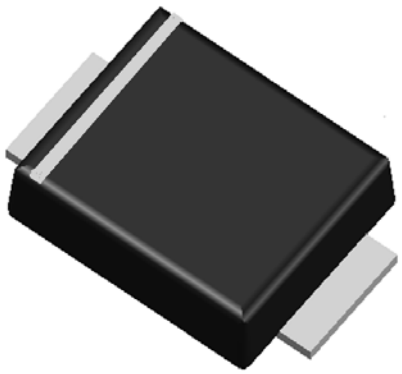
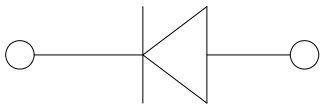
Surface Mount Fast Recovery Rectifier





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 (Ta=25℃ 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, Tj=25℃	I_{FSM}	A	120
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			240
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	60
Storage temperature	T_{stg}	℃	-55 ~ +150
Junction temperature	T_j	℃	-55 ~ +150

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	GR4MBF
Maximum instantaneous forward voltage	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_{rr}=0.25A	500
Maximum DC reverse current at rated DC blocking voltage	IR	μA	T_j=25℃	5.0
			T_j=125℃	100
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	30

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	GR4MBF
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	60
	$R_{\theta J-L}$(1)		20
	$R_{\theta J-C}$(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：Io-Tc Curve

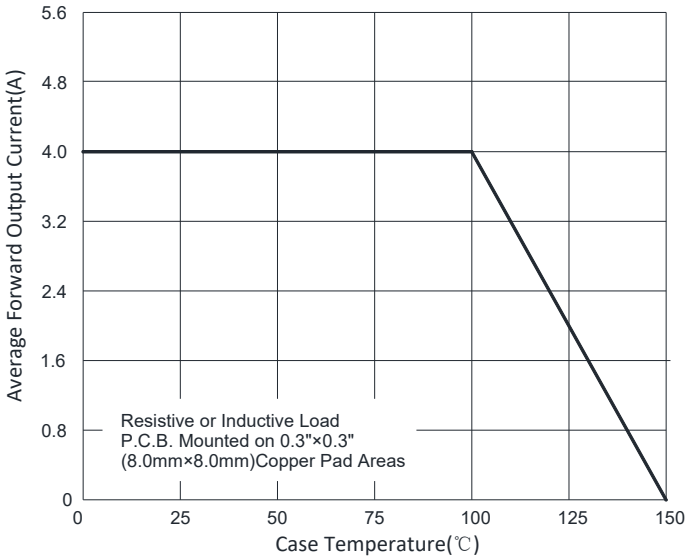


FIG2：Surge Forward Current Capability

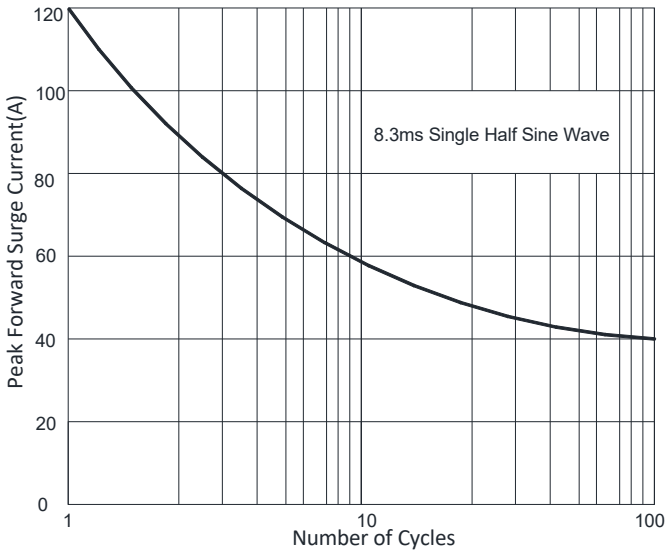


FIG3：Typial Forward Voltage

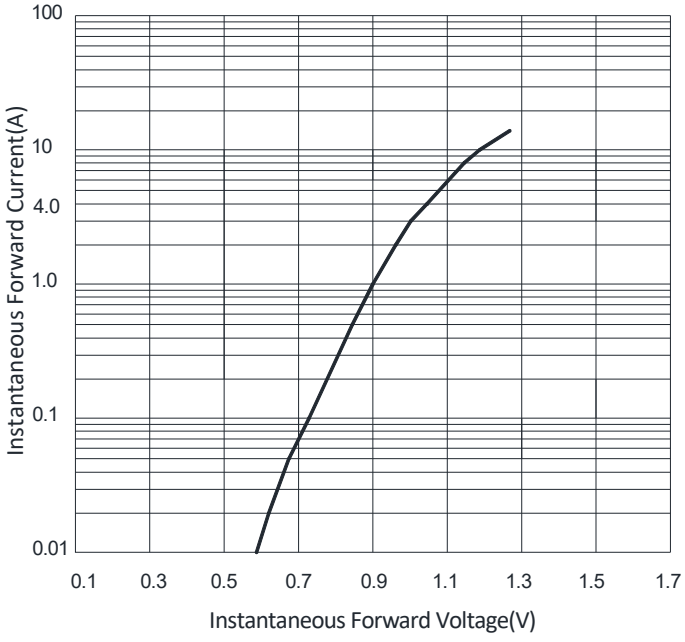


FIG4:Typical Reverse Characteristics

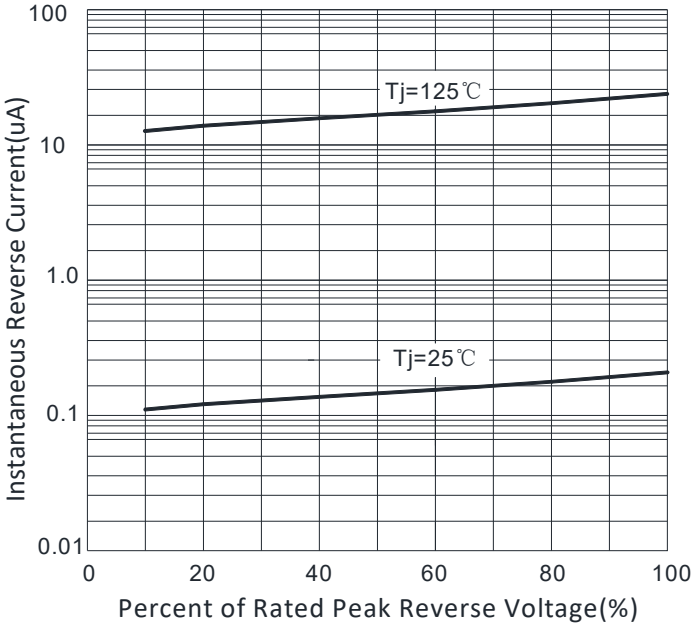
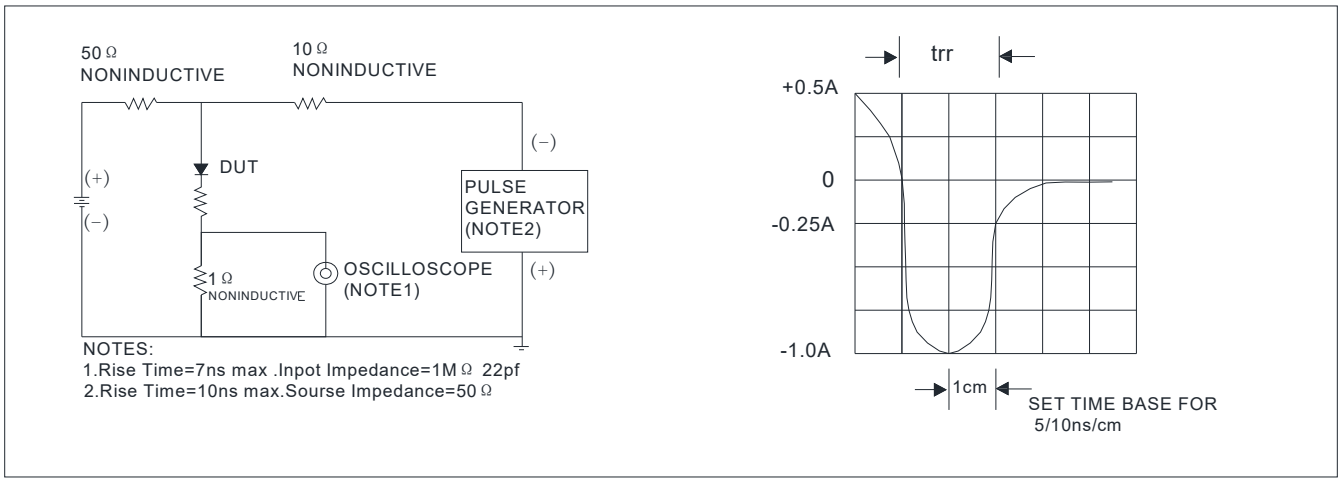


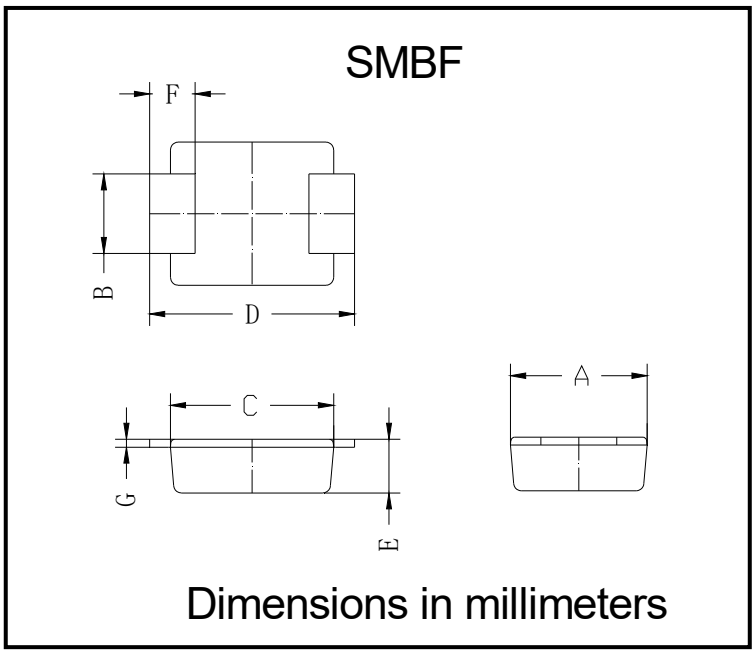
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

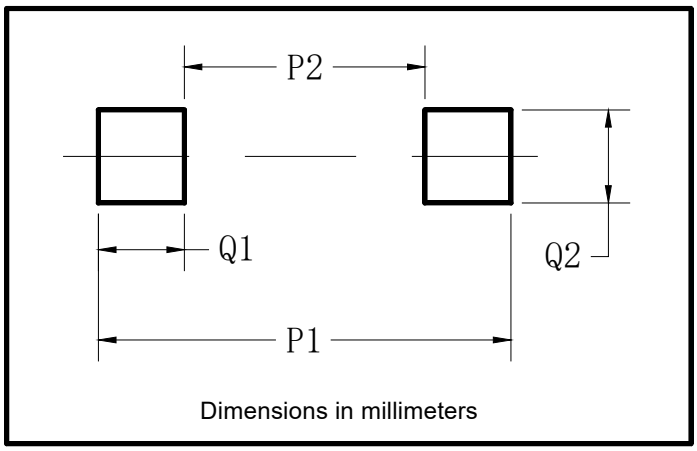
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GR4MBF	F1	Approximate 0.065	5000	/	80000	13” reel

■ 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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