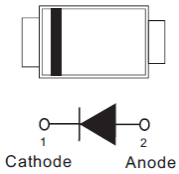
MER3DMB-AU

Surface Mount Super Fast Recovery Rectifier

Voltage	200 V	Current	3 A

SMB



Features

- Superfast recovery times-epitaxial construction
- Low forward voltage, high current capability
- Low leakage
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SMB Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.092 grams

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

PARAMETER		SYMBOL	LIMIT	UNITS
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	200	V
Maximum RMS Voltage		V_{RMS}	140	V
Maximum DC Blocking Voltage		V_{DC}	200	V
Maximum Average Forward Current		$I_{F(AV)}$	3	A
Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load		I_{FSM}	75	A
Typical Junction Capacitance Measured at 1 MHZ And Applied V_R = 4 V		C_J	31	pF
Typical Thermal Resistance	(Note 1)	$R_{\theta JA}$	135	°C/W
	(Note 2)	$R_{\theta JC}$	14	
	(Note 2)	$R_{\theta JL}$	17	
Operating Junction Temperature Range		T_J	-55~175	°C
Storage Temperature Range		T_{STG}	-55~175	°C

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage	V_F	I_F = 1 A, T_J = 25 °C	-	0.79	-	V
		I_F = 2 A, T_J = 25 °C	-	0.85	-	V
		I_F = 3 A, T_J = 25 °C	-	-	0.95	V
		I_F = 1 A, T_J = 125 °C	-	0.65	-	V
		I_F = 2 A, T_J = 125 °C	-	0.73	-	V
		I_F = 3 A, T_J = 125 °C	-	0.78	-	V
Reverse Current	I_R	V_R = 160 V, T_J = 25 °C	-	3	-	nA
		V_R = 200 V, T_J = 25 °C	-	-	1	uA
		V_R = 200 V, T_J = 125 °C	-	-	50	
Reverse Recovery Time	T_{RR}	I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A, T_J = 25 °C	-	-	35	ns
Reverse Recovery Time	T_{RR}	I_F = 3 A, V_R = 200 V di/dt = 300 A/uS T_J = 25 °C	-	20	-	ns
Peak Recovery Current	I_{RRM}		-	4.6	-	A
Reverse Recovery Charge	Q_{RR}		-	52	-	nC
Reverse Recovery Time	T_{RR}	I_F = 3 A, V_R = 200 V di/dt = 300A/uS T_J = 125 °C	-	30	-	ns
Peak Recovery Current	I_{RRM}		-	6.9	-	A
Reverse Recovery Charge	Q_{RR}		-	110	-	nC

NOTES :

1. Mounted on a FR4 PCB, single-sided copper, standard footprint.
2. Mounted on a FR4 PCB, single-sided copper, with 100 cm^2 copper pad area.

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TYPICAL CHARACTERISTIC CURVES

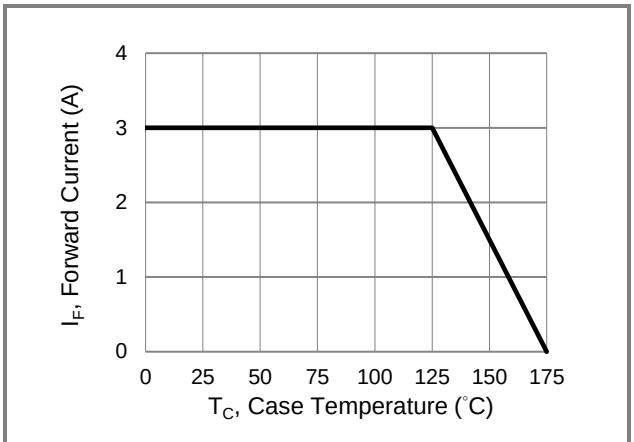

Fig.1 Forward Current Derating Curve

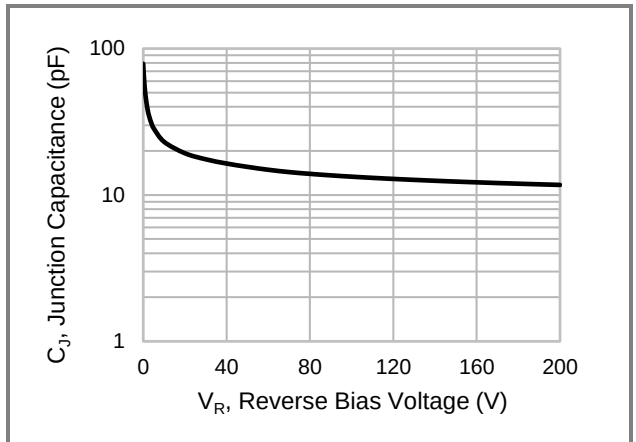

Fig.2 Typical Junction Capacitance

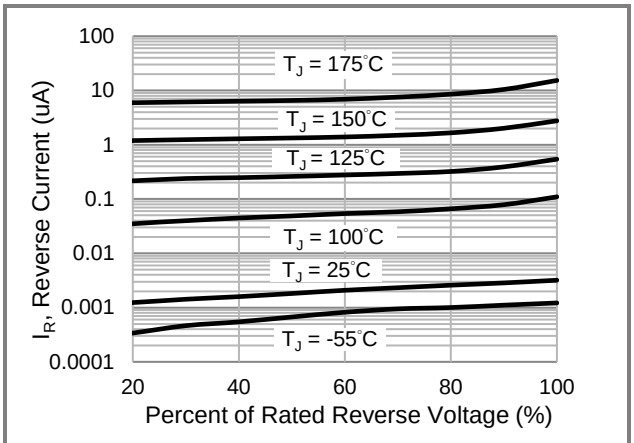

Fig.3 Typical Reverse Characteristics

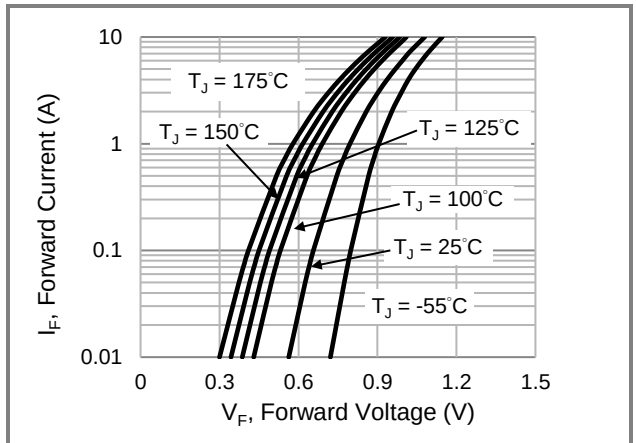

Fig.4 Typical Forward Characteristics

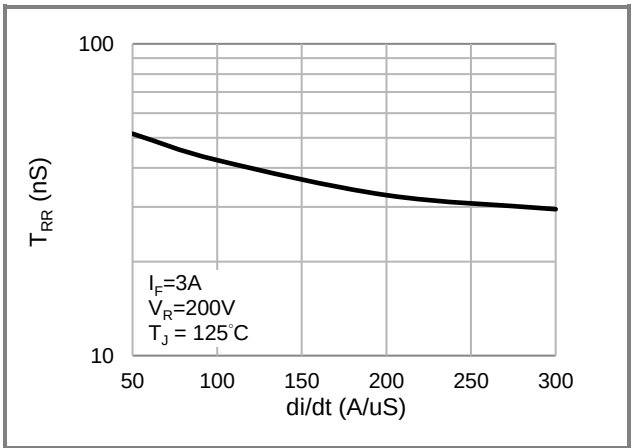

Fig.5 Typical Reverse Recovery Time Versus di/dt

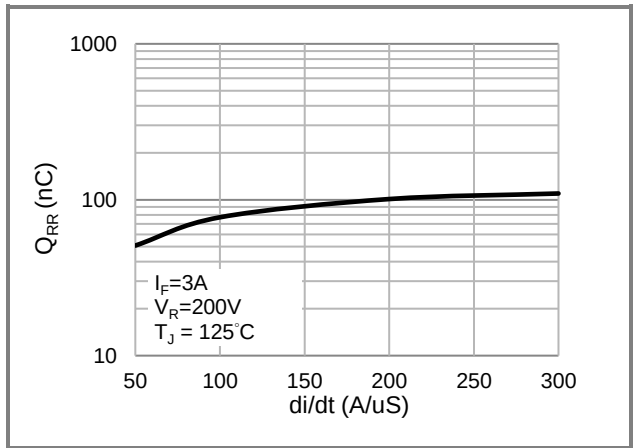

Fig.6 Typical Reverse Recovery Charge Versus di/dt

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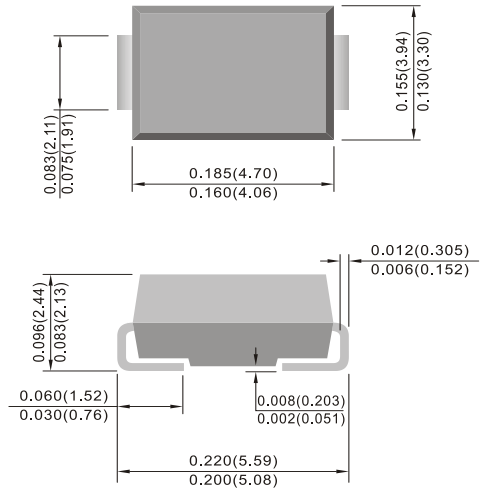
MER3DMB-AU

Part No. Packing Code Version

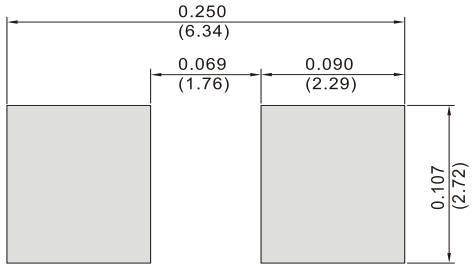
Part No. Packing Code	Package Type	Packing Type	Marking	Version
MER3DMB-AU_R2_006A1	SMB	3K pcs / 13” reel	MER3DB	Halogen free RoHS compliant

Packaging Information & Mounting Pad Layout

SMB Dimension — Unit: inch(mm)



SMB Pad Layout — Unit: inch(mm)



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