

MER3DMA

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-0
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case : SMA Package
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0679 grams

SMA



Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ\text{C}$ 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 $V_R = 4\text{ V}$		C_J	31	pF
Typical Thermal Resistance	(Note 1)	$R_{\theta JA}$	150	$^{\circ}\text{C/W}$
	(Note 2)	$R_{\theta JC}$	16	
	(Note 2)	$R_{\theta JL}$	20	
Operating Junction Temperature Range		T_J	-55~175	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	-55~175	$^{\circ}\text{C}$

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Forward Voltage	V_F	$I_F = 1\text{ A}, T_J = 25^\circ\text{C}$	-	0.79	-	V
		$I_F = 2\text{ A}, T_J = 25^\circ\text{C}$	-	0.85	-	V
		$I_F = 3\text{ A}, T_J = 25^\circ\text{C}$	-	-	0.95	V
		$I_F = 1\text{ A}, T_J = 125^\circ\text{C}$	-	0.65	-	V
		$I_F = 2\text{ A}, T_J = 125^\circ\text{C}$	-	0.73	-	V
		$I_F = 3\text{ A}, T_J = 125^\circ\text{C}$	-	0.78	-	V
Reverse Current	I_R	$V_R = 160\text{ V}, T_J = 25^\circ\text{C}$	-	3	-	nA
		$V_R = 200\text{ V}, T_J = 25^\circ\text{C}$	-	-	1	uA
		$V_R = 200\text{ V}, T_J = 125^\circ\text{C}$	-	-	50	
Reverse Recovery Time	T_{RR}	$I_F = 0.5\text{ A}, I_R = 1\text{ A},$ $I_{RR} = 0.25\text{ A}, T_J = 25^\circ\text{C}$	-	-	35	ns
Reverse Recovery Time	T_{RR}	$I_F = 3\text{ A}, V_R = 200\text{ V}$	-	20	-	ns
Peak Recovery Current	I_{RRM}	$di/dt = 300\text{ A/uS}$	-	4.6	-	A
Reverse Recovery Charge	Q_{RR}	$T_J = 25^\circ\text{C}$	-	52	-	nC
Reverse Recovery Time	T_{RR}	$I_F = 3\text{ A}, V_R = 200\text{ V}$	-	30	-	ns
Peak Recovery Current	I_{RRM}	$di/dt = 300\text{ A/uS}$	-	6.9	-	A
Reverse Recovery Charge	Q_{RR}	$T_J = 125^\circ\text{C}$	-	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 cm² copper pad area.

MER3DMA

TYPICAL CHARACTERISTIC CURVES

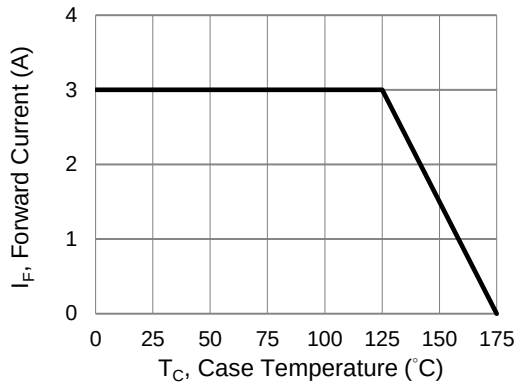


Fig.1 Forward Current Derating Curve

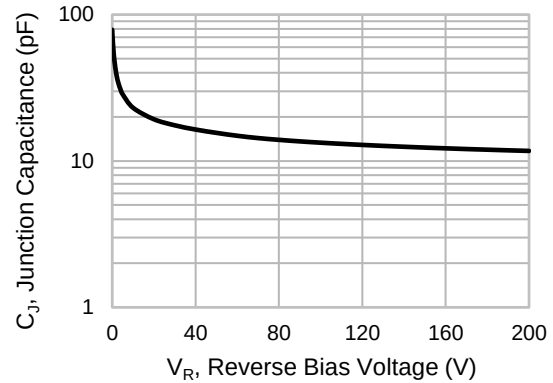


Fig.2 Typical Junction Capacitance

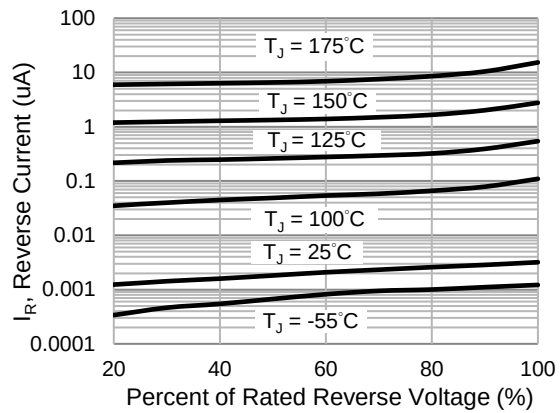


Fig.3 Typical Reverse Characteristics

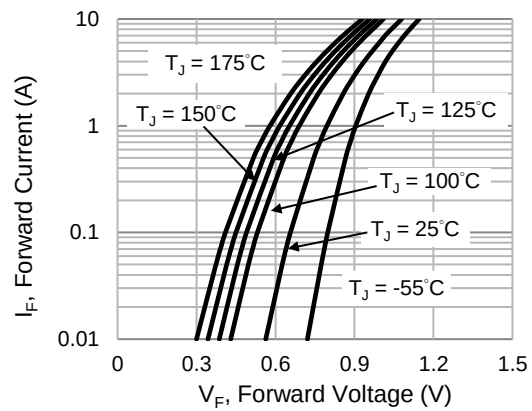


Fig.4 Typical Forward Characteristics

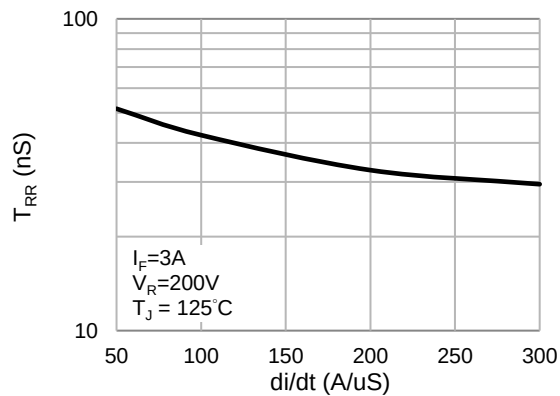


Fig.5 Typical Reverse Recovery Time Versus di/dt

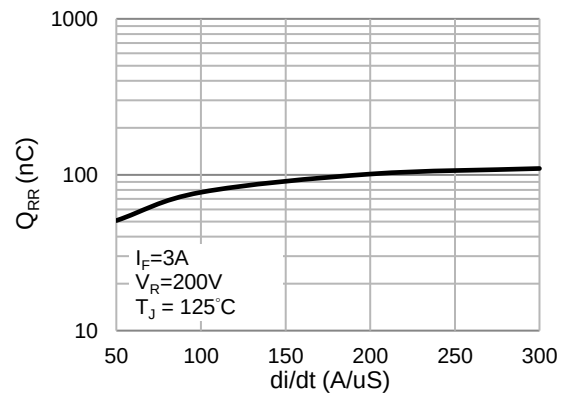


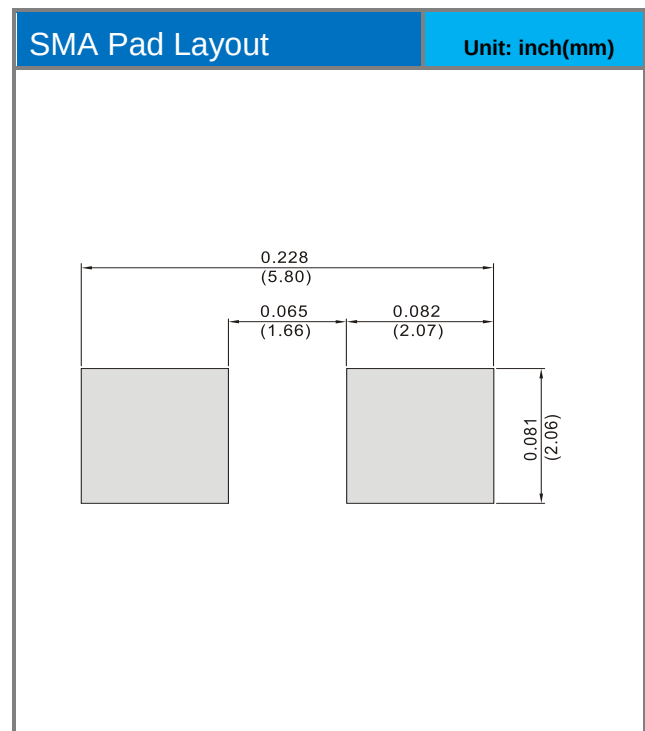
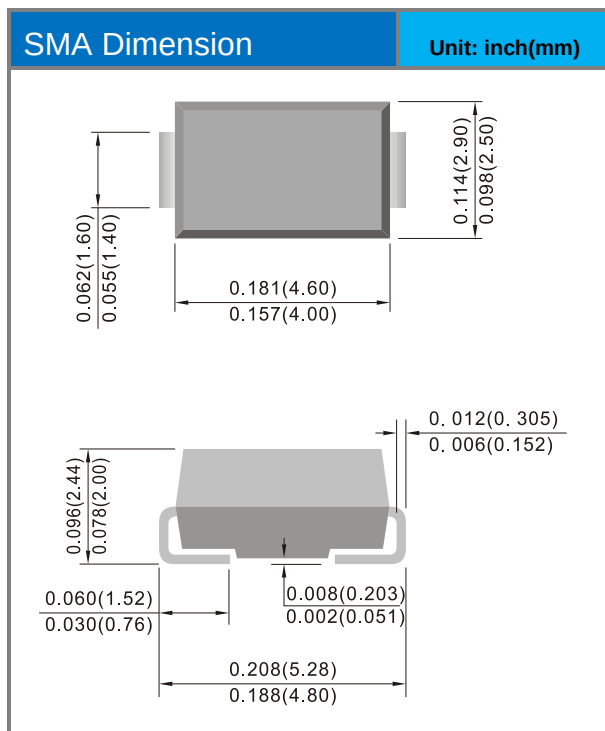
Fig.6 Typical Reverse Recovery Charge Versus di/dt

MER3DMA

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
MER3DMA	SMA	7.5K pcs / 13" reel	MER3DA

Packaging Information & Mounting Pad Layout



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