

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

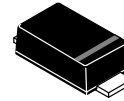
Features

- Guardring for Stress Protection
- Low Forward Voltage
- 125°C Operating Junction Temperature
- Epoxy Meets UL 94 V-0
- Package Designed for Optimal Automated Board Assembly
- ESD Ratings: Machine Model, C
Human Body Model, 3B
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free and are RoHS Compliant

Mechanical Characteristics

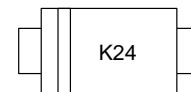
- Reel Options: MBR230LSFT1G = 3,000 per 7 in reel/8 mm tape
- Device Marking: L3N
- Polarity Designator: Cathode Band
- Weight: 11.7 mg (approximately)
- Case: Epoxy, Molded
- Lead Finish: 100% Matte Sn (Tin)
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL 1 Requirements

SCHOTTKY BARRIER RECTIFIER 2.0 AMPERES, 30 VOLTS



**SOD-123FL
CASE 498**

MARKING DIAGRAM



ORDERING INFORMATION

Device	Package	Shipping
MBR230LSFT1G	SOD-123FL (Pb-Free)	3000/Tape & Reel
NRVB230LSFT1G	SOD-123FL (Pb-Free)	3000/Tape & Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Average Rectified Forward Current (At Rated V_R , $T_L = 105^\circ\text{C}$)	I_O	2.0	A
Peak Repetitive Forward Current (At Rated V_R , Square Wave, 100 kHz, $T_L = 95^\circ\text{C}$)	I_{FRM}	4.0	A
Non-Repetitive Peak Surge Current (Non-Repetitive peak surge current, halfwave, single phase, 60 Hz)	I_{FSM}	40	A
Storage Temperature	T_{stg}	-55 to 150	$^\circ\text{C}$
Operating Junction Temperature	T_J	-55 to 125	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R , $T_J = 25^\circ\text{C}$)	dv/dt	10,000	$\text{V}/\mu\text{s}$

THERMAL CHARACTERISTICS

Thermal Resistance, Junction-to-Lead (Note 1)	R_{tjl}	26	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Lead (Note 2)	R_{tjl}	21	
Thermal Resistance, Junction-to-Ambient (Note 1)	R_{tja}	325	
Thermal Resistance, Junction-to-Ambient (Note 2)	R_{tja}	82	

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.

1. Mounted with minimum recommended pad size, PC Board FR4.
2. Mounted with 1 in. copper pad (Cu area 700 mm²).

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 3) ($I_F = 1.0\text{ A}$) ($I_F = 2.0\text{ A}$)	V_F	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	V
		0.38 0.43	0.30 0.37	
Maximum Instantaneous Reverse Current (Note 3) ($V_R = 30\text{ V}$)	I_R	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	mA
		1.0	25	

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 $\leq 250\ \mu\text{s}$, Duty Cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS

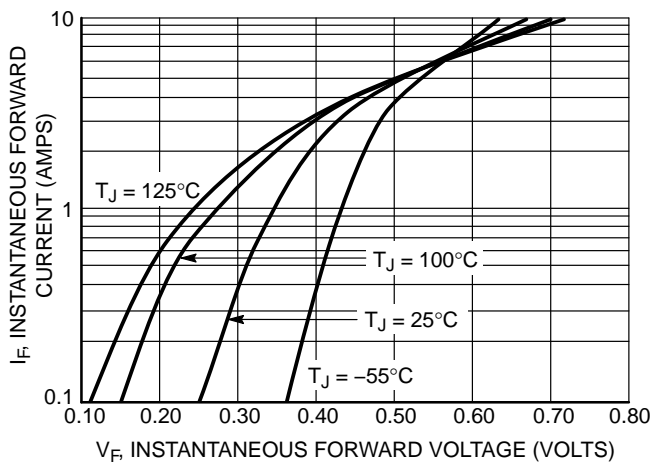


Figure 1. Typical Forward Voltage

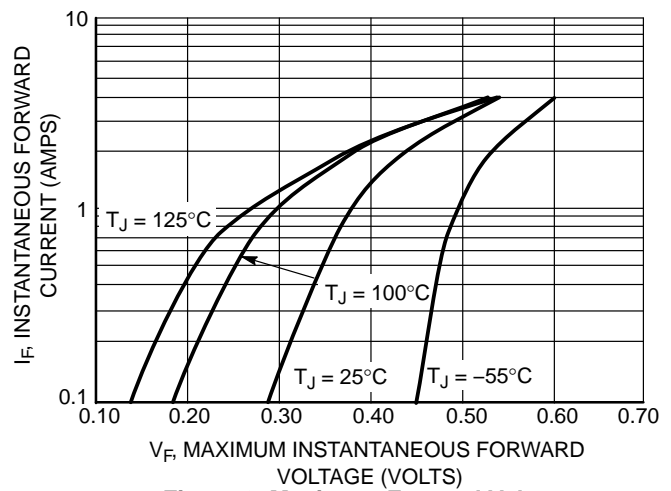


Figure 2. Maximum Forward Voltage

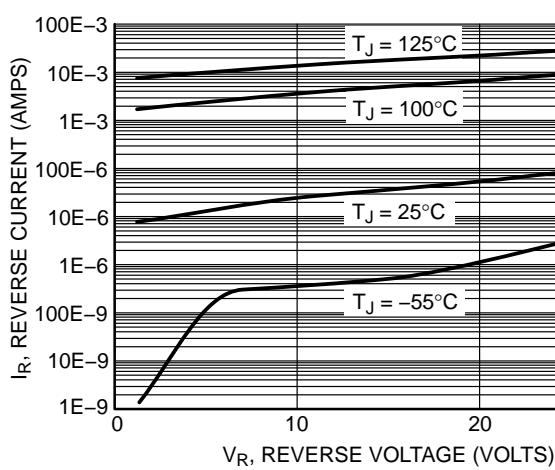


Figure 3. Typical Reverse Current

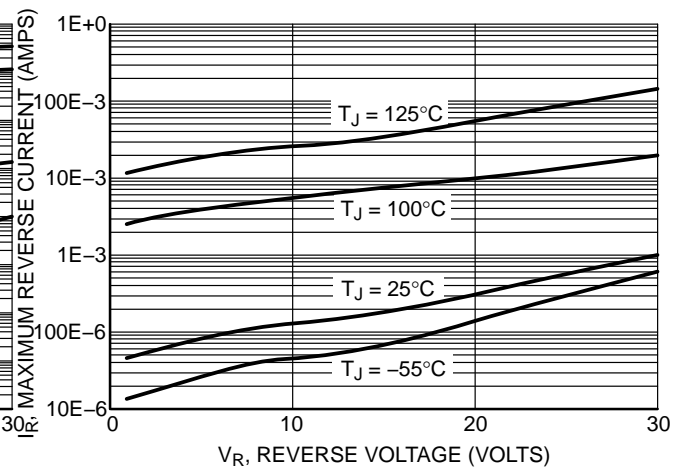


Figure 4. Maximum Reverse Current

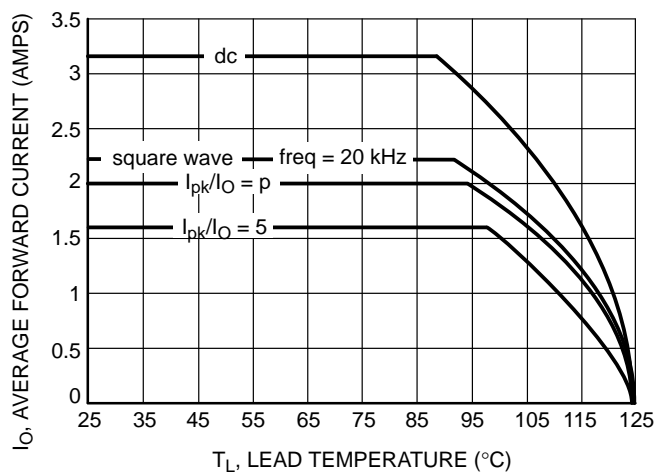


Figure 5. Current Derating

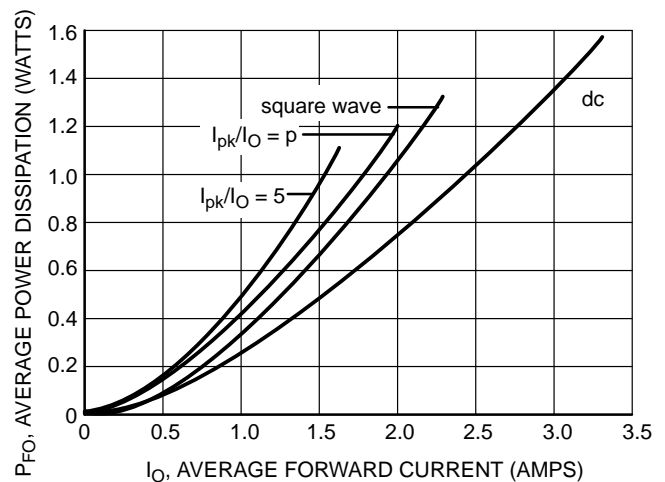


Figure 6. Forward Power Dissipation

TYPICAL CHARACTERISTICS

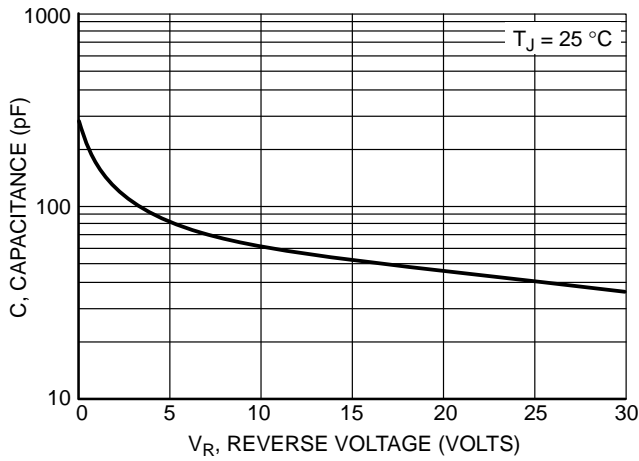


Figure 7. Capacitance

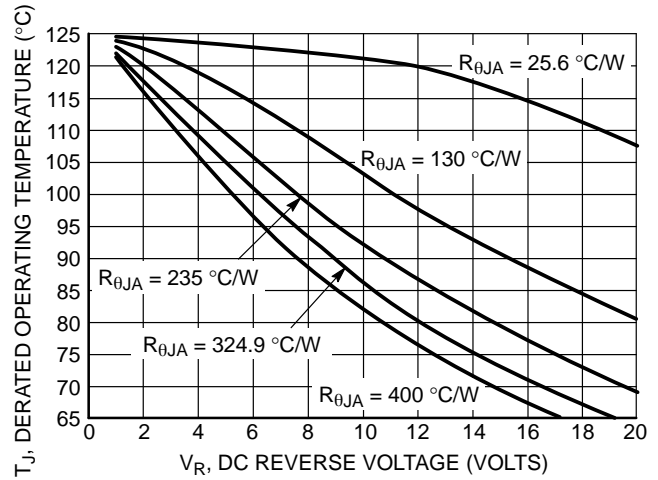


Figure 8. Typical Operating Temperature Derating

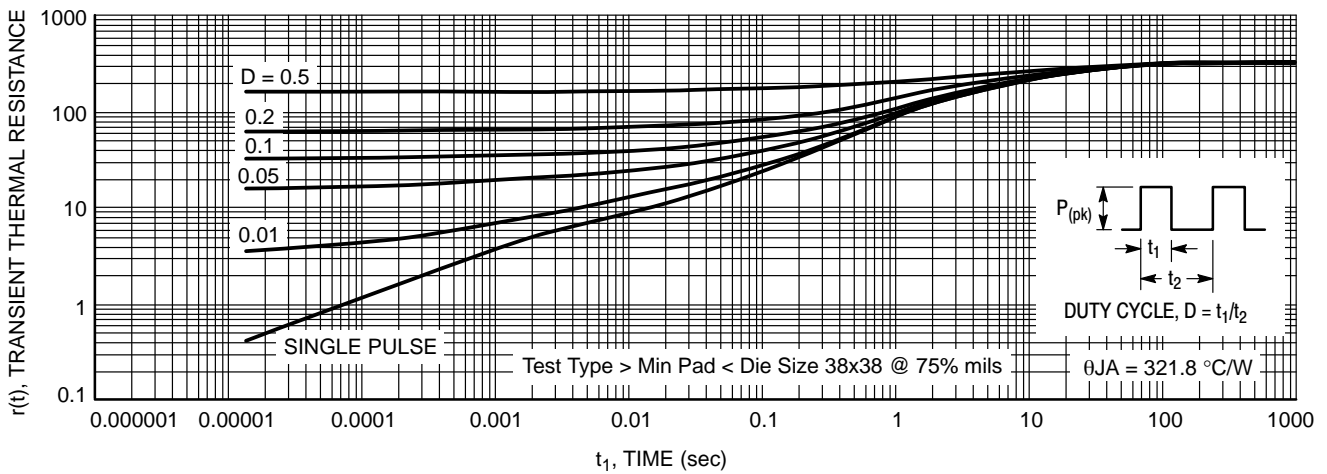
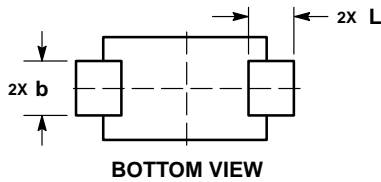
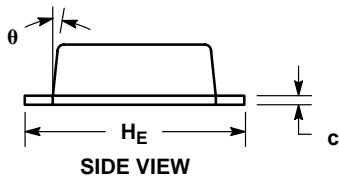
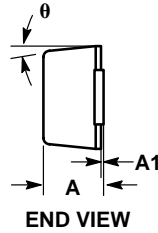
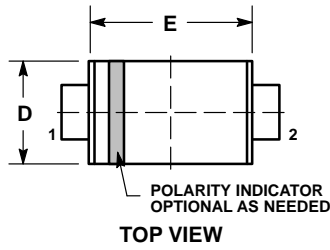


Figure 9. Thermal Response

PACKAGE DIMENSIONS

SOD-123LF
CASE 498
ISSUE D

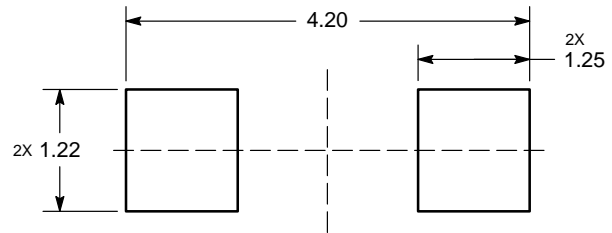


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH.
4. DIMENSIONS D AND J ARE TO BE MEASURED ON FLAT SECTION OF THE LEAD: BETWEEN 0.10 AND 0.25 MM FROM THE LEAD TIP.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	0.95	0.98	0.035	0.037	0.039
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.70	0.90	1.10	0.028	0.035	0.043
c	0.10	0.15	0.20	0.004	0.006	0.008
D	1.50	1.65	1.80	0.059	0.065	0.071
E	2.50	2.70	2.90	0.098	0.106	0.114
L	0.55	0.75	0.95	0.022	0.030	0.037
HE	3.40	3.60	3.80	0.134	0.142	0.150
θ	0°	-	8°	0°	-	8°

RECOMMENDED SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

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