

MBR130LSFT1

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 , $T_L = 117^\circ\text{C}$)	I_O	1.0	A
Peak Repetitive Forward Current (At Rated V_R , Square Wave, 100 kHz, $T_L = 110^\circ\text{C}$)	I_{FRM}	2.0	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	V/ μs

THERMAL CHARACTERISTICS

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

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, 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) ($I_F = 0.1\text{ A}$) ($I_F = 0.7\text{ A}$) ($I_F = 1.0\text{ A}$)	V_F	$T_J = 25^\circ\text{C}$	$T_J = 100^\circ\text{C}$	V
		0.29	0.18	
		0.36	0.27	
		0.38	0.30	
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	

3. Pulse Test: Pulse Width $\leq 250\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$.

TYPICAL CHARACTERISTICS

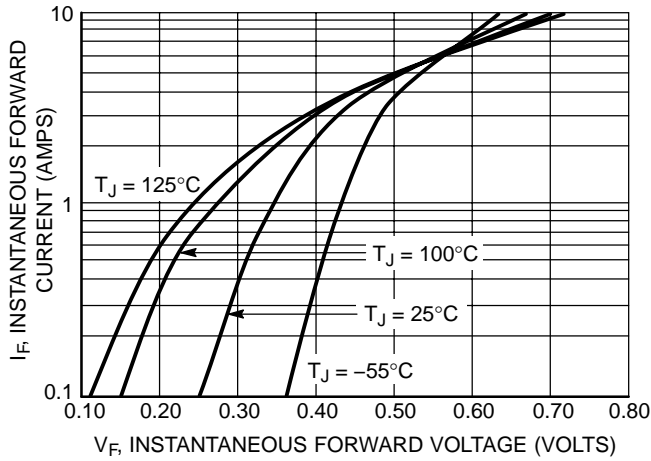


Figure 1. Typical Forward Voltage

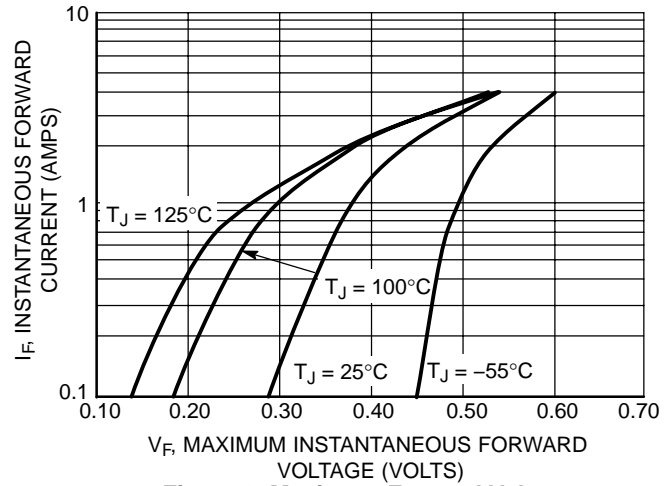


Figure 2. Maximum Forward Voltage

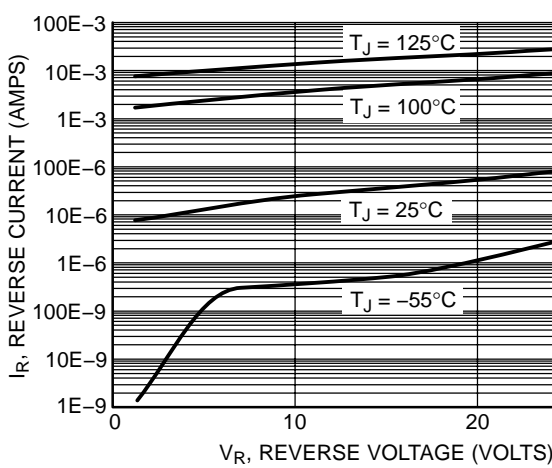


Figure 3. Typical Reverse Current

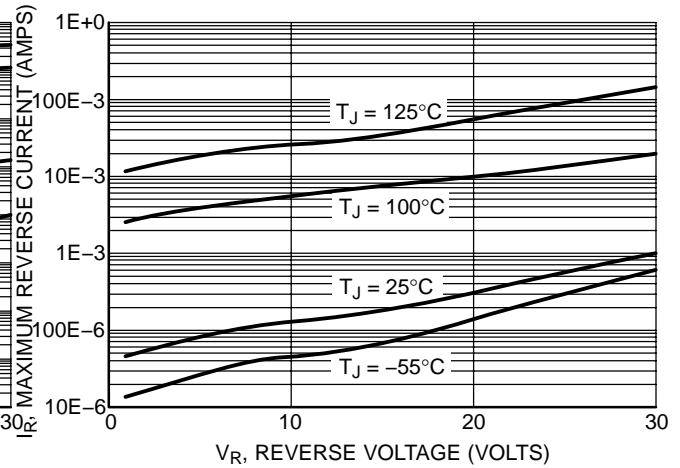


Figure 4. Maximum Reverse Current

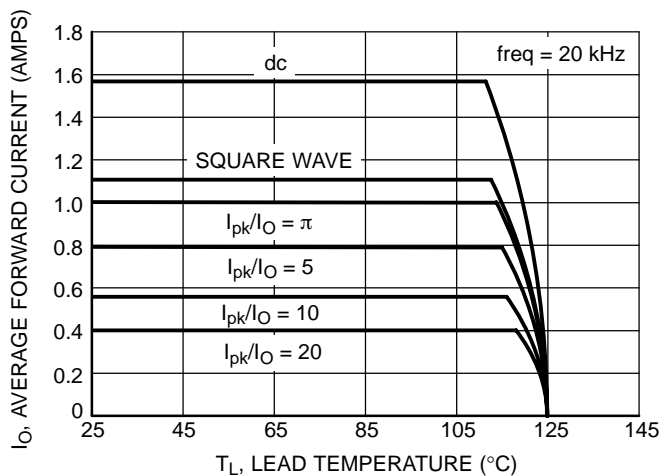


Figure 5. Current Derating

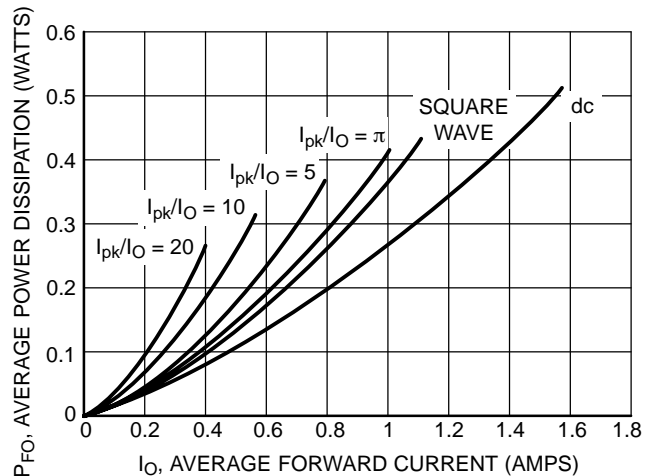


Figure 6. Forward Power Dissipation

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TYPICAL CHARACTERISTICS

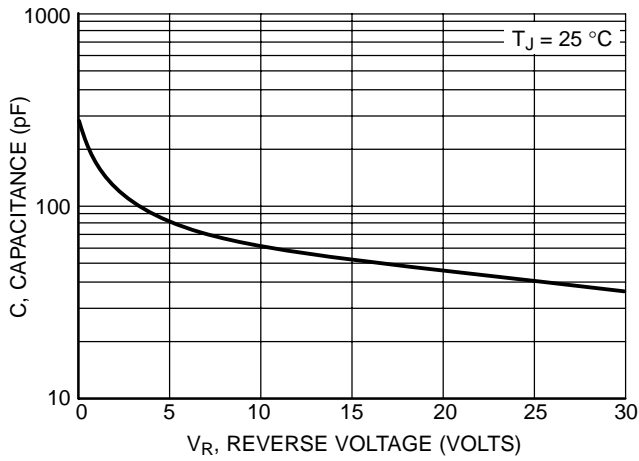


Figure 7. Capacitance

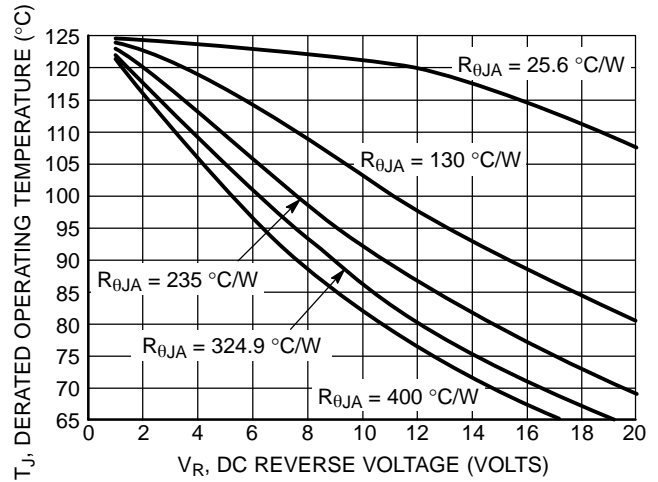


Figure 8. Typical Operating Temperature Derating

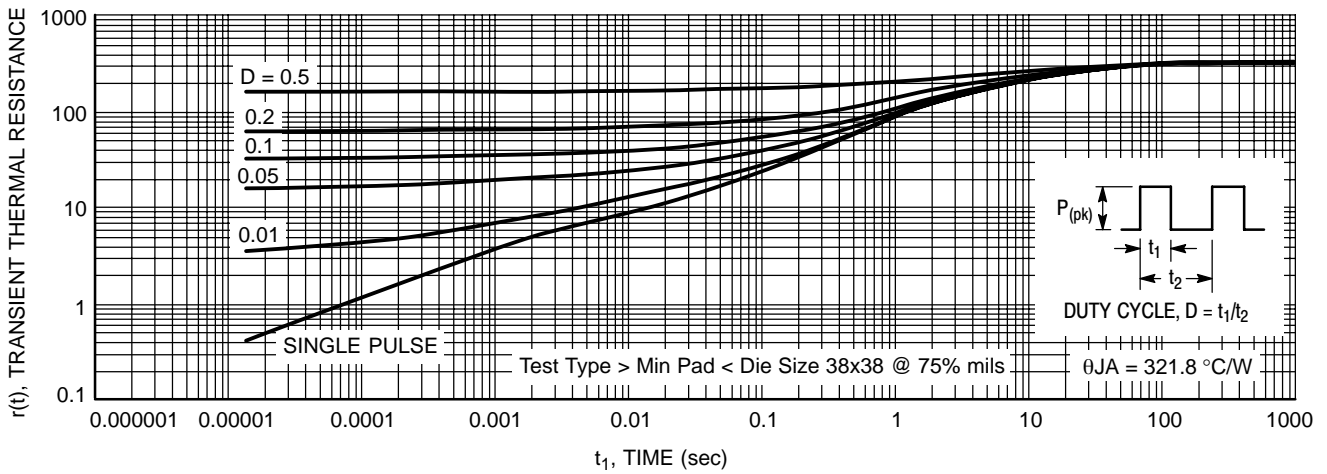
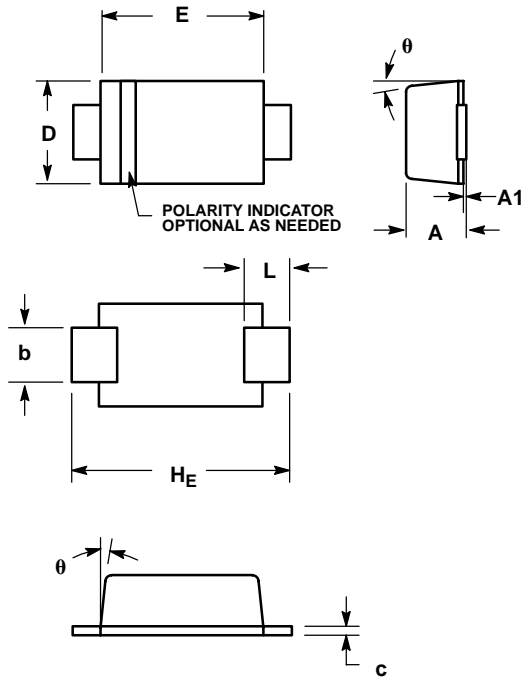


Figure 9. Thermal Response

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PACKAGE DIMENSIONS

SOD-123LF
CASE 498-01
ISSUE A

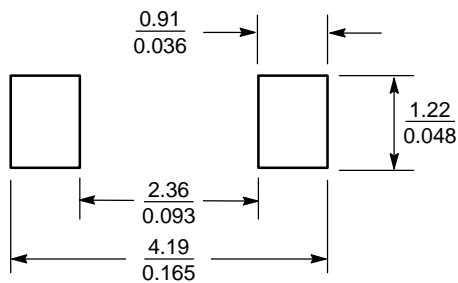


NOTES:

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	1.00	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
theta	0°	—	8°	0°	—	8°


SOLDERING FOOTPRINT*



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

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

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