



## DESCRIPTION

The MBR120F~MBR1200F are available in SOD-123FL Package.

## ORDERING INFORMATION

Package Type	Part Number
SOD-123FL	MBR120F
	MBR130F
	MBR140F
	MBR145F
	MBR150F
	MBR160F
	MBR180F
	MBR1100F
	MBR1150F
	MBR1200F
Note	SPQ: 3,000pcs/ Reel
AiT provides all RoHS Compliant Products	

## 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
- Guard Ring for over voltage protection
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Available in SOD-123FL Package

## MECHANICAL DATA

Case: SOD123-FL/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





## ABSOLUTE MAXIMUM RATINGS

at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR 120F	MBR 130F	MBR 140F	MBR 145F	MBR 150F	MBR 160F	MBR 180F	MBR 1100F	MBR 1150F	MBR 1200F	Unit
<b>Maximum &amp; Thermal Characteristics Ratings</b>												
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	20	30	40	45	50	60	80	100	150	200	V
Maximum RMS Voltage	V <sub>RMS</sub>	14	21	28	31.5	35	42	56	70	105	140	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	20	30	40	45	50	60	80	100	150	200	V
Maximum Average Forward Rectified Current at T <sub>A</sub> = 75°C	I <sub>F(AV)</sub>	1.0										A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	30										A
Typical Thermal Resistance <sup>NOTE1</sup>	R <sub>θJA</sub>	110										°C/W
	R <sub>θJC</sub>	40										
Operating Junction Temperature Range	T <sub>J</sub>	-55 ~ +150										°C
Storage Temperature Range	T <sub>STG</sub>	-65 ~ +175										°C
<b>Electrical Characteristics Ratings</b>												
Maximum instantaneous forward voltage at(I <sub>F</sub> = 0.1A, T <sub>J</sub> = 25°C) (I <sub>F</sub> = 0.7A, T <sub>J</sub> = 25°C) (I <sub>F</sub> = 1.0A, T <sub>J</sub> = 25°C)	V <sub>F</sub>	-	0.35	-	-	-	0.85	0.9	0.92			V
		-	0.45	-	-	-						
		0.5	0.50	0.55	0.7							
Maximum DC reverse current at rated DC blocking voltage T <sub>A</sub> = 25°C T <sub>J</sub> = 125°C	I <sub>R</sub>	0.5										mA
		10										
Typical Junction Capacitance at 4.0V, 1MHz	C <sub>J</sub>	160										pF

NOTE1: 8.0mm<sup>2</sup> (.013mm thick) land area



**TYPICAL CHARACTERISTICS**

T<sub>A</sub> = 25°C unless otherwise noted

Figure 1. Forward Current Derating Curve

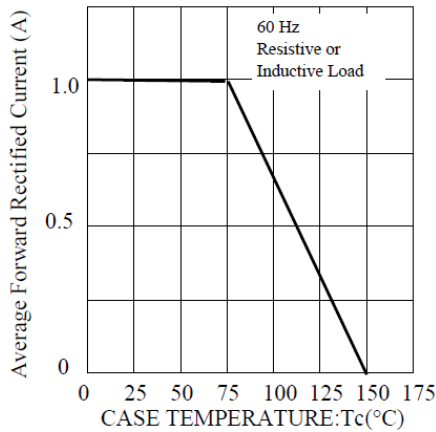


Figure 3. Typical Instantaneous Forward Characteristics

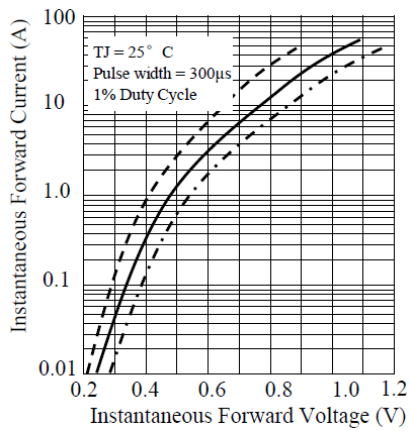


Figure 5. Typical Transient Thermal Impedance

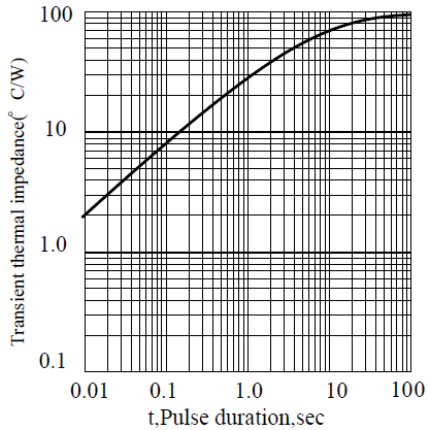


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

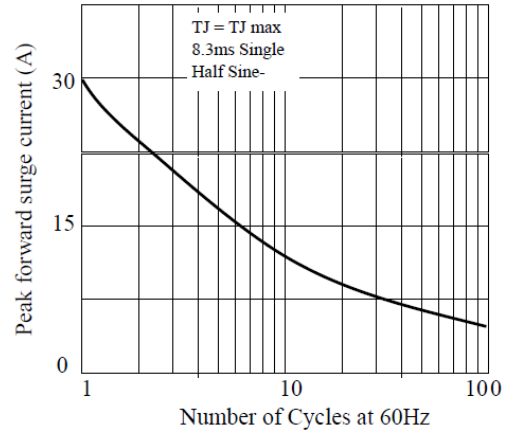


Figure 4. Typical Reverse Characteristics

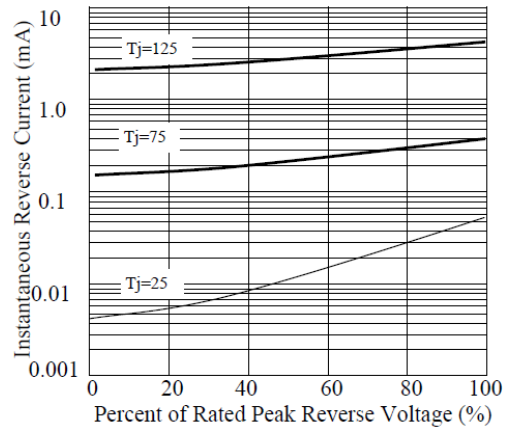
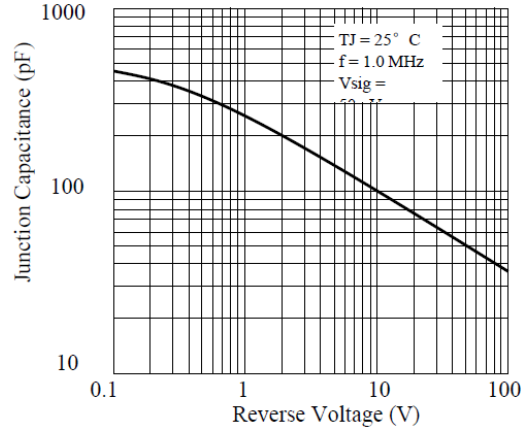


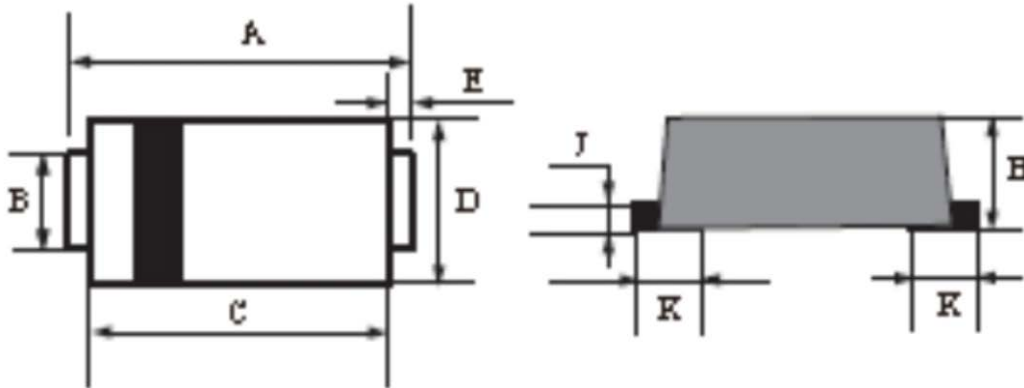
Figure 6. Typical Junction Capacitance





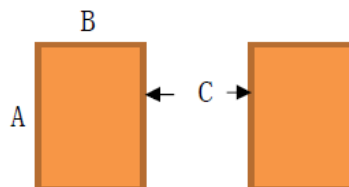
**PACKAGE INFORMATION**

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



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	3.50	3.90	0.138	0.159
B	0.75	0.95	0.029	0.037
C	2.60	3.00	0.103	0.119
D	1.60	2.00	0.063	0.079
E	0.45Typ.		0.018Typ.	
H	0.90	1.20	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)



## IMPORTANT NOTICE

AiT Components (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Components' integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Components assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.