



DESCRIPTION

The MBR0520F~MBR0540F are available in SOD-123FL Package.

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low power loss, high efficiency
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- Guarding for over voltage protection
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Available in SOD-123FL Package

ORDERING INFORMATION

Package Type	Part Number
SOD-123FL	MBR0520F
	MBR0530F
	MBR0540F
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

MECHANICAL DATA

Case: SOD-123FL/MINI SMA

molded plastic over sky die

Terminals: Tin Plated, solderable per

MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 0.0155 g

Handling precaution: None

PIN DESCRIPTION





ELECTRICAL CHARACTERISTIC

at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR0520F	MBR0530F	MBR0540F	Unit
Maximum & Thermal Characteristics Ratings					
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	V
Maximum RMS Voltage	V_{RMS}	14	21	28	V
Maximum DC Blocking Voltage	V_{DC}	20	30	40	V
Maximum Average Forward Rectified Current at $T_A = 75^\circ\text{C}$	$I_{F(AV)}$	0.5			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30			A
Typical Thermal Resistance ^{NOTE1}	$R\theta_{JA}$	110			°C/W
	$R\theta_{JC}$	40			
Operating Junction Temperature Range	T_J	-55 ~ +125		-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-65 ~ +175			°C
Electrical Characteristics Ratings					
Maximum Instantaneous Forward Voltage at ($I_F = 0.1\text{A}$, $T_J = 25^\circ\text{C}$) ($I_F = 0.5\text{A}$, $T_J = 25^\circ\text{C}$)	V_F	0.3	0.375	-	V
		0.385	0.450	0.55	
Maximum DC Reverse Current At Rated DC Blocking Voltage $T_A = 25^\circ\text{C}$ $T_J = 100^\circ\text{C}$	I_R	0.25	0.130	0.04	mA
		8	10	10	
Typical Junction Capacitance at 4.0V, 1MHz	C_J	160			PF

NOTE1:8.0mm² (.013mm thick) land areas



TYPICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Figure 1. Forward Current Derating Curve

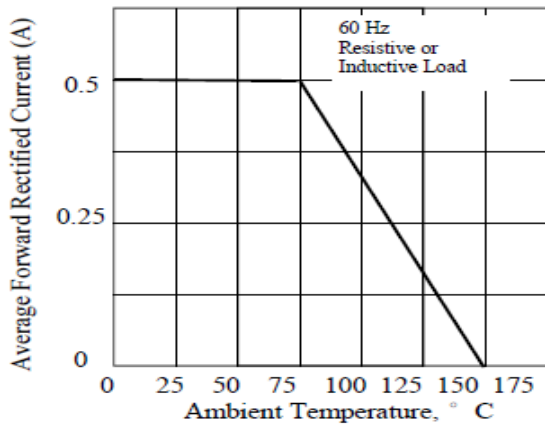


Figure 3. Typical Instantaneous Forward Characteristics

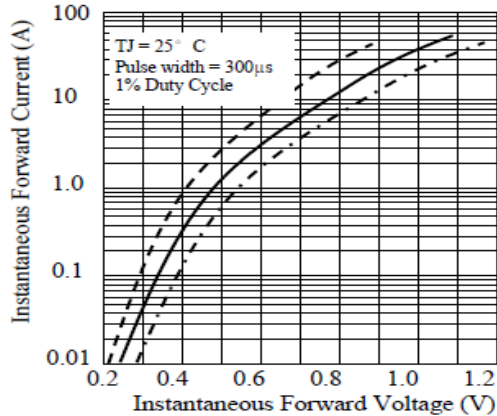


Figure 5. Typical Transient Thermal Impedance

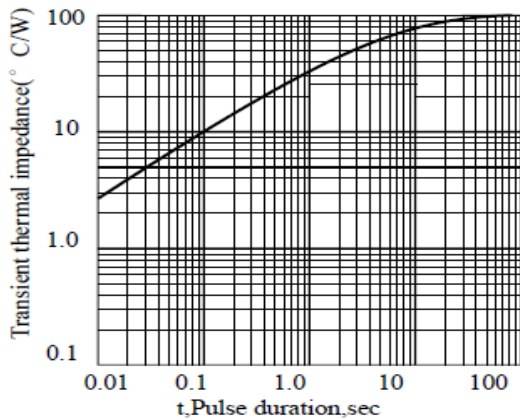


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

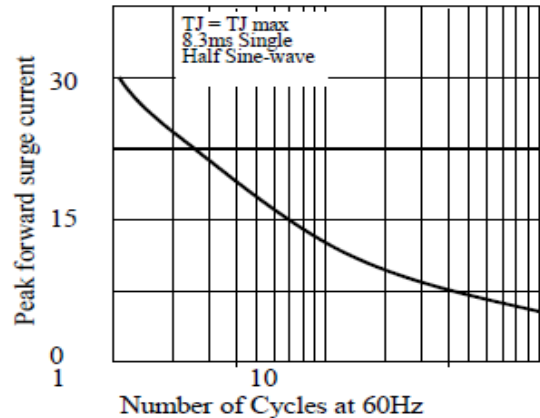


Figure 4. Typical Reverse Characteristics

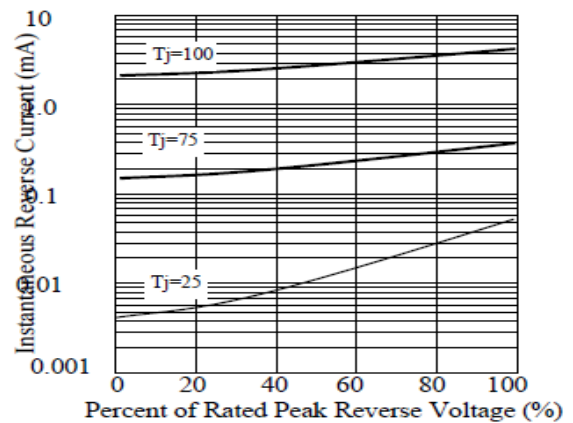
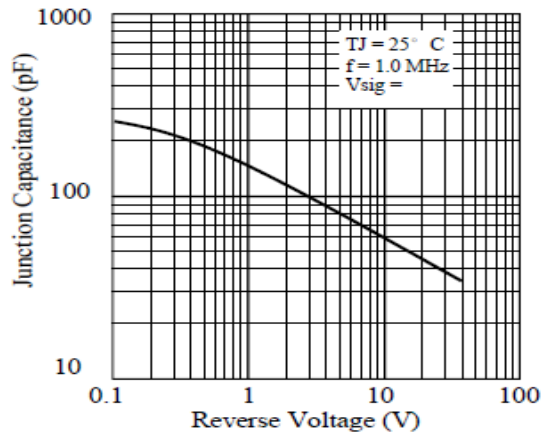


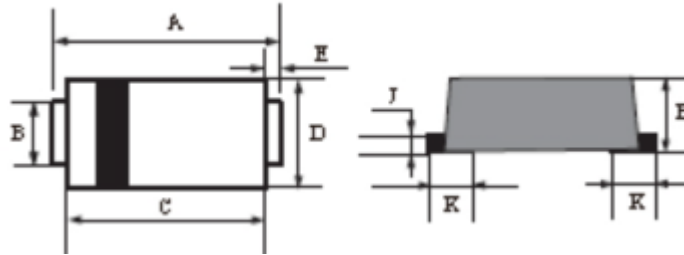
Figure 6. Typical Junction Capacitance





PACKAGE INFORMATION

Dimension in SOD-123FL Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.5	3.9	0.138	0.159
B	0.75	0.95	0.029	0.037
C	2.6	3.0	0.103	0.119
D	1.6	2.0	0.063	0.079
E	0.45TYP		0.018TYP	
H	0.9	1.2	0.036	0.047
J	0.12	0.22	0.005	0.009
K	0.8TYP		0.032TYP	

Suggested solder pad layout



Dimensions in inches and (millimeters)

Package	A	B	C
SOD-123FL	0.044(1.10)	0.040(1.00)	0.079(2.00)



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