MER3DMB-AU

Surface Mount Super Fast Recovery Rectifier

| **Voltage**	**200 V**	**Current**	**3 A**

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

SMB

1 Cathode   2 Anode
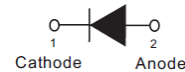
Maximum Ratings and Thermal Characteristics (T$_A$ = 25 ^{o}C unless otherwise noted)

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	^{o}C/W
	(Note 2)	R$_{\theta JC}$	14	
	(Note 2)	R$_{\theta JL}$	17	
Operating Junction Temperature Range		T$_J$	-55~175	^{o}C
Storage Temperature Range		T$_{STG}$	-55~175	^{o}C

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Electrical Characteristics (T$_A$ = 25 ^{o}C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage	V$_F$	I$_F$ = 1 A, T$_J$ = 25 ^{o}C	-	0.79	-	V
		I$_F$ = 2 A, T$_J$ = 25 ^{o}C	-	0.85	-	V
		I$_F$ = 3 A, T$_J$ = 25 ^{o}C	-	-	0.95	V
		I$_F$ = 1 A, T$_J$ = 125 ^{o}C	-	0.65	-	V
		I$_F$ = 2 A, T$_J$ = 125 ^{o}C	-	0.73	-	V
		I$_F$ = 3 A, T$_J$ = 125 ^{o}C	-	0.78	-	V
Reverse Current	I$_R$	V$_R$ = 160 V, T$_J$ = 25 ^{o}C	-	3	-	nA
		V$_R$ = 200 V, T$_J$ = 25 ^{o}C	-	-	1	uA
		V$_R$ = 200 V, T$_J$ = 125 ^{o}C	-	-	50	
Reverse Recovery Time	T$_{RR}$	I$_F$ = 0.5 A, I$_R$ = 1 A, I$_{RR}$ = 0.25 A, T$_J$ = 25 ^{o}C	-	-	35	ns
Reverse Recovery Time	T$_{RR}$	I$_F$ = 3 A, V$_R$ = 200 V di/dt = 300 A/uS T$_J$ = 25 ^{o}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 ^{o}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.
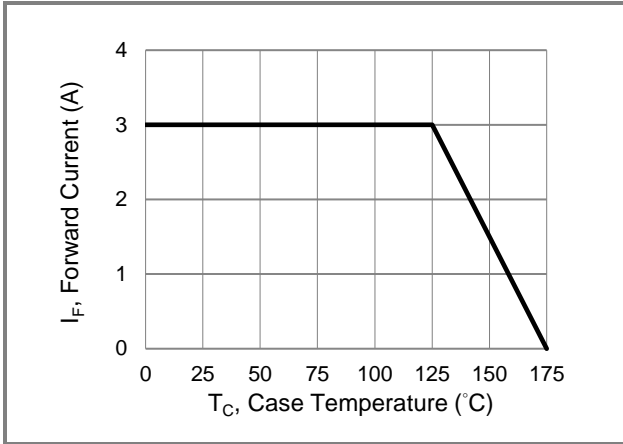
TYPICAL CHARACTERISTIC CURVES
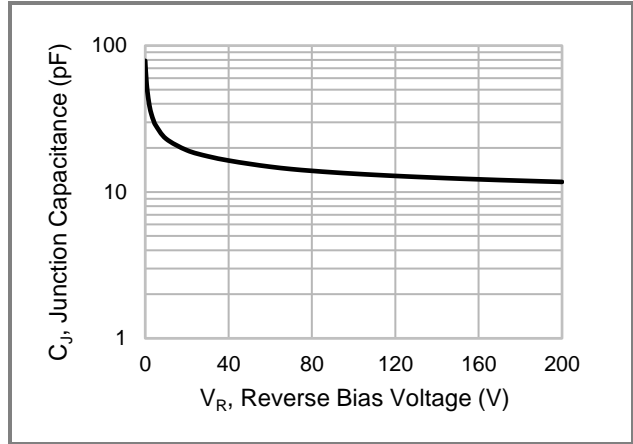
Fig.1 Forward Current Derating Curve

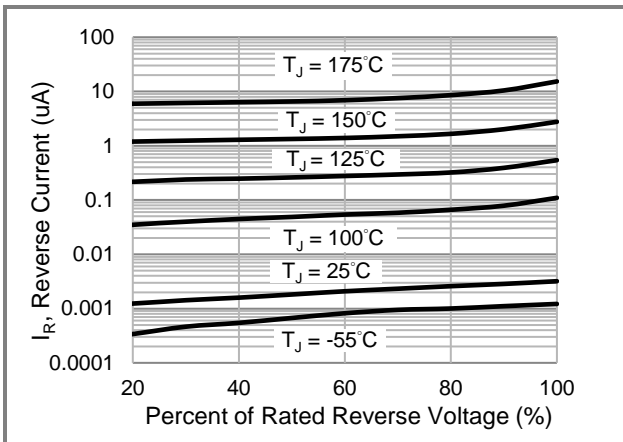**Fig.2 Typical Junction Capacitance**
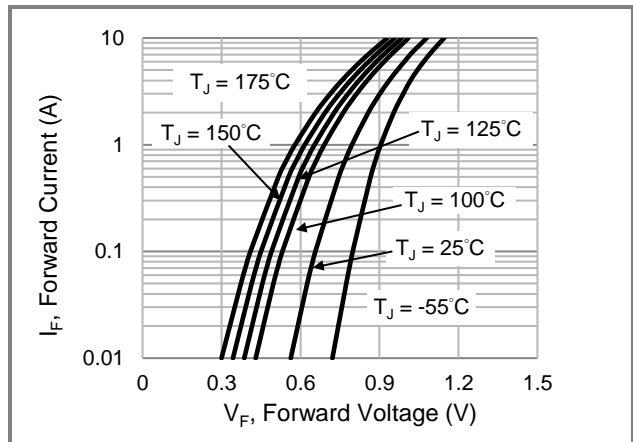
Fig.3 Typical Reverse Characteristics

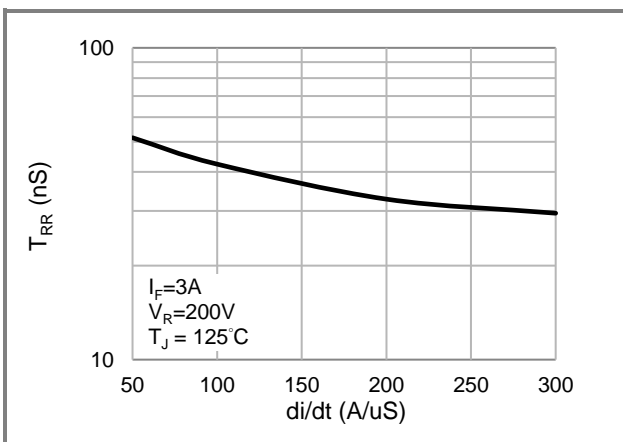**Fig.4 Typical Forward Characteristics**

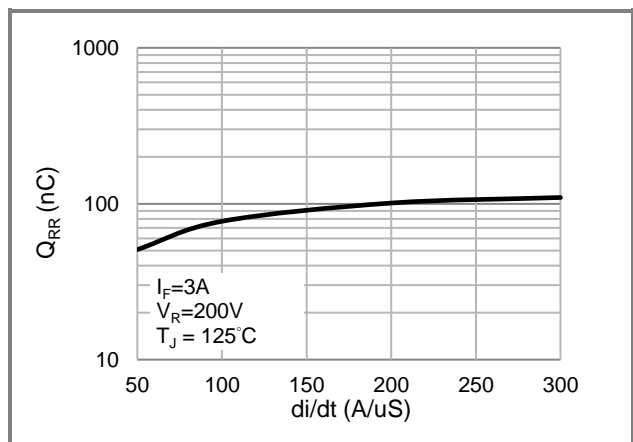**Fig.5 Typical Reverse Recovery Time Versus di/dt**
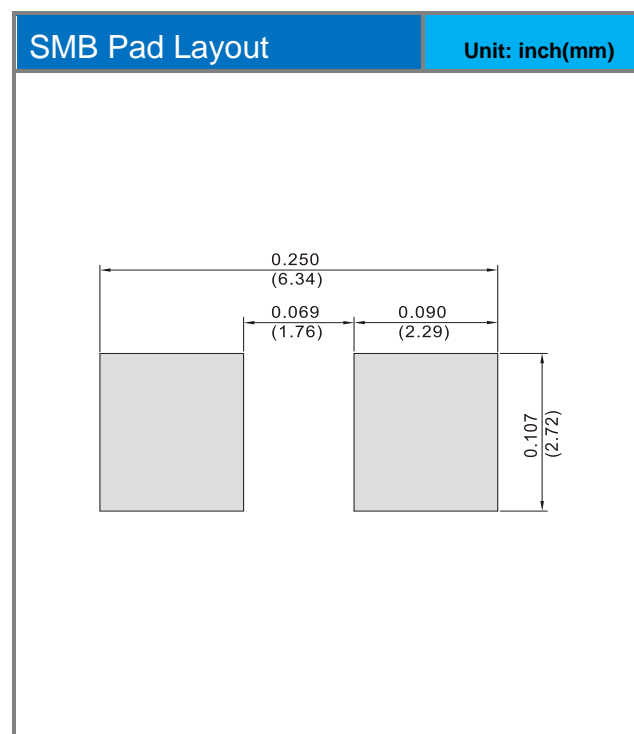
Fig.6 Typical Reverse Recovery Charge Versus di/dt

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)

0.155(3.94)
0.130(3.30)

0.083(2.11)
0.075(1.91)

0.185(4.70)
0.160(4.06)

0.012(0.305)
0.006(0.152)

0.096(2.44)
0.083(2.13)

0.060(1.52)
0.030(0.76)

0.008(0.203)
0.002(0.051)

0.220(5.59)
0.200(5.08)

SMB Pad Layout	Unit: inch(mm)

0.250
(6.34)

0.069
(1.76)

0.090
(2.29)

0.107
(2.72)
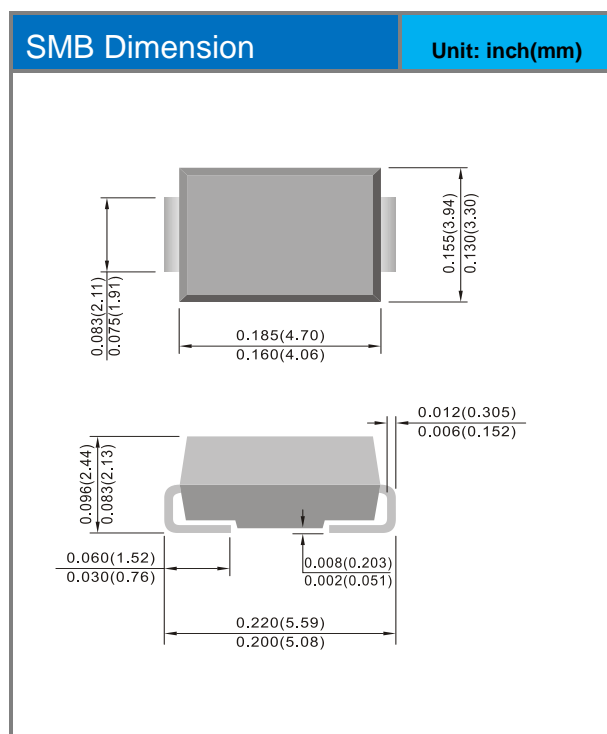
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