MBR130T1, MBR130T3

Surface Mount Schottky Power Rectifier

Plastic SOD−123 Package

This device 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.

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
- ESD Ratings: Machine Model, C;
  Human Body Model, 3
- Pb−Free Packages are Available

Mechanical Characteristics

- Reel Options: MBR130T1 = 3,000 per 7 in reel/8 mm tape
  MBR130T3 = 10,000 per 13 in reel/8 mm tape
- Device Marking: S3
- Polarity Designator: Cathode Band
- Weight: 11.7 mg (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

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SCHOTTKY BARRIER RECTIFIER 1.0 AMPERES 30 VOLTS

SOD−123
CASE 425
STYLE 1

MARKING DIAGRAM

S3 = Specific Device Code
M = Date Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MBR130T1	SOD−123	3000/Tape & Reel
MBR130T1G	SOD−123 (Pb−Free)	3000/Tape & Reel
MBR130T3	SOD−123	10,000/Tape & Reel
MBR130T3G	SOD−123 (Pb−Free)	10,000/Tape & Reel

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

Unit
V
A
A
°C
°C
V/μs

Unit
°C/W
°C/W

stress limit
ot implied,

Unit

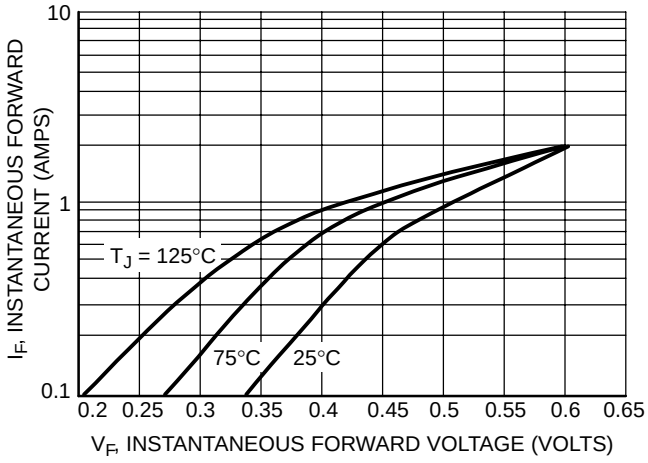


Figure 1. Maximum Forward Voltage

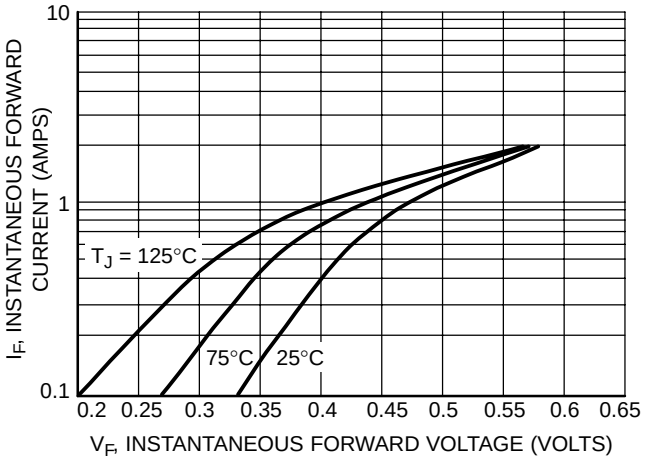


Figure 2. Typical Forward Voltage

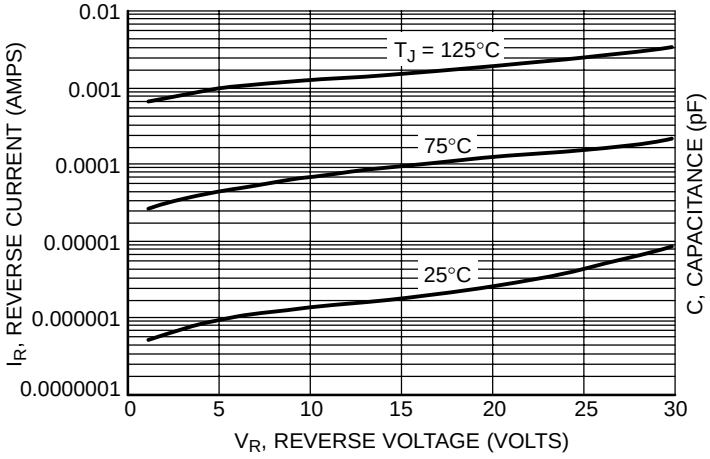


Figure 3. Typical Reverse Current

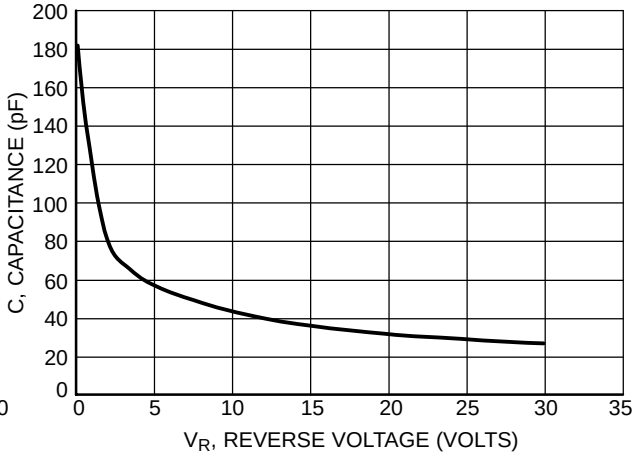


Figure 4. Typical Capacitance

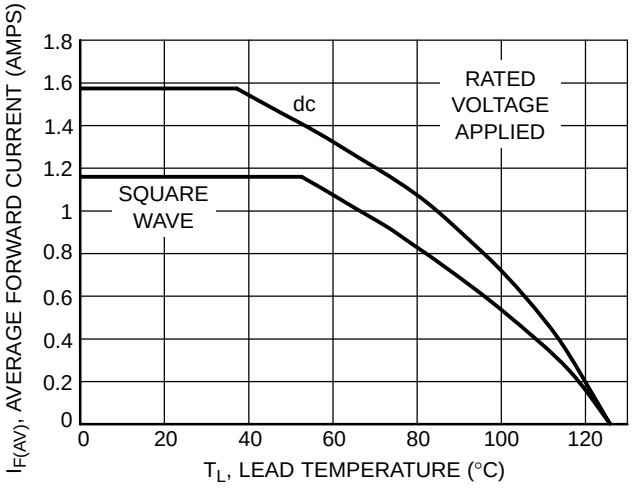


Figure 5. Current Derating, Lead, $R_{\theta JL}$ = 108°C/W

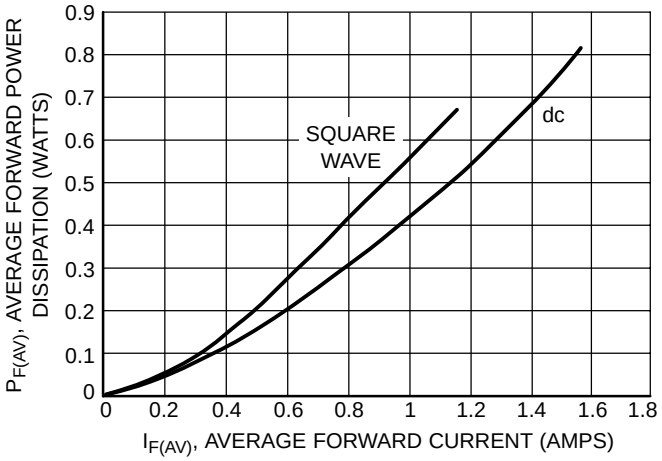
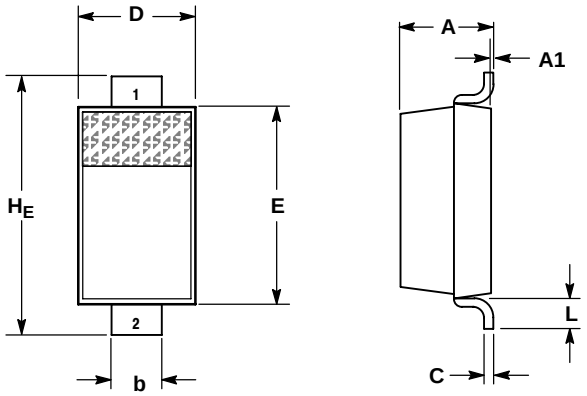


Figure 6. Forward Power Dissipation

PACKAGE DIMENSIONS

SOD−123
CASE 425−04
ISSUE E

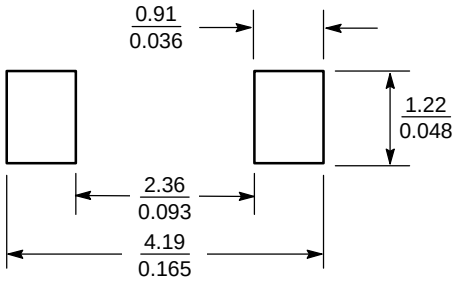


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
H_E	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---

STYLE 1:
PIN 1. CATHODE
2. ANODE

SOLDERING FOOTPRINT*



SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
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ON Semiconductor Website: http://onsemi.com

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For additional information, please contact your local Sales Representative.

MBR130T1/D