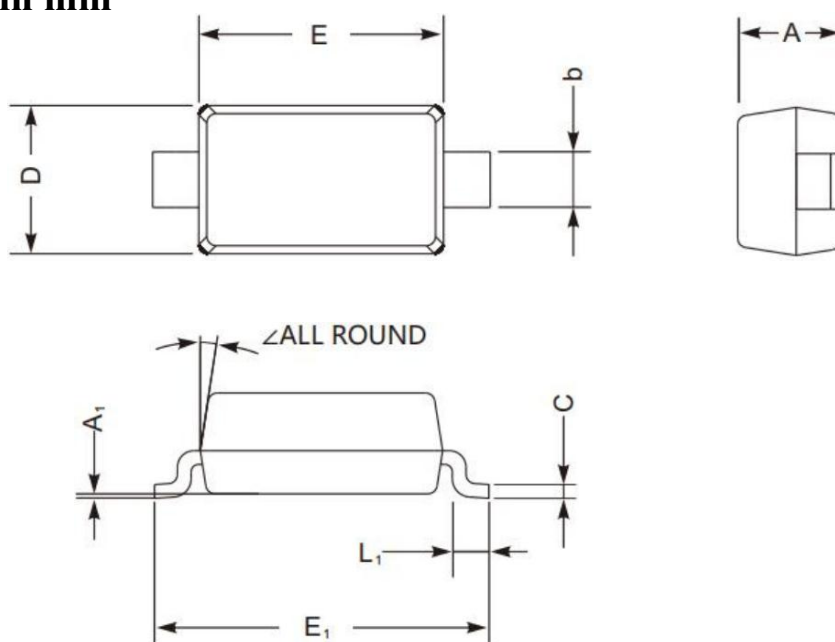
Figure 6. Forward Power Dissipation



Package Information

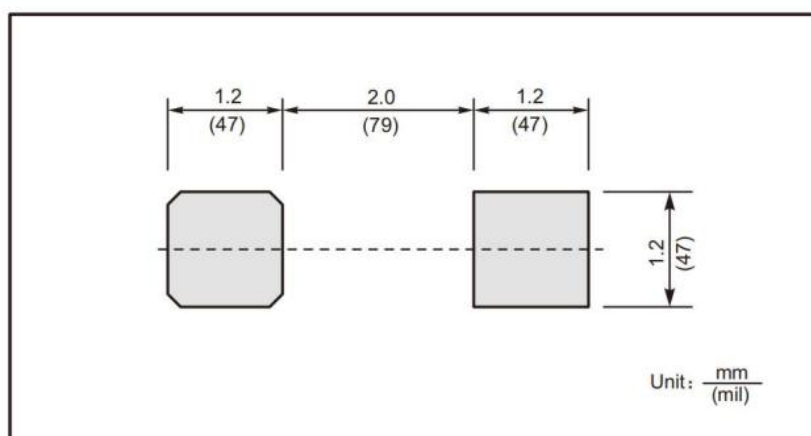
SOD-123

Dimensions in mm



Unit		A	C	D	E	E ₁	L ₁	b	A ₁	∠
mm	max	1.3	0.22	1.8	2.8	3.9	0.45	0.7	0.2	9°
	min	0.9	0.09	1.5	2.5	3.6	0.25	0.5	-	
mil	max	51	8.7	71	110	154	18	28	8	
	min	35	3.5	59	98	142	10	20	-	

The recommended mounting pad size





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