

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 fast switching rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



Mechanical Data

- **Package:** DO-214AC (SMA)
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°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M
Device marking code			GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M
Repetitive peak reverse voltage	VRRM	V	50	100	200	400	600	800	1000
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	IO	A	1.0						
Surge(non-repetitive)forward current @ 60Hz Half-sine wave,1 cycle, Ta=25°C	IFSM	A	30						
Storage temperature	Tstg	°C	-55~+150						
Junction temperature	Tj	°C	-55 ~ +150						

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M
Maximum instantaneous forward voltage drop per diode	VF	V	IFM=1.0A	1.3						
Maximum reverse recovery time	TRR	ns	IF=0.5A,IR=1.0A, Irr=0.25A	150			250		500	
Maximum DC reverse current at rated DC blocking voltage per diode@ VRM=VRRM	IRRM	μA	Ta=25°C	5						
			Ta=125°C	100						



GR1A THRU GR1M

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

PARAMETER	SYMBOL	UNIT	GR1A	GR1B	GR1D	GR1G	GR1J	GR1K	GR1M
Typical Thermal Resistance	R _{θJ-A}	°C/W	75 ⁽¹⁾						
	R _{θJ-L}		22 ⁽¹⁾						
	R _{θJ-C}		20 ⁽¹⁾						

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■ Characteristics (Typical)

FIG.1: I_o-T_L Curve

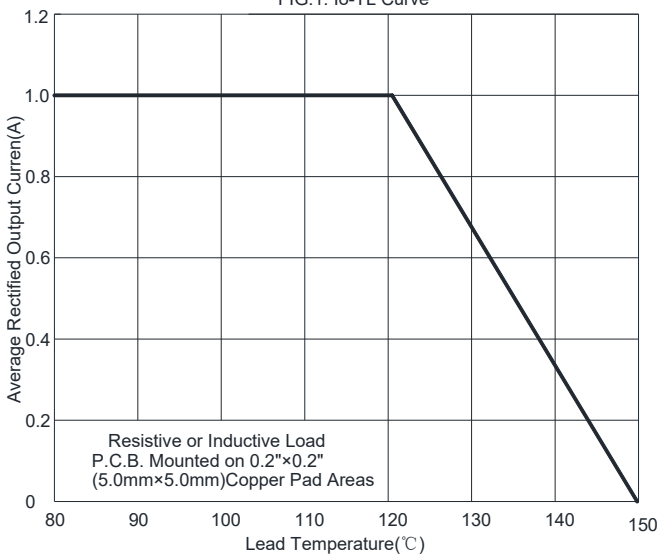


FIG2: Surge Forward Current Capability

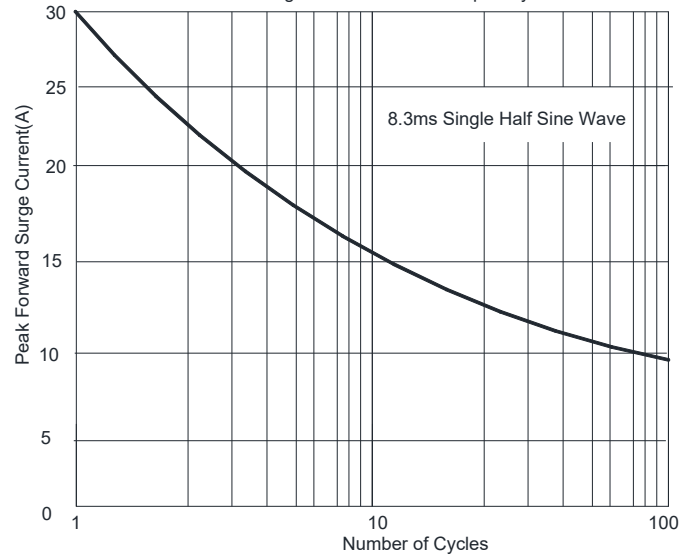


FIG3: Forward Voltage

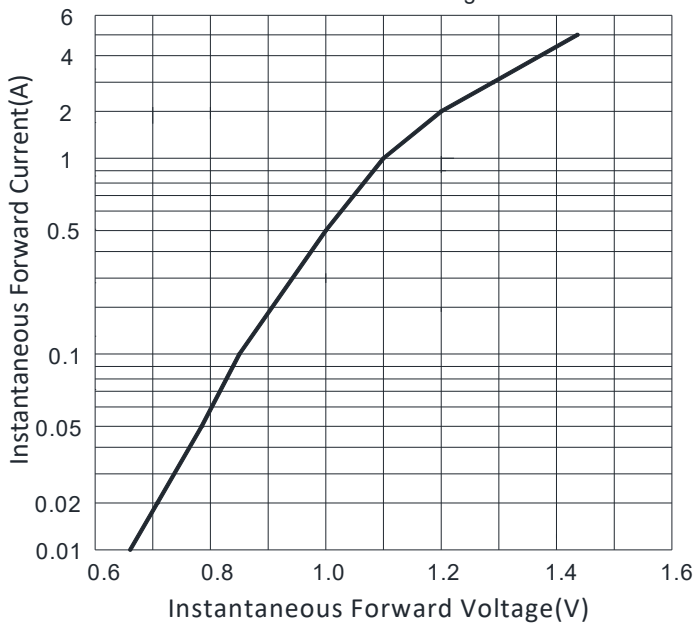


FIG4: Typical Reverse Characteristics

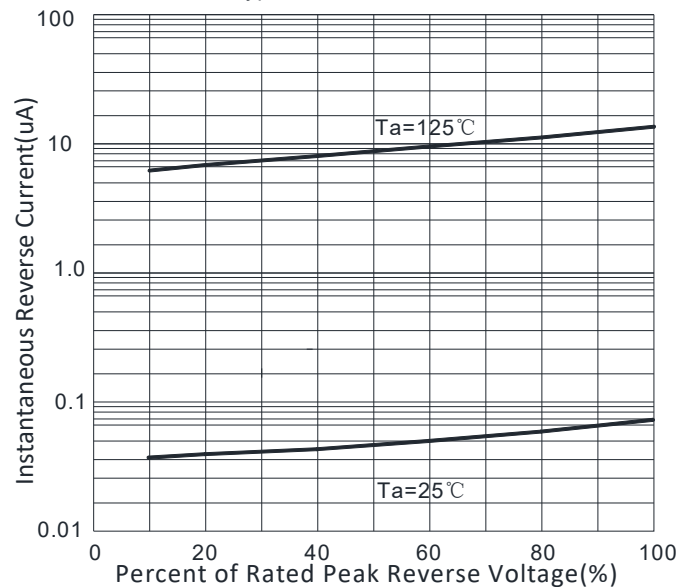
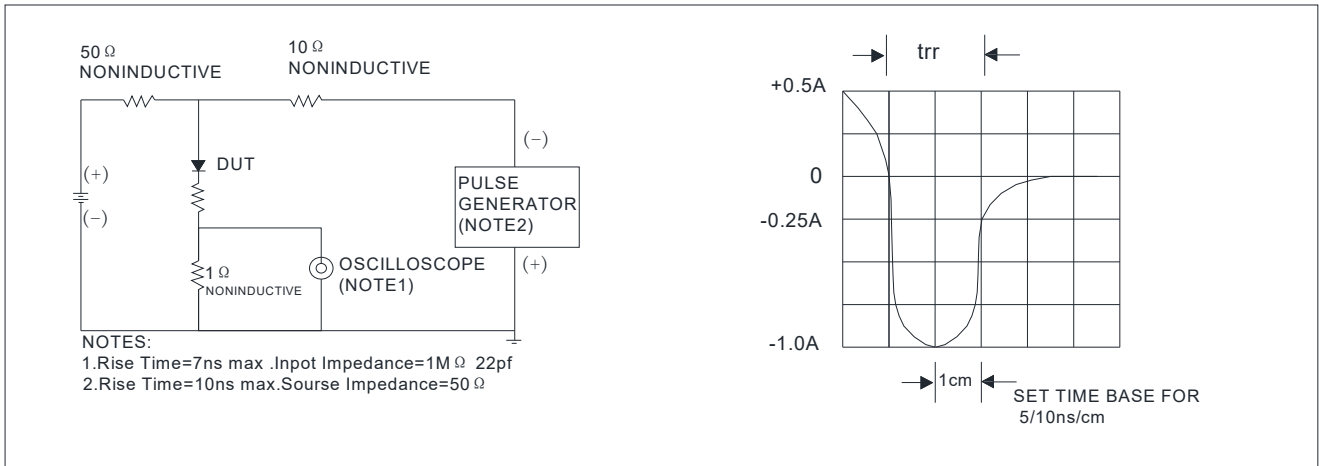


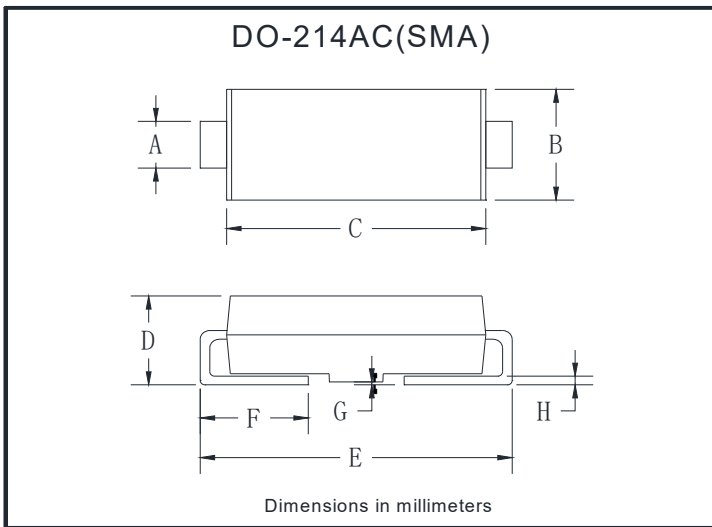
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GR1A-GR1M	F1	Approximate 0.059	5000	10000	80000	13" reel
GR1A-GR1M	F2	Approximate 0.059	7500	15000	120000	13" reel
GR1A-GR1M	F3	Approximate 0.059	7500	15000	60000	13" reel
GR1A-GR1M	F4	Approximate 0.059	1800	7200	57600	7" reel
GR1A-GR1M	F5	Approximate 0.059	2000	8000	64000	7" reel
GR1A-GR1M	F6	Approximate 0.059	5000	10000	100000	13" reel

Outline Dimensions

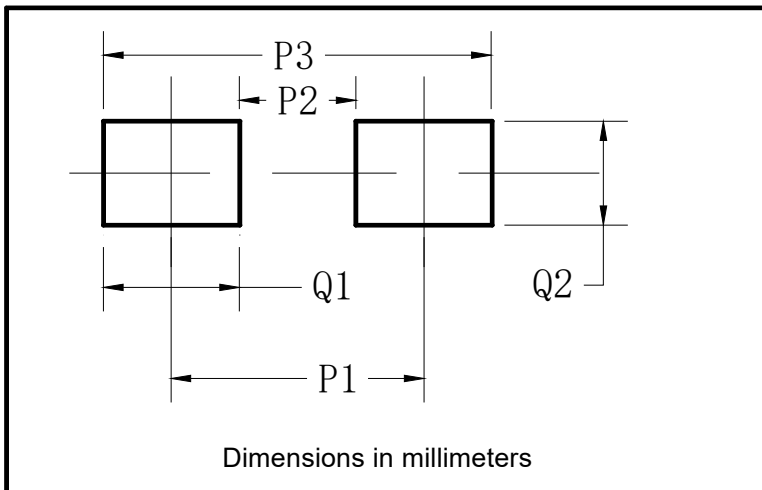


DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.25	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.08	0.20
H	0.15	0.31



GR1A THRU GR1M

■ Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



GR1A THRU GR1M

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