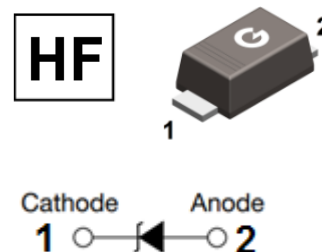


Schottky Barrier Rectifier

MBRX120 - MBRX140

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-123FL 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_A = 25°C unless otherwise specified)

Parameter	Symbol	MBRX120	MBRX130	MBRX140	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	20	30	40	V
RMS Reverse Voltage	V _{RMS}	14	21	28	V
DC Blocking Voltage	V _{DC}	20	30	40	V
Average Forward Output Current	I _{F_AV}	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine wave	I _{FSM}	30			A

Thermal Characteristics

Parameter	Symbol	MBRX120	MBRX130	MBRX140	Unit
Typical Thermal Resistance *1	R _{θJA}	85			°C/W
	R _{θJC}	23			
	R _{θJL}	15			
Operating Junction Temperature Range	T _J	-55 ~ +125			°C
Storage Temperature Range	T _{STG}	-55 ~ +150			°C

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

Schottky Barrier Rectifier

MBRX120 - MBRX140

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

Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$, MBRX120		20	-	-	V
		$I_R = 100\mu\text{A}$, MBRX130		30	-	-	V
		$I_R = 100\mu\text{A}$, MBRX140		40	-	-	V
Instantaneous Forward Voltage* ¹	V_F	$I_F = 1.0\text{A}$	@ $T_A = 25^\circ\text{C}$	-	-	0.5	V
Reverse Current* ²	I_R	Rated V_R	@ $T_J = 25^\circ\text{C}$	-	-	100	μA
			@ $T_J = 100^\circ\text{C}$	-	-	10	mA
Reverse Recovery Time	t_{rr}	$I_F = 1\text{A}$, $dI_F/dt = 100\text{A}/\mu\text{s}$, $V_R = 30\text{V}$		-	4.8	-	ns
Diode capacitance	C_J	$V_R = 4\text{V}$, $f = 1\text{MHz}$		-	54	-	pF

Note*¹: Pulse test: 300us pulse width, 1 % duty cycle

Note*²: Pulse test: Pulse width 40ms

Schottky Barrier Rectifier

MBRX120 - MBRX140

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

Fig.1 Forward Current Derating Curve

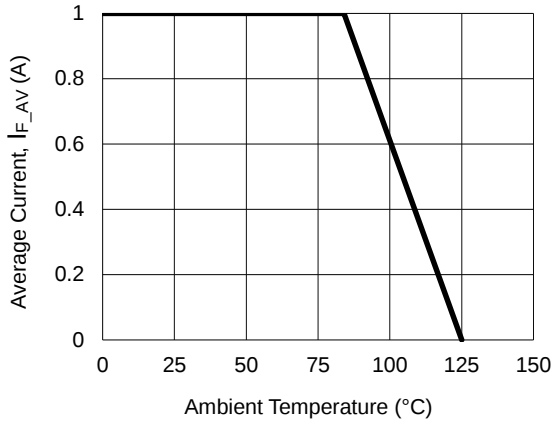


Fig.2 Surge Current Derating Curve

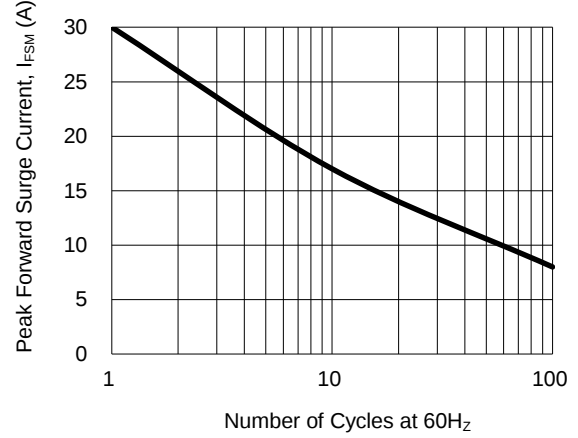


Fig.3 Typical Forward Voltage Characteristics

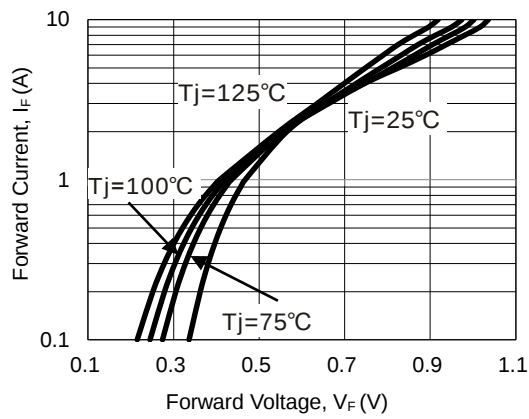
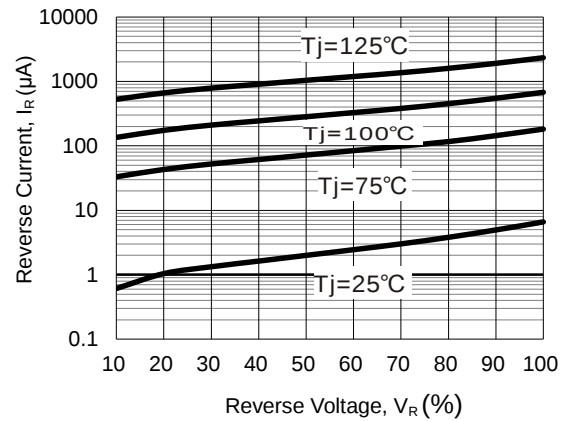


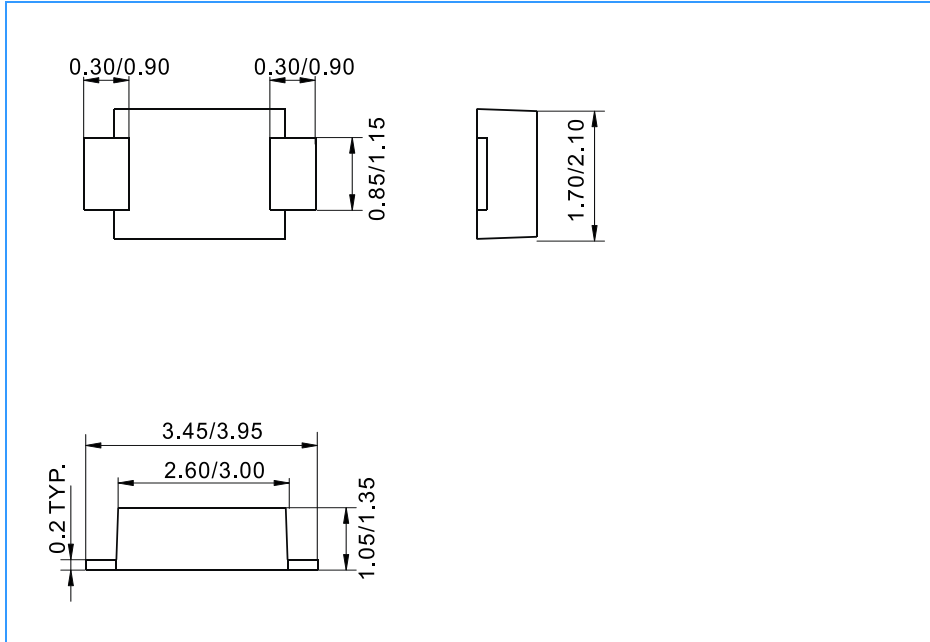
Fig.4 Typical Reverse Characteristics



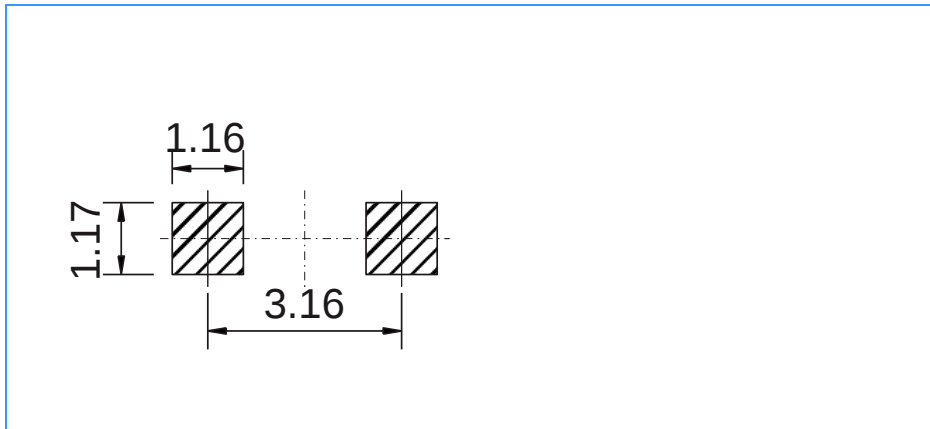
Schottky Barrier Rectifier

MBRX120 - MBRX140

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Marking	Package	Shipping Quantity
MBRX120	S2	SOD-123FL	10000 pcs / Tape & Reel
MBRX130	S3	SOD-123FL	10000 pcs / Tape & Reel
MBRX140	S4	SOD-123FL	10000 pcs / Tape & Reel