

# Schottky Barrier Rectifier

## MBRXF120 - MBRXF140

### Features

- Metal silicon junction, majority carrier conduction
- High forward surge current capability
- Low forward voltage drop
- High temperature soldering guaranteed: 260°C @ 10s
- Robust guarding for over voltage protection
- RoHS compliant with Halogen-free



### Mechanical Data

- Case: SOD-123F molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Matte tin plated leads; solderable per J-STD-002 and JESD22-B102
- Polarity: Color band denotes cathode end

### Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	MBRXF120	MBRXF130	MBRXF140	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	30	40	V
RMS Reverse Voltage	V <sub>RMS</sub>	14	21	28	V
DC Blocking Voltage	V <sub>DC</sub>	20	30	40	V
Maximum Average Forward Output Current	I <sub>F_AV</sub>	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I <sub>FSM</sub>	30			A

### Thermal Characteristics

Parameter	Symbol	MBRXF120	MBRXF130	MBRXF140	Unit
Typical Thermal Resistance *1	R <sub>θJA</sub>	85			°C/W
	R <sub>θJC</sub>	23			
	R <sub>θJL</sub>	15			
Operating Junction Temperature Range	T <sub>J</sub>	-55 ~ +125			°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150			°C

Note \*1: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1 mm copper pad area

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### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions		Typ.	Max.	Unit
Instantaneous Forward Voltage <sup>*1</sup>	$V_F$	$I_F = 1.0\text{A}$	@ $T_A = 25^\circ\text{C}$	-	0.55	V
Reverse Current <sup>*2</sup>	$I_R$	Rated $V_R$	@ $T_J = 25^\circ\text{C}$	-	100	$\mu\text{A}$
			@ $T_J = 100^\circ\text{C}$	-	10	mA

Note<sup>\*1</sup>: Pulse test: 300us pulse width, 1 % duty cycle

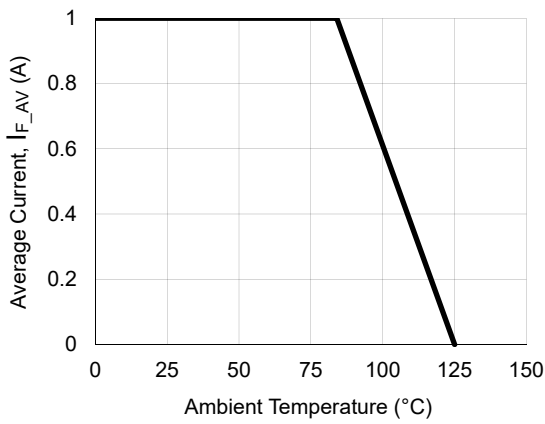
Note<sup>\*2</sup>: Pulse test: Pulse width 40ms

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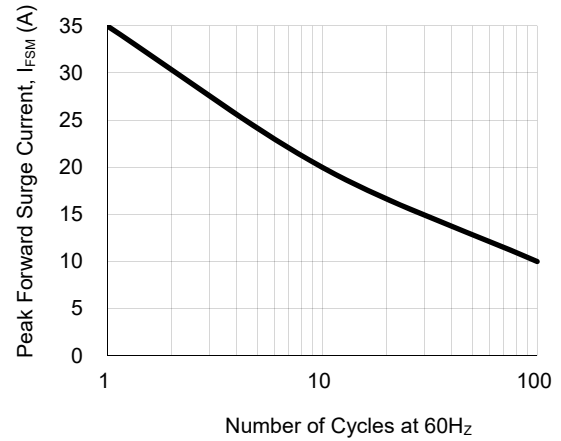
# MBRXF120 - MBRXF140

## Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise noted)

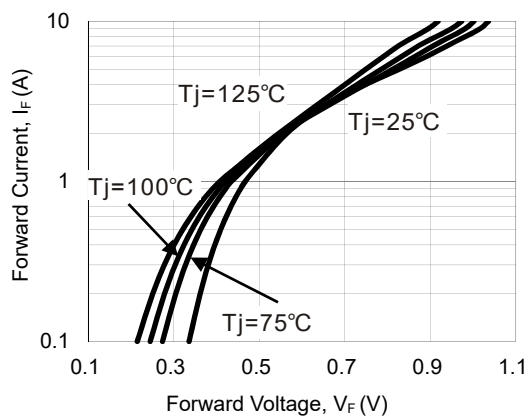
**Fig.1 Forward Current Derating Curve**



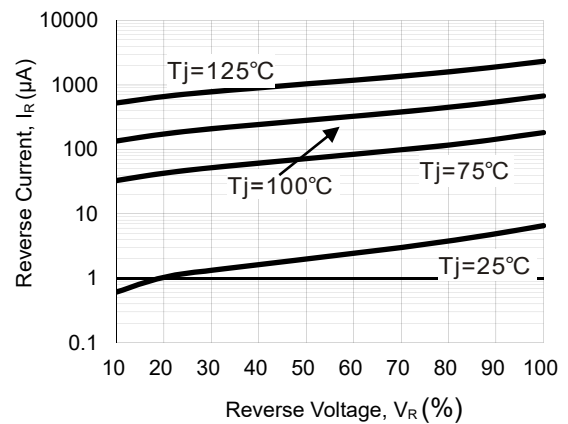
**Fig.2 Surge Current Derating Curve**



**Fig.3 Typical Forward Voltage Characteristics**



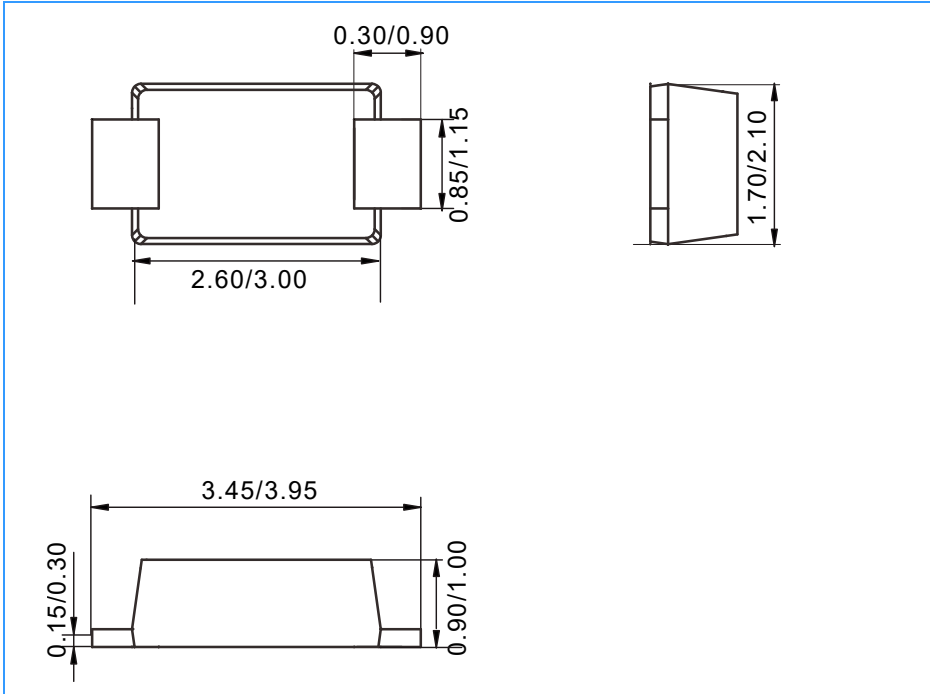
**Fig.4 Typical Reverse Characteristics**



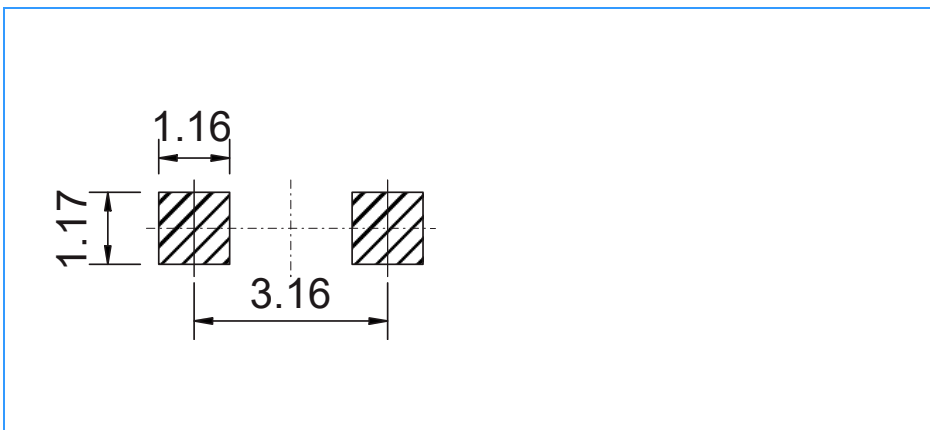
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### Package Outline Dimensions (Unit: mm)



### Mounting Pad Layout (Unit: mm)



### Ordering Information

Part Number	Marking	Package	Shipping Quantity
MBRXF120	F12	SOD-123F	10000 / Tape & Reel
MBRXF130	F13	SOD-123F	10000 / Tape & Reel
MBRXF140	F14	SOD-123F	10000 / Tape & Reel