DESCRIPTION

The MBR0530 uses the Schottky Barrier principle with a large area metal−to−silicon power diode. Ideally suited for low voltage, high frequency rectification or as free wheeling and polarity protection diodes in surface mount applications where compact size and weight are critical to the system. This package also provides an easy to work with alternative to leadless 34 package style. These state−of−the−art devices have the following features

The MBR0530 is available in SOD-123 Package

ORDERING INFORMATION

Package Type	Part Number
SOD-123	MBR0530
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

FEATURES

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL 94, V−0 @ 0.125 in
- Package Designed for Optimal Automated Board Assembly
- Available in SOD-123 Package

MECHANICAL CHARACTERISTICS

Polarity Designator: Cathode Band

Weight : 11.7mg(approximately)

Case: Epoxy, Molded

Finish: All External surfaces Corrosion resistant and Terminal Leads are readily Solderable.

Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

ABSOLUTE MAXIMUM RATINGS

V_{RRM}, Peak Repetitive Reverse Voltage	30V
V_{RWM}, Working Peak Reverse Voltage	30V
V_R, DC Blocking Voltage	30V
$I_{F(AV)}$, Average Rectified Forward Current (Rated V_R, T_L=100°C)	0.5A
I_{FSM}, Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60Hz)	5.5A
T_{STG}, Storage Temperature Range	-65°C~150°C
T_J, Operating Junction Temperature	-65°C~125°C
dv/dt, Voltage Rate of Change (Rated V_R)	1000 V/μs
ESD, Machine Model=C	> 400V
ESD, Human Body Model=3B	> 8000V

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance−Junction−to−Ambient[NOTE1]	$R_{\theta JA}$	206	°C/W
Thermal Resistance−Junction−to−Lead	$R_{\theta JL}$	150	°C/W

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Conditions	Value	Unit
Minimum Reverse Breakdown Voltage	$V_{(BR)R}$	I_R=130μA	30	V
Maximum Instantaneous Forward Voltage[NOTE2]	V_F	I_F=0.1Amps, T_J=25°C	0.375	V
		I_F=0.5Amps, T_J=25°C	0.45	
Maximum Instantaneous Reverse Current[NOTE2]	I_R	Rated DC Voltage, T_C=25°C	130	μA
		V_R=15 V, T_C=25°C	20	

NOTE1: 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.
NOTE2: Pulse Test: Pulse Width=300μs, Duty Cycle ≤ 2%.

TYPICAL CHARACTERISTICS

Figure 1. Typical Forward Voltage

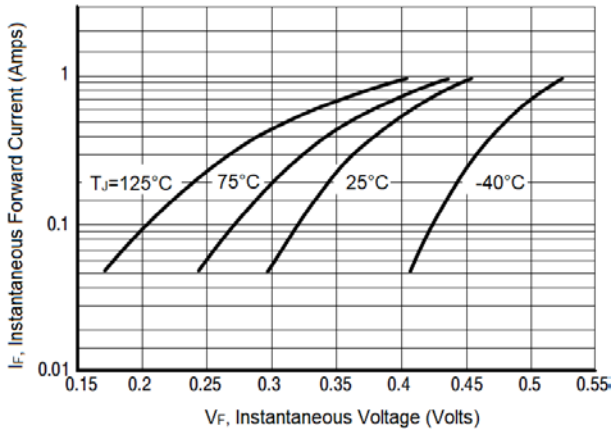


Figure 2. Typical Reverse Current

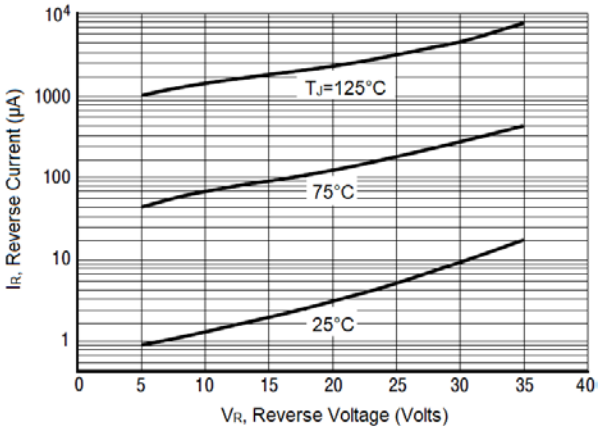


Figure 3. Typical Capacitance

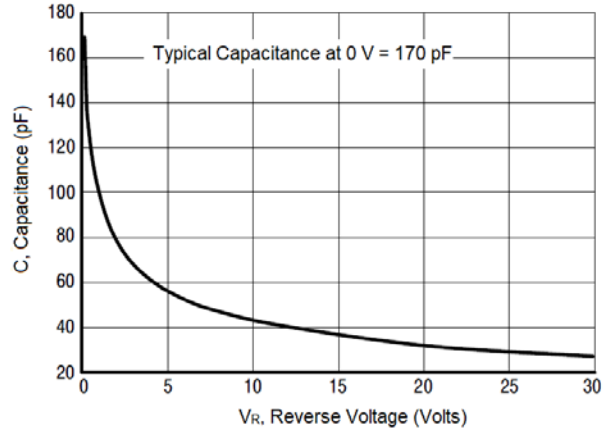


Figure 4. Current Derating (Lead)

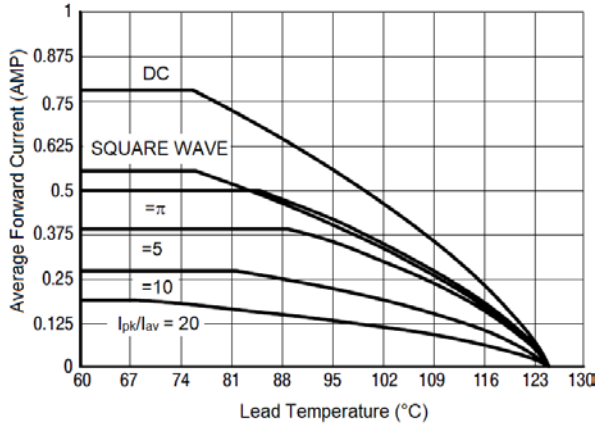
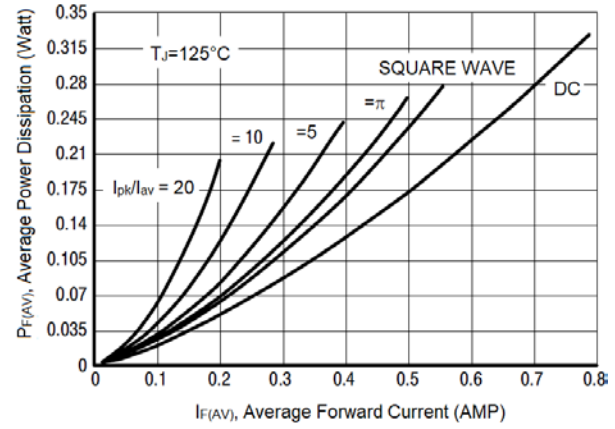
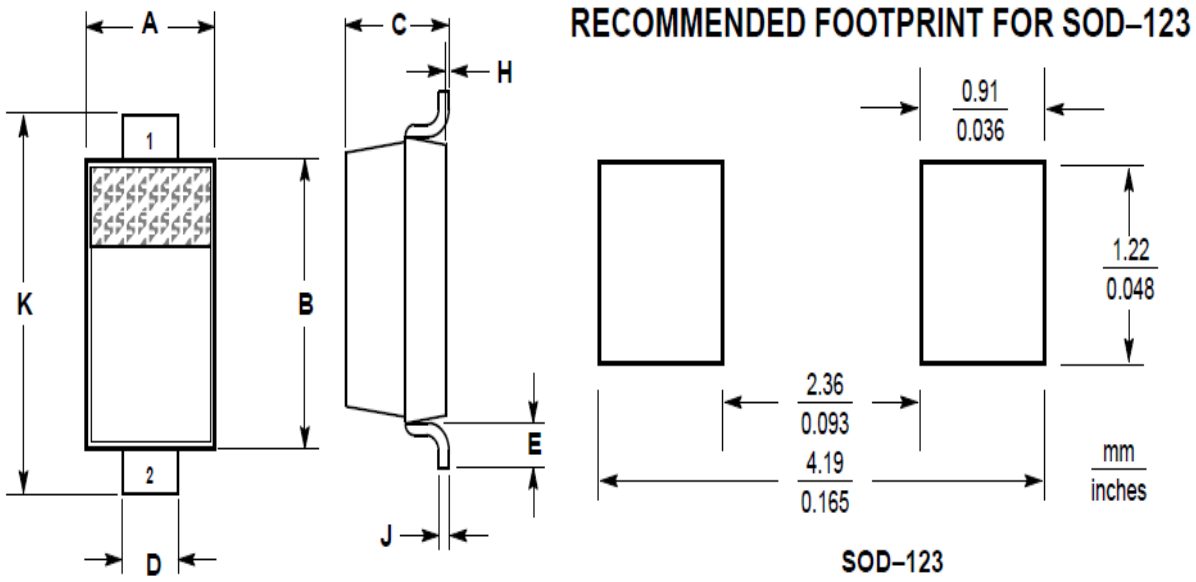


Figure 5. Power Dissipation



PACKAGE INFORMATION

Dimension in SOD-123 Package (Unit: mm)



Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	1.40	1.80	0.055	0.071
B	2.55	2.85	0.100	0.112
C	0.95	1.35	0.037	0.053
D	0.50	0.70	0.020	0.028
E	0.25	-	0.010	-
H	0.00	0.10	0.000	0.004
J	-	0.15	-	0.006
K	3.55	3.85	0.140	0.152

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