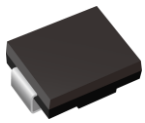
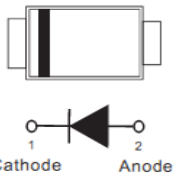
MB510-AU

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Voltage	100 V	Current	5 A

SMC





Features

- Low forward voltage drop
- Deal for automated placement
- Low power loss, high efficiency
- High surge current capability
- Green molding compound as per IEC 61249 standard
- Lead free in compliance with EU RoHS 2.0
- AEC-Q101 qualified

Mechanical Data

- Case: JEDEC DO-214AB molded plastic
- Polarity: Color Band denotes cathode end
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0082 ounces, 0.2325 grams

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	100	V
Maximum RMS Voltage	V_{RMS}	70	V
Maximum DC Blocking Voltage	V_{DC}	100	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5	A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	100	A
Typical Junction Capacitance Measured at 1 MHz And Applied V_R = 4V	C_J	180	pF
Typical Thermal Resistance per diode	$R_{\theta JA}$ (1) $R_{\theta JC}$ (2) $R_{\theta JL}$ (1)	55 15 17	°C/W
Operating Junction Temperature Range	T_J	-65 to +175	°C
Storage Temperature Range	T_{STG}	-65 to +175	°C

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Electrical Characteristics (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Instantaneous forward voltage	V_F	I_F = 1 A, T_J = 25 °C	-	0.58	-	V
		I_F = 2 A, T_J = 25 °C	-	0.71	-	
		I_F = 5 A, T_J = 25 °C	-	-	0.8	
		I_F = 1 A, T_J = 125 °C	-	0.47	-	
		I_F = 2 A, T_J = 125 °C	-	0.57	-	
		I_F = 5 A, T_J = 125 °C	-	0.62	-	
Reverse current	I_R (3)	V_R = 80 V, T_J = 25 °C	-	0.3	-	uA
		V_R = 100 V, T_J = 25 °C	-	-	50	
		V_R = 100 V, T_J = 100 °C	-	-	10	mA

NOTES:

1. Mounted on a PCB, single-sided copper, with 14 mm2 (0.013mm thick) copper pad area
2. Mounted on a FR4 PCB, single-sided copper, with 100 cm^2 copper pad area
3. Short duration pulse test used to minimize self-heating effect

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TYPICAL CHARACTERISTIC CURVES

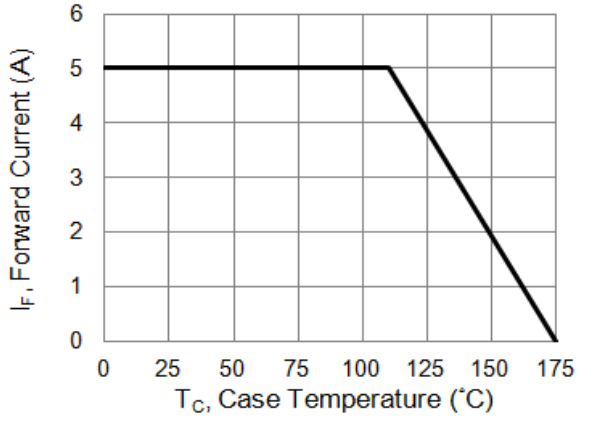


Fig.1 Forward Current Derating Curve

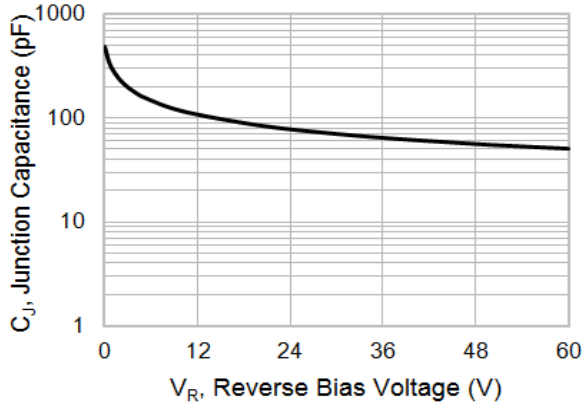


Fig.2 Typical Junction Capacitance

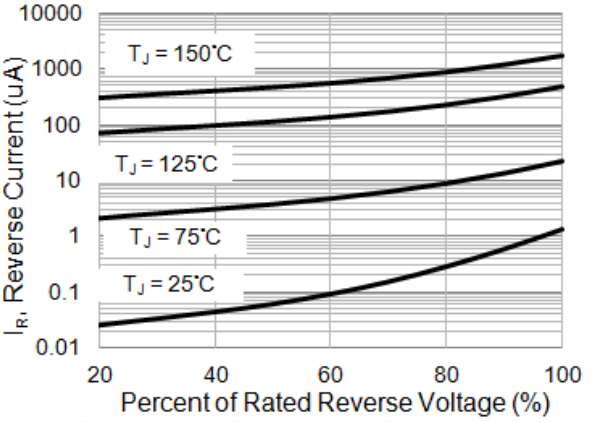


Fig.3 Typical Reverse Characteristics

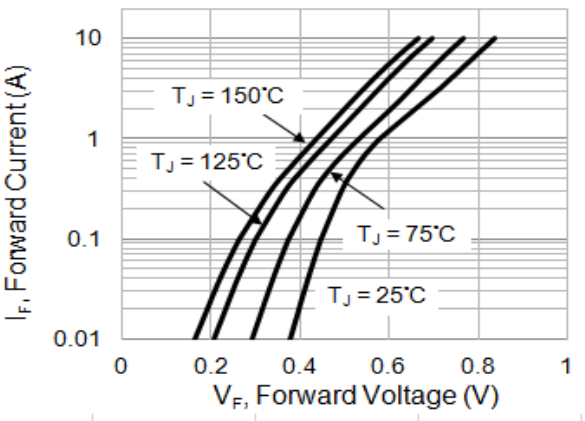


Fig.4 Typical Forward Characteristics

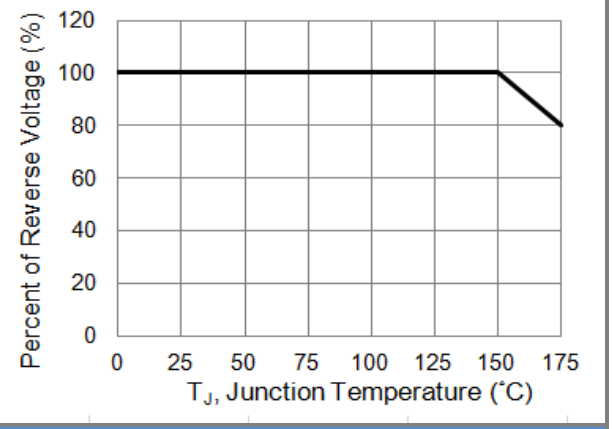


Fig.5 Operating Temperature Derating Curve

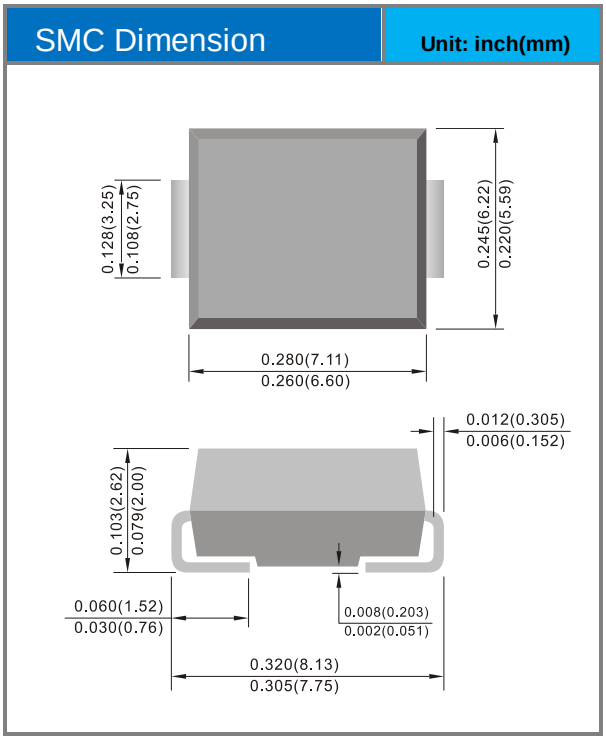
MB510-AU

Part No Packing Code Version

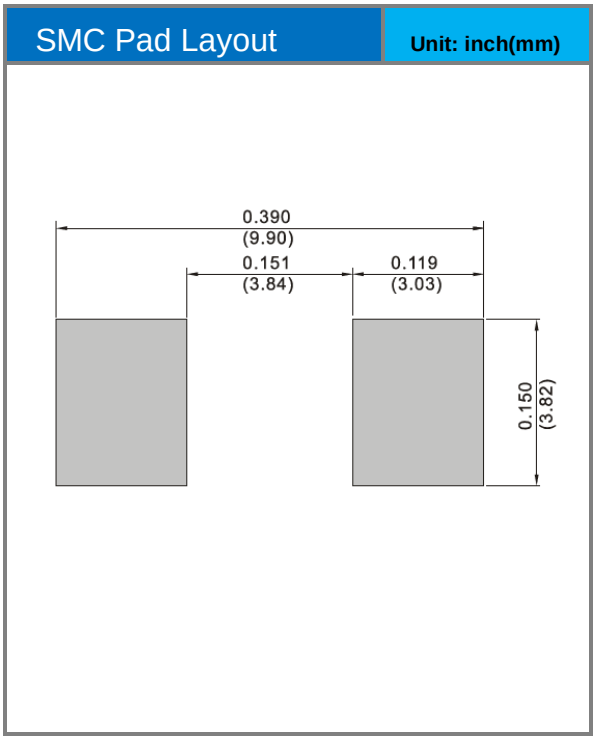
Part No Packing Code	Package Type	Packing Type	Marking	Version
MB510-AU_R2_000A1	SMC	3000 pcs / 13” reel	MB510	Halogen free

Packaging Information & Mounting Pad Layout

SMC Dimension — Unit: inch(mm)



SMC Pad Layout — Unit: inch(mm)



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