DESCRIPTION

The MBR120E~MBR1200E is available in SOD-323HE 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-323HE Package

ORDERING INFORMATION

Package Type	Part Number
SOD-323HE	MBR120E
	MBR130E
	MBR140E
	MBR150E
	MBR160E
	MBR180E
	MBR1100E
	MBR1150E
	MBR1200E
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

MECHANICAL DATA

Case: SOD-323HE
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: 0.011 g
Handling precaution: None

PIN DESCRIPTION

MAXIMUM & THERMAL CHARACTERISTICS RATINGS

at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR 120E	MBR 130E	MBR 140E	MBR 150E	MBR 160E	MBR 180E	MBR 1100E	MBR 1150E	MBR 1200E	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	20	30	40	50	60	80	100	150	200	V
Maximum RMS Voltage	V_{RMS}	14	21	28	35	42	56	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	20	30	40	50	60	80	100	150	200	V
Maximum Average Forward Rectified Current at T_C = 75°C	$I_{F(AV)}$	1.0									A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	22									A
Typical Thermal Resistance[NOTE1]	$R_{\theta JA}$ $R_{\theta JL}$	220 50									°C/W
Operating Junction Temperature Range	T_J	-55 ~ +150									°C
Storage Temperature Range	T_{STG}	-65 ~ +150									°C

ELECTRICAL CHARACTERISTICS RATINGS

at 25°C ambient temperature unless otherwise specified.

Parameter		Symbol	MBR 120E	MBR 130E	MBR 140E	MBR 150E	MBR 160E	MBR 180E	MBR 1100E	MBR 1150E	MBR 1200E	Unit
Maximum Instantaneous Forward Voltage at (I_F=0.7 A, T_J=25°C) (I_F=1.0 A, T_J=25°C)		V_F		0.48 0.55		0.70		0.85		0.90	0.92	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_A=25°C T_J=125°C	I_R	0.02 10									mA
Typical junction capacitance at 4.0V, 1MHz		C_J	160									pF

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

TYPICAL CHARACTERISTICS

Figure 1. Forward Current Derating Curve

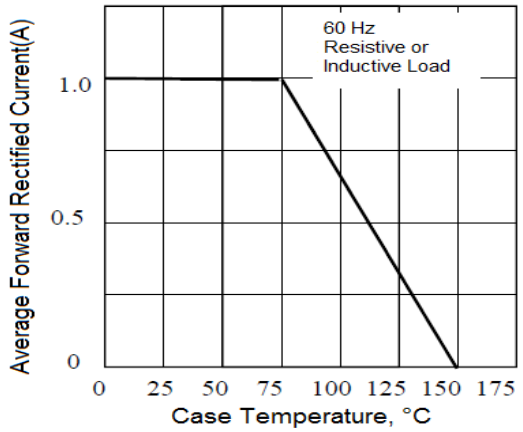


Figure 2. Maximum Non-repetitive Peak Forward Surge Current

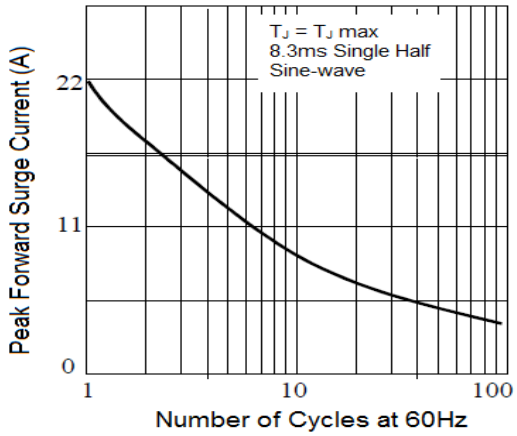


Figure 3. Typical Instantaneous Forward Characteristics

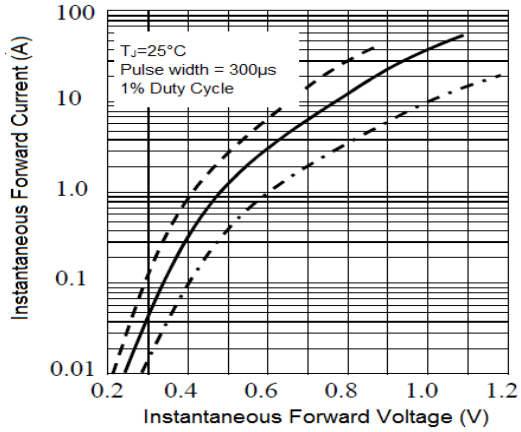


Figure 4. Typical Reverse Characteristics

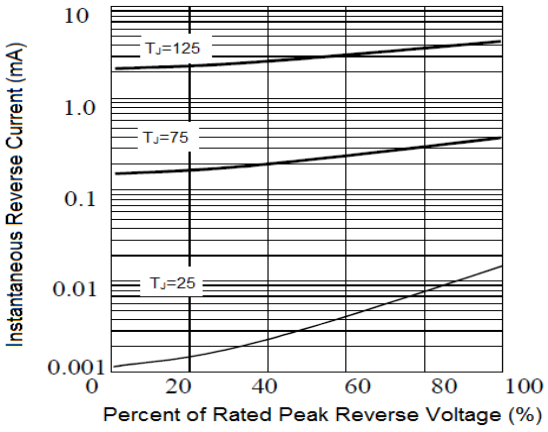


Figure 5. Typical Transient Thermal Impedance

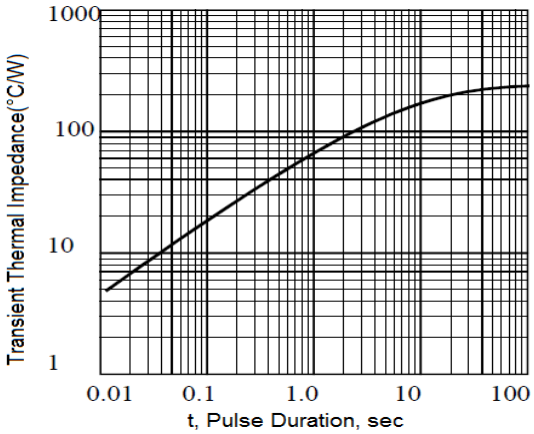
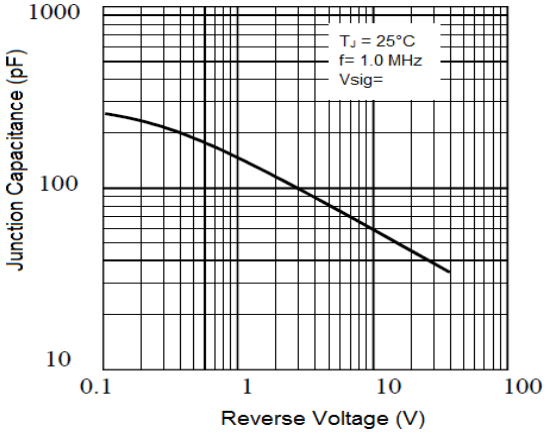
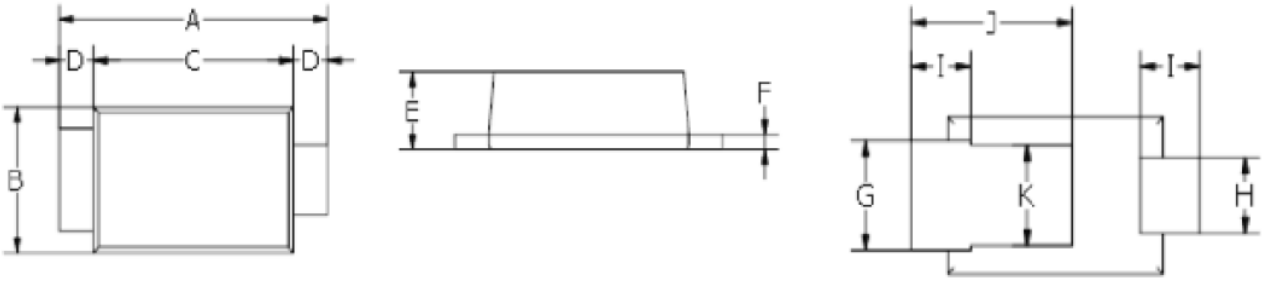


Figure 6. Typical Junction Capacitance



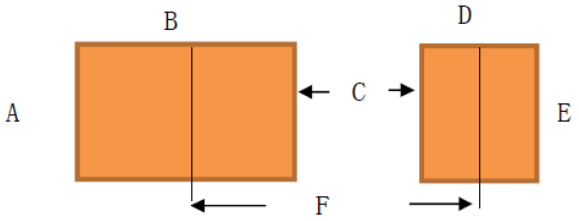
PACKAGE INFORMATION

Dimension in SOD-323HE (Unit: mm)



DIM	MILLIMETERS		INCHES	
	Min	Max	Min	Max
A	2.300	2.700	0.091	0.106
B	1.200	1.400	0.047	0.055
C	1.750	1.950	0.069	0.077
D	0.300 TYP		0.012 TYP	
E	0.550	0.750	0.022	0.030
F	0.100	0.200	0.004	0.008
G	0.650	0.950	0.026	0.037
H	0.500	0.700	0.020	0.028
I	0.400	0.800	0.016	0.031
J	1.150	1.550	0.045	0.061
K	0.800 TYP		0.032TYP	

Suggested solder pad layout



Dimensions in inches and (millimeters)

Package	A	B	C	D	E	F
SOD-323HE	0.044(1.10)	0.079(2.00)	0.019(0.5)	0.032(0.8)	0.040(1.00)	0.075(1.90)

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