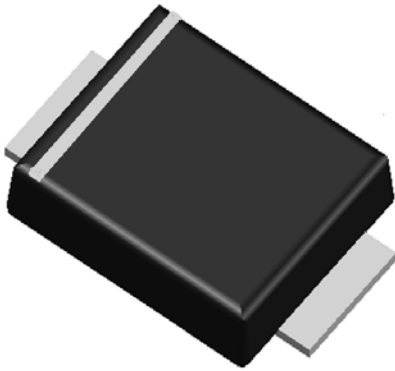


## Surface Mount Fast Recovery Rectifier

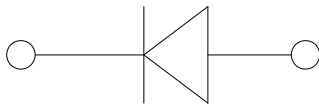


### Features

- 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, RoHS-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<sub>a</sub>=25°C Unless otherwise specified)

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

### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	GR4MBF
Maximum instantaneous forward voltage drop per diode	V <sub>F</sub>	V	I <sub>FM</sub> =4.0A	1.3
Maximum reverse recovery time	t <sub>r</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	500
Maximum DC reverse current at rated DC blocking voltage per diode	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5.0
			T <sub>j</sub> =125°C	100



# GR4MBF

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	GR4MBF
Typical Thermal resistance	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	60
	R <sub>θJ-L</sub> <sup>(1)</sup>		20
	R <sub>θJ-C</sub> <sup>(1)</sup>		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<sub>o</sub>-T<sub>c</sub> Curve

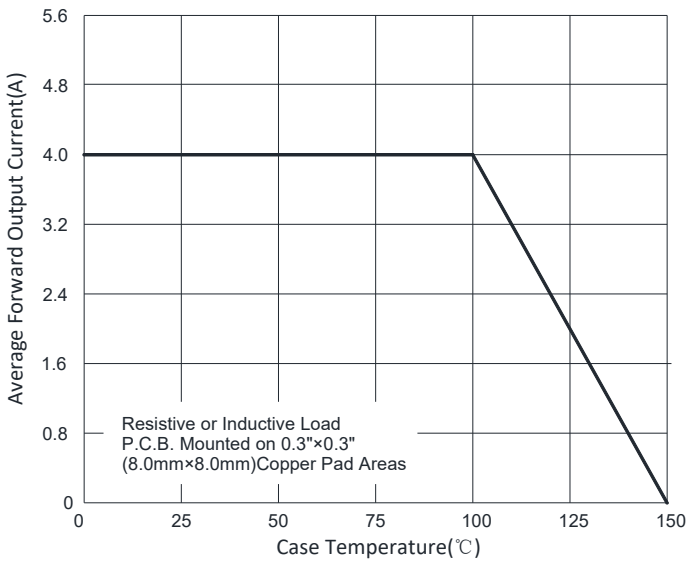


FIG2: Surge Forward Current Capability

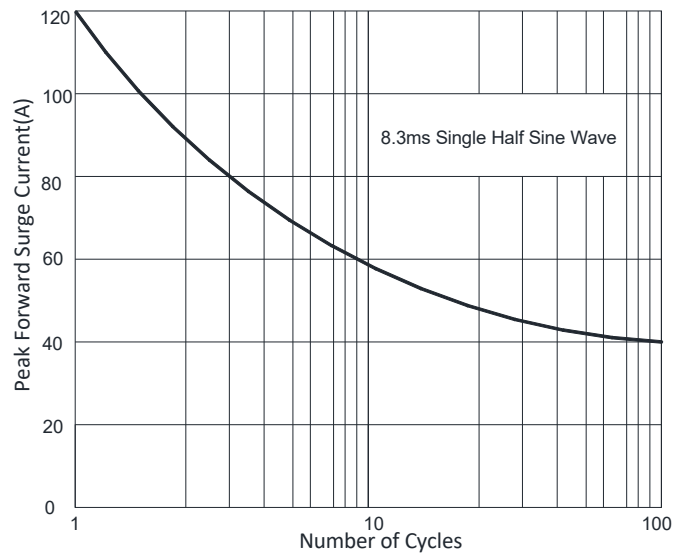


FIG3: Typical Forward Voltage

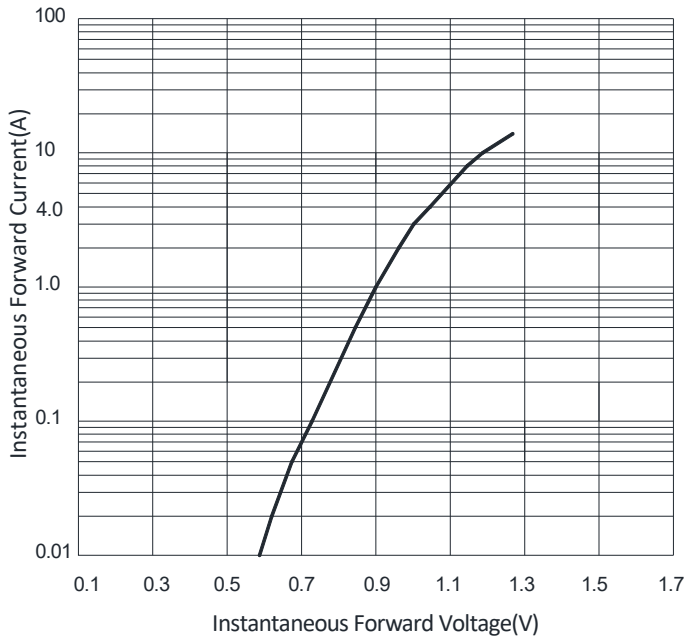


FIG4: Typical Reverse Characteristics

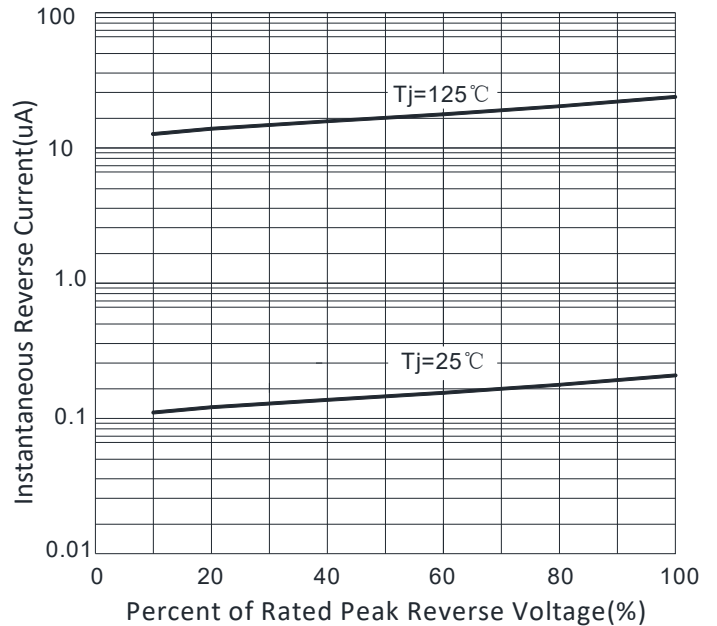
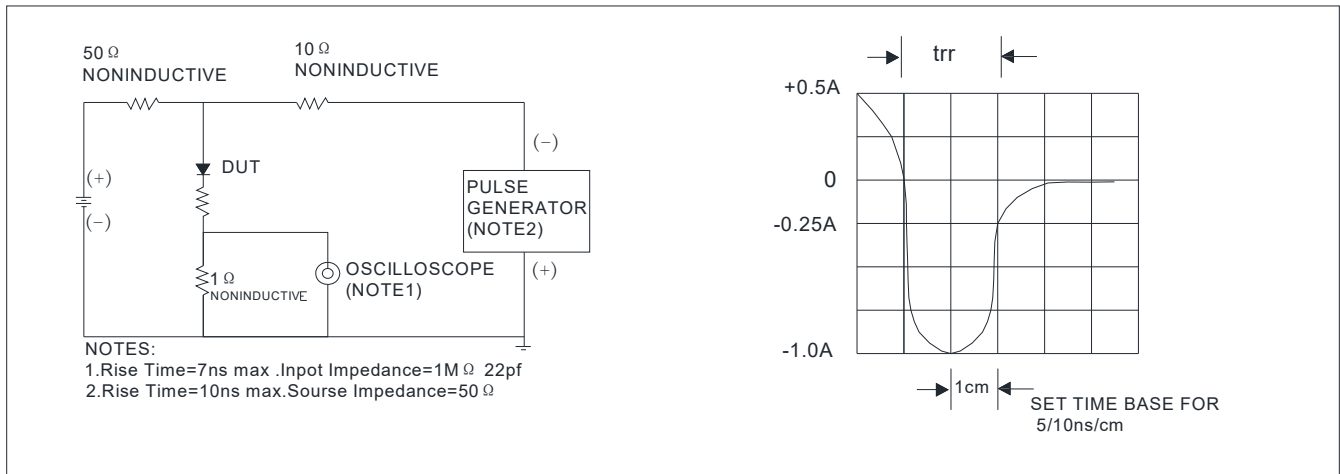


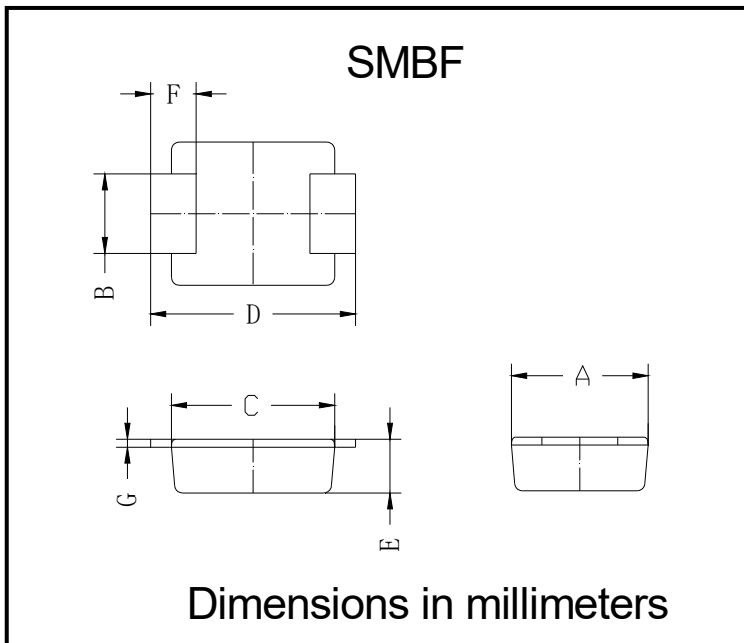
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



### 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

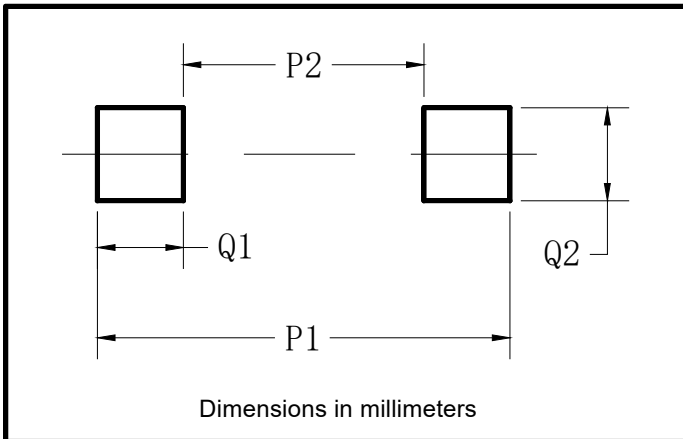
### Outline Dimensions



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	Milimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20



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