MBR1020VL

Surface Mount Schottky Power Rectifier

Features

- Ultra Thin Profile – Maximum Height of 1.08 mm
- High Surge Capacity
- UL Flammability 94V–0 Classification
- MSL 1
- Green Mold Compound
- These Devices are Pb–Free, Halogen Free Free and are RoHS Compliant

Specifications

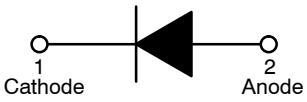
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	20	V
$I_{F(AV)}$	Average Rectified Forward Current	1.0	A
I_{FSM}	Non–Repetitive Peak Surge Current: Surge Applied at Rated Load Conditions, Half Wave, Single Phase, 60Hz	45	A
dv/dt	Voltage Rate of Change	1000	V/μs
T_J	Operating Junction Temperature Range	–55 to +125	°C
T_{STG}	Storage Temperature Range	–55 to +125	°C

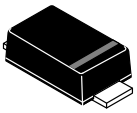
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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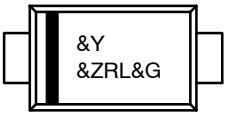


Schottky Power Rectifier



SOD–123F
CASE 425AD

MARKING DIAGRAM



Band Indicates Cathode

&Y	= Binary Calendar Year Coding Scheme
&Z	= Assembly Plant Code
RL	= Specific Device Code
&G	= Single Digit Weekly Data Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Characteristic	Value	Unit
$R_{\theta JA}$	Typical Thermal Resistance, Junction−to−Ambient (Note 1)	200	°C/W
Ψ_{JL}	Typical Thermal Characteristics, Junction−to−Lead (Note 2)	70	°C/W

1. Mounted with minimum recommended pad size, PC board FR4.
2. Mounted on a FR4 PCB, single−sided copper, with 10 cm * 10 cm copper pad area.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	Instantaneous Forward Voltage (Note 3)	I_F = 0.1 A	–	–	0.275	V
		I_F = 0.1 A, T_A = 85°C	–	–	0.205	
		I_F = 0.5 A	–	–	0.315	
		I_F = 0.5 A, T_A = 85°C	–	–	0.270	
		I_F = 1.0 A	–	–	0.340	
		I_F = 1.0 A, T_A = 85°C	–	–	0.300	
I_R	Instantaneous Reverse Current at Rated DC Voltage (Note 3)	T_A = 25°C	–	–	0.60	mA
		T_A = 85°C	–	–	15	
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	–	12.4	–	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

3. Pulse test: pulse width = 300 μs, duty cycle < 2%

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
MBR1020VL	RL	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

TYPICAL PERFORMANCE CHARACTERISTICS

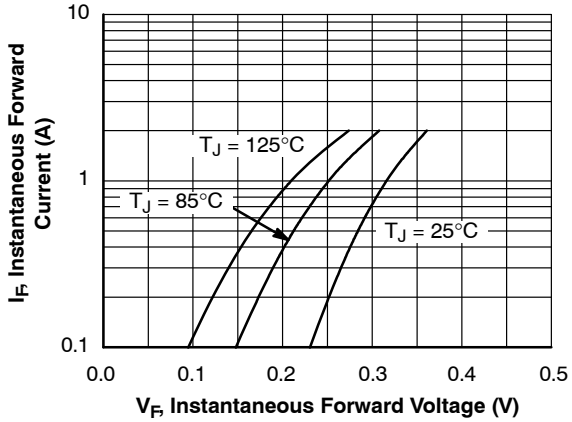


Figure 1. Typical Forward Characteristics

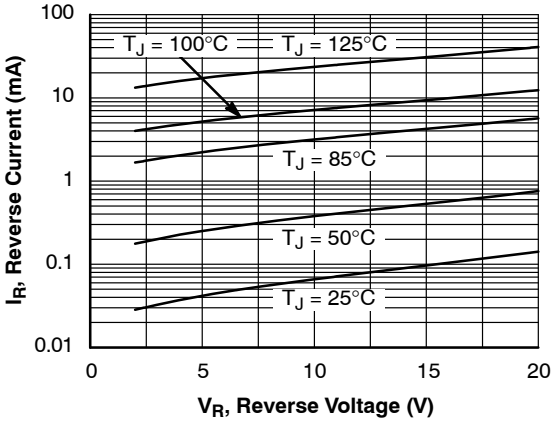


Figure 2. Typical Reverse Characteristics

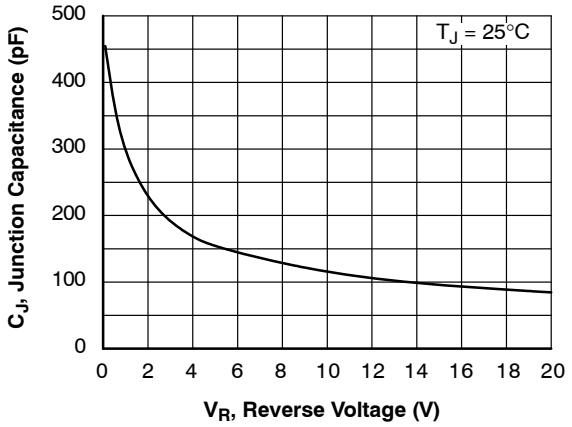
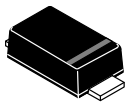


Figure 3. Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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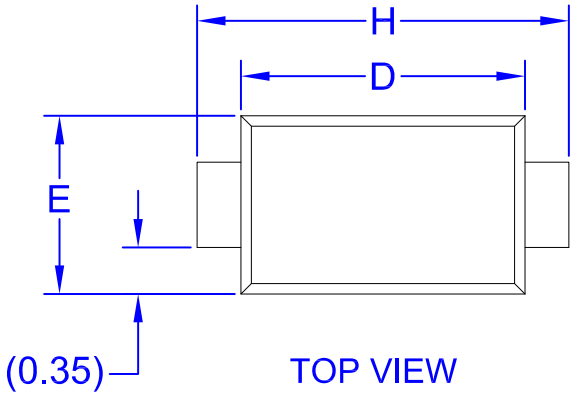


SCALE 4:1

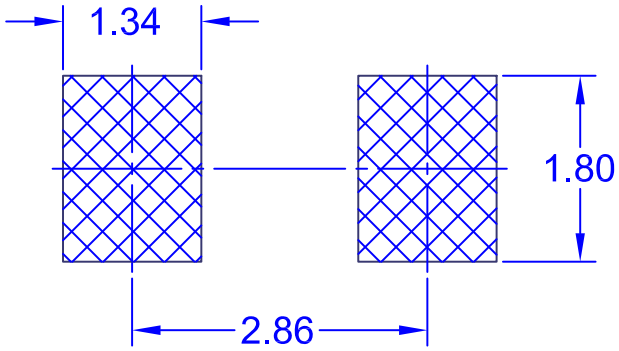
SOD−123FL
CASE 425AD
ISSUE A

DATE 04 AUG 2017

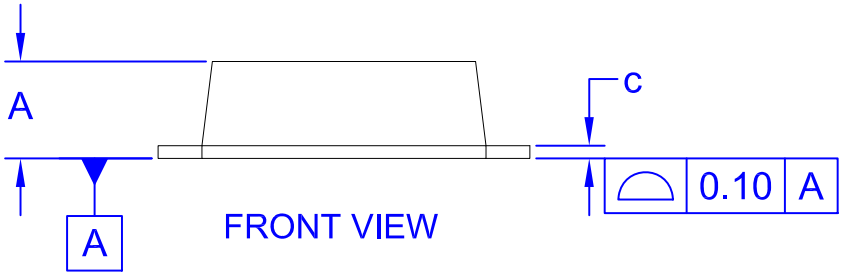
NOTES:
A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
B. ALL DIMENSIONS ARE IN MILLIMETERS
C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.



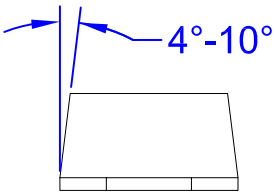
TOP VIEW



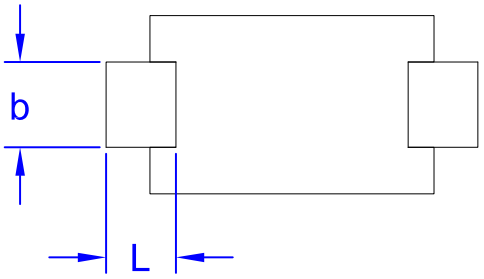
LAND PATTERN RECOMMENDATION



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.031	0.043	0.80	1.08
b	0.020	0.045	0.50	1.15
c	0.002	0.008	0.05	0.20
D	0.098	0.118	2.50	3.00
E	0.059	0.077	1.50	1.95
H	0.130	0.154	3.30	3.90
L	0.018	0.035	0.45	0.90

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