

Surface Mount Fast Recovery Rectifier

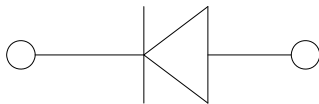


Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



Mechanical Data

- **Package:** SMBF
Molding compound meets UL 94 V-0 flammability rating, -compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	GR4MBF
Device marking code			GR4MBF
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	1000
Maximum RMS Voltage	V _{RMS}	V	700
Maximum DC blocking Voltage	V _{DC}	V	1000
Average rectified output current @60Hz half-sine wave, resistance load, TC (Fig.1)	I _O	A	4.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	120
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			240
Current squared time @1ms≤t≤8.3ms T _j =25°C, Rating of per diode	I ² t	A ² s	60
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C _j	pF	30
Storage temperature	T _{stg}	°C	-55 ~ +150
Junction temperature	T _j	°C	-55 ~ +150

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	GR4MBF
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =4.0A	1.3
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _R =0.25A	500
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	μA	T _j =25°C	5.0
			T _j =125°C	100

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	GR4MBF
Typical Thermal resistance	R _{θJA} ⁽¹⁾	°C/W	60
	R _{θJL} ⁽¹⁾		20
	R _{θJC} ⁽¹⁾		15

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

■ Characteristics (Typical)

FIG1: I_o-T_c Curve

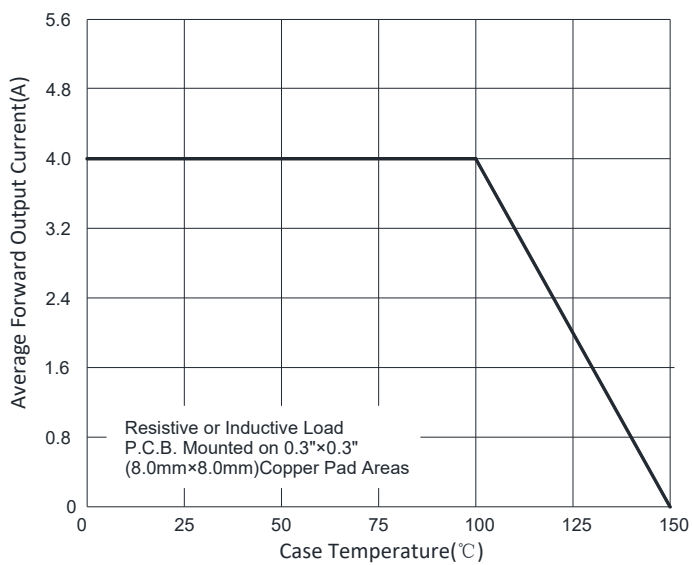


FIG2: Surge Forward Current Capability

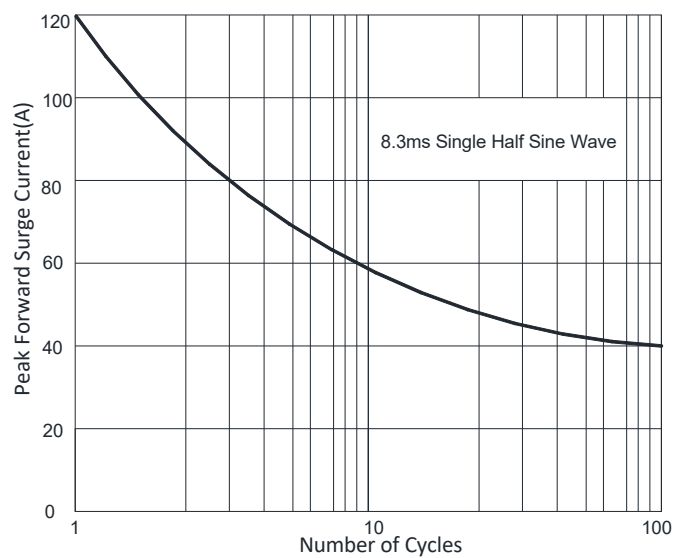


FIG3: Typical Forward Voltage

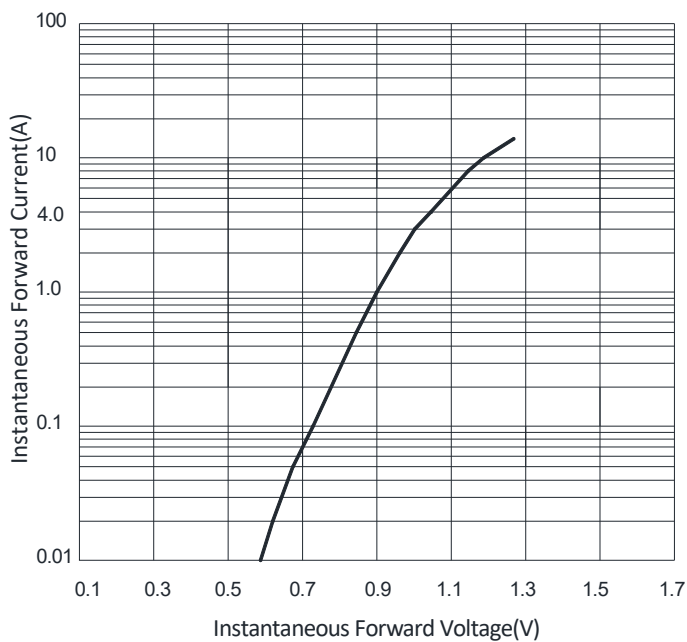


FIG4: Typical Reverse Characteristics

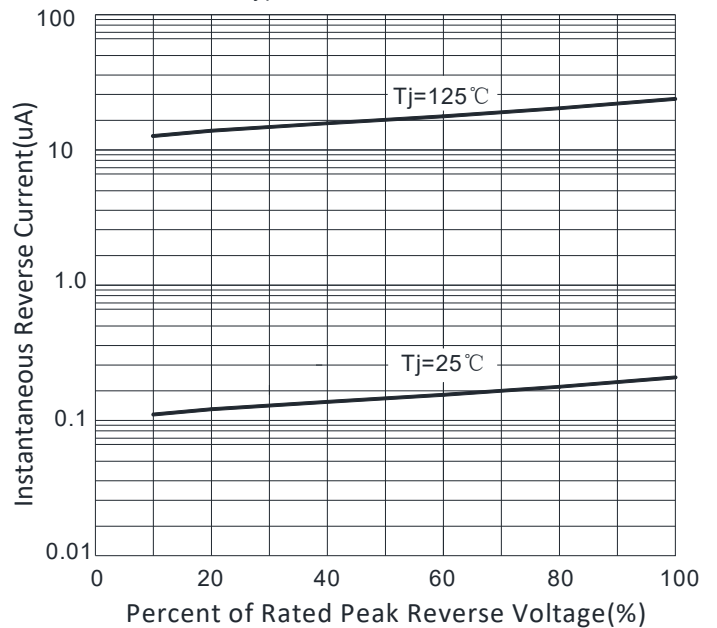
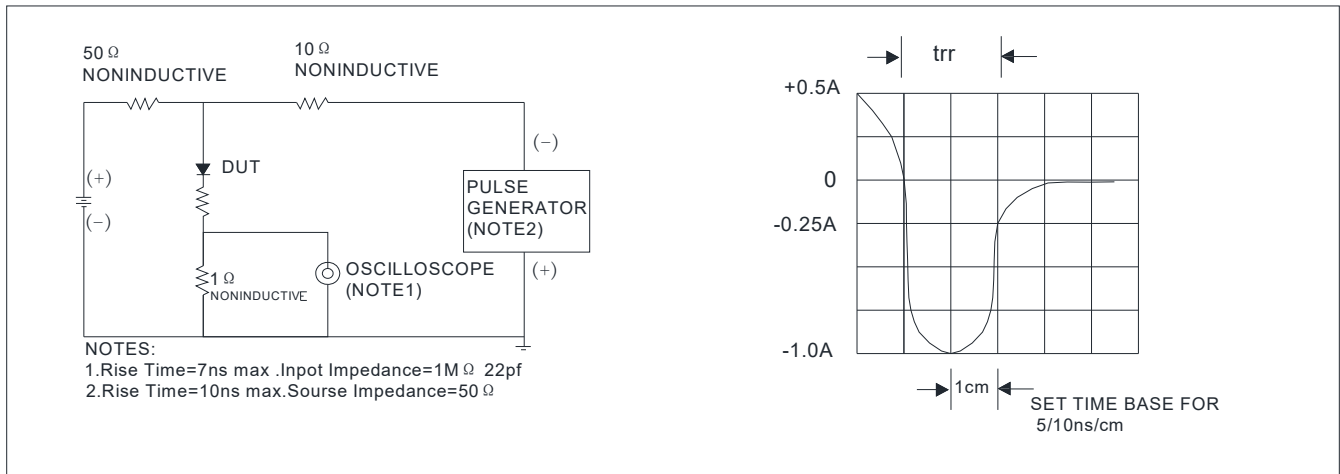


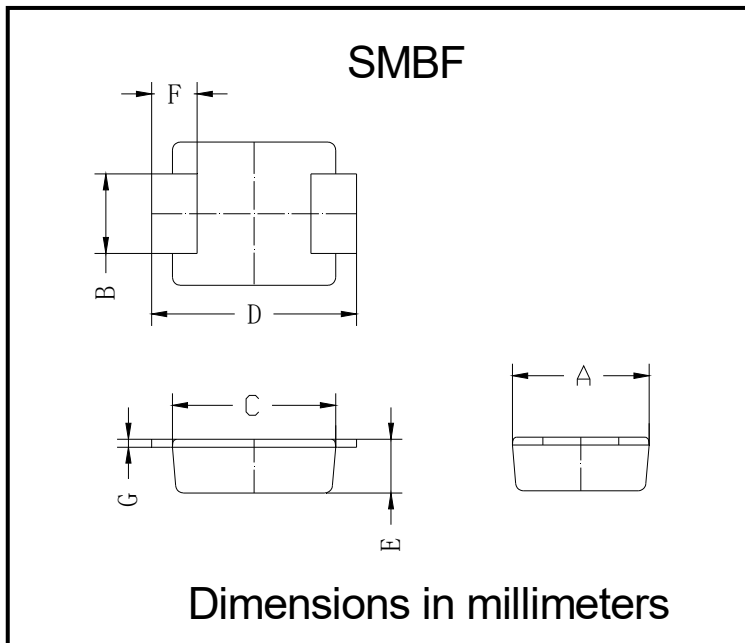
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Ordering Information (Example)

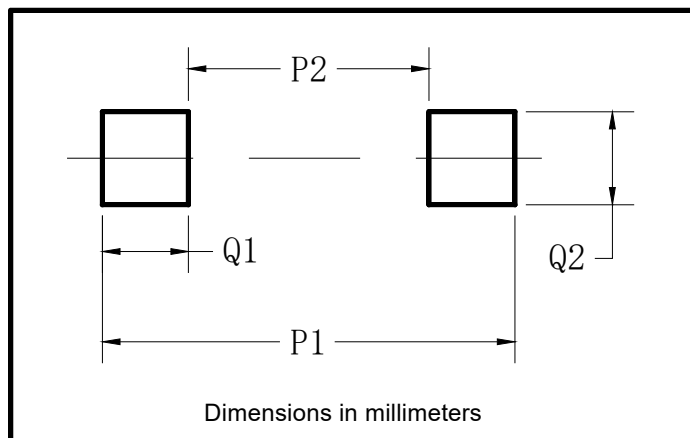
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GR4MBF	F1	Approximate 0.065	5000	/	80000	13" reel

■ Outline Dimensions



SMBF		
Dim	Min	Max
A	3.40	3.80
B	1.90	2.10
C	4.15	4.45
D	5.10	5.60
E	1.05	1.55
F	0.70	1.35
G	0.15	0.25

■ Suggested pad layout



Dim	Millimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20

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