

Surface Mount Fast Recovery Rectifier

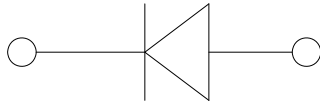


Features

- 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:** DO-214AA (SMB)
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	GR1AB	GR1BB	GR1DB	GR1GB	GR1JB	GR1KB	GR1MB
Device marking code			GR1AB	GR1BB	GR1DB	GR1GB	GR1JB	GR1KB	GR1MB
Maximum Repetitive Peak Reverse Voltage	VRRM	V	50	100	200	400	600	800	1000
Maximum RMS Voltage	VRMS	V	35	70	140	280	420	560	700
Maximum DC blocking Voltage	VDC	V	50	100	200	400	600	800	1000
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	IO	A	1.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	30						
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			60						
Current squared time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s	3.735						
Storage temperature	T _{stg}	°C	-55 ~ +150						
Junction temperature	T _j	°C	-55 ~ +150						

GR1AB THRU GR1MB

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	GR1AB	GR1BB	GR1DB	GR1GB	GR1JB	GR1KB	GR1MB
Maximum instantaneous forward voltage	V _F	V	I _{FM} =1.0A	1.3						
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	150				250	500	
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _j =25°C	5.0						
			T _j =125°C	100						
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	13				8		

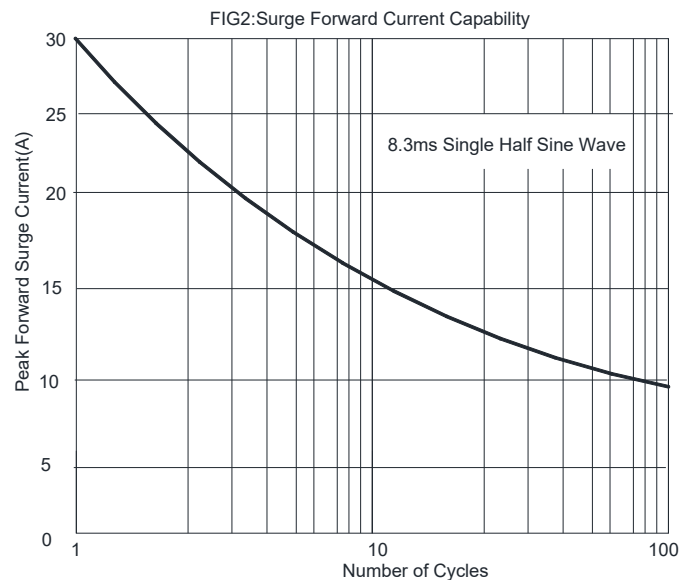
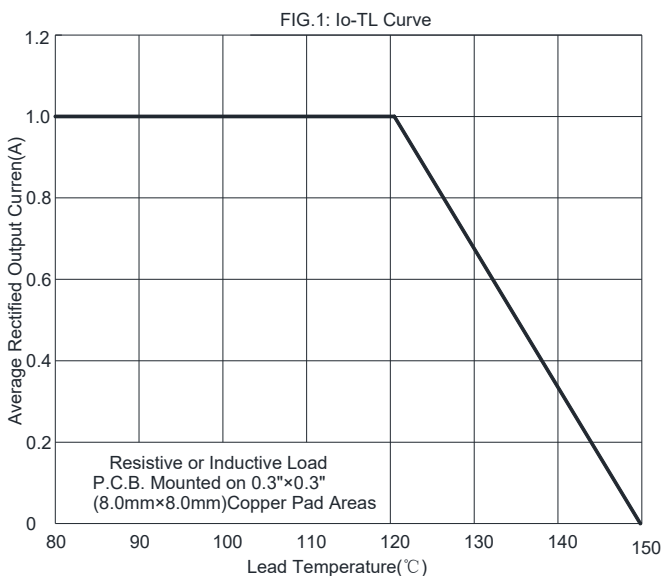
■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	GR1AB	GR1BB	GR1DB	GR1GB	GR1JB	GR1KB	GR1MB
Thermal Resistance	R _{θJA} ⁽¹⁾	°C/W	70						
	R _{θJL} ⁽¹⁾		20						
	R _{θJC} ⁽¹⁾		18						

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)



GR1AB THRU GR1MB

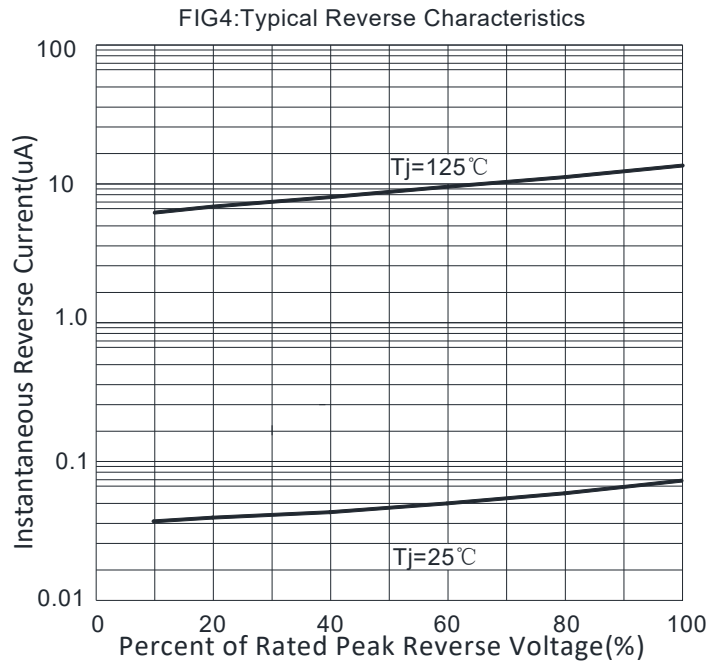
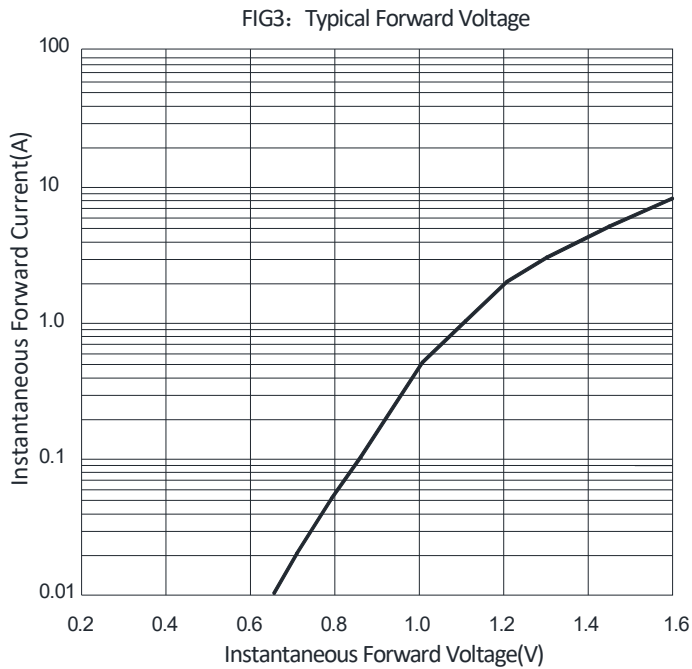
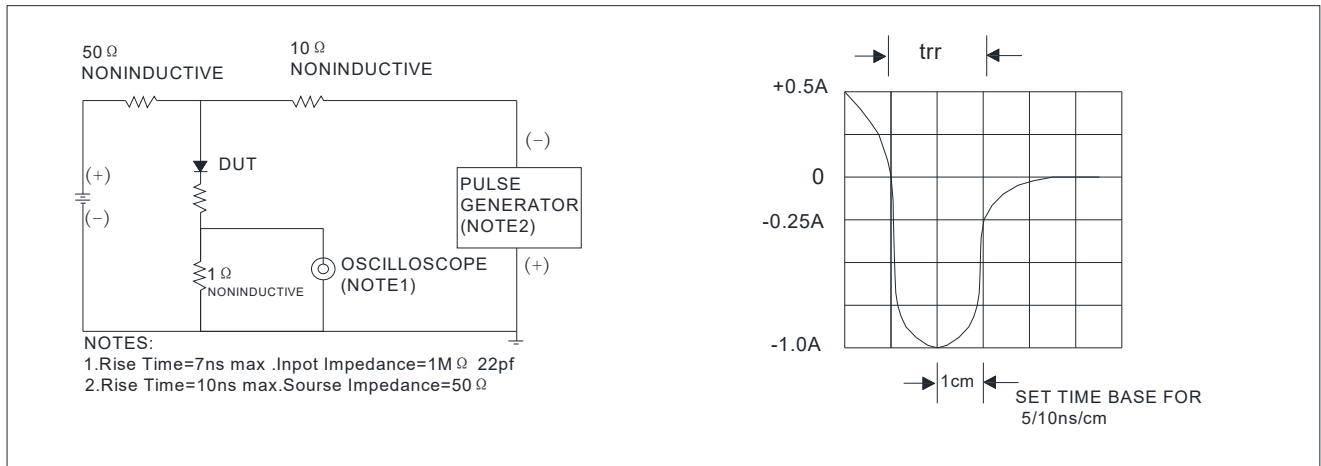


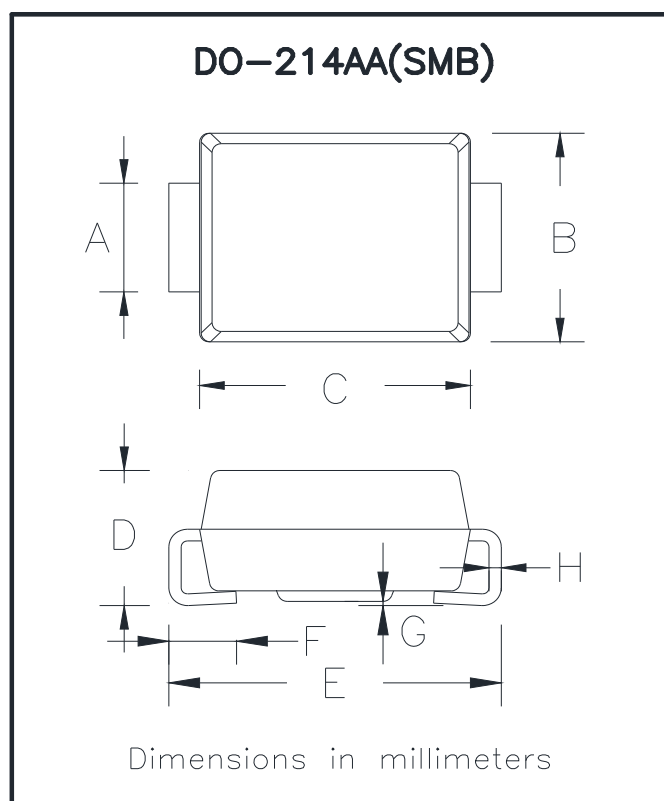
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Ordering Information (Example)

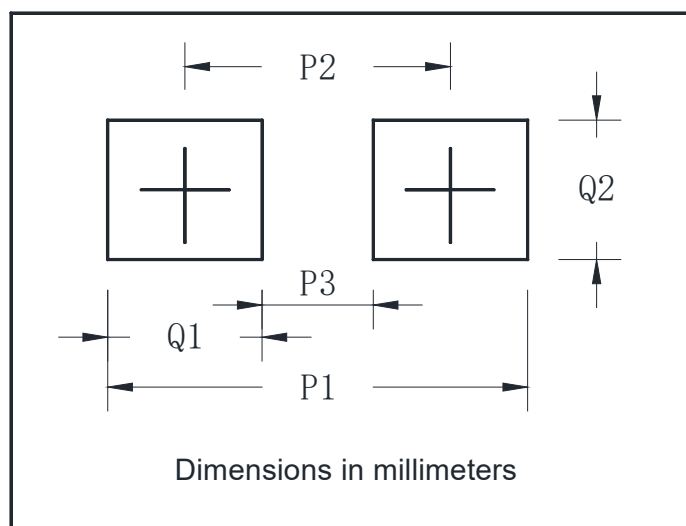
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GR1AB-GR1MB	F1	Approximate 0.096	3000	/	48000	13" reel
GR1AB-GR1MB	F2	Approximate 0.096	750	6000	24000	7" reel
GR1AB-GR1MB	F3	Approximate 0.096	500	4000	16000	7" reel

■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3

Disclaimer

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