

Surface Mount Super Fast Recovery Rectifier



Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super 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:** SMAF
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	U1AF	U1BF	U1CF	U1DF	U1FF	U1GF	U1HF	U1JF
Device marking code			U1AF	U1BF	U1CF	U1DF	U1FF	U1GF	U1HF	U1JF
Repetitive peak reverse voltage	VRRM	V	50	100	150	200	300	400	500	600
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	U1AF	U1BF	U1CF	U1DF	U1FF	U1GF	U1HF	U1JF
Maximum instantaneous forward voltage drop per diode	VF	V	IFM=1.0A	0.92				1.25		1.7	
Maximum reverse recovery time	tr	ns	IF=0.5A, IR=1.0A, IR=0.25A	25						35	
Maximum DC reverse current at rated DC blocking voltage per diode @ VRM=VRRM	IRRM	µA	Ta=25°C	5.0							
			Ta=125°C	50							



U1AF THRU U1JF

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

PARAMETER	SYMBOL	UNIT	U1AF	U1BF	U1CF	U1DF	U1FF	U1GF	U1HF	U1JF
Typical Thermal resistance	R _{θJ-A}	°C/W	60 ¹⁾							
	R _{θJ-L}	°C/W	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 Cure

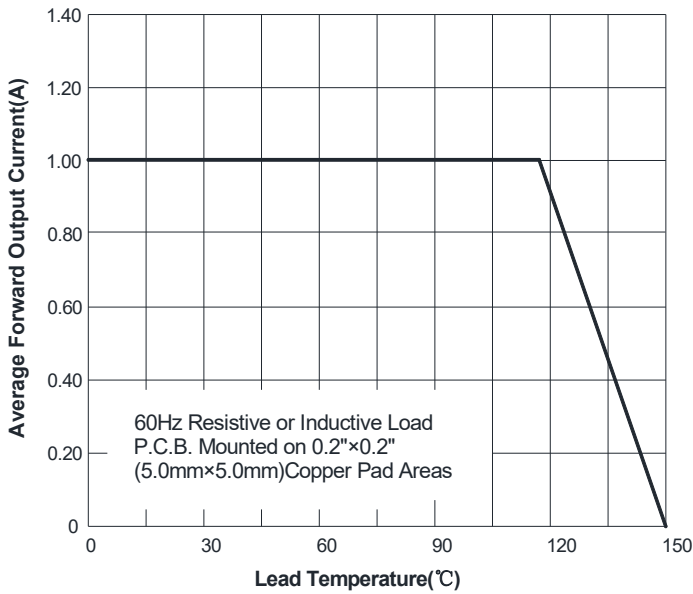


FIG.2: Forward Surge Current Capability

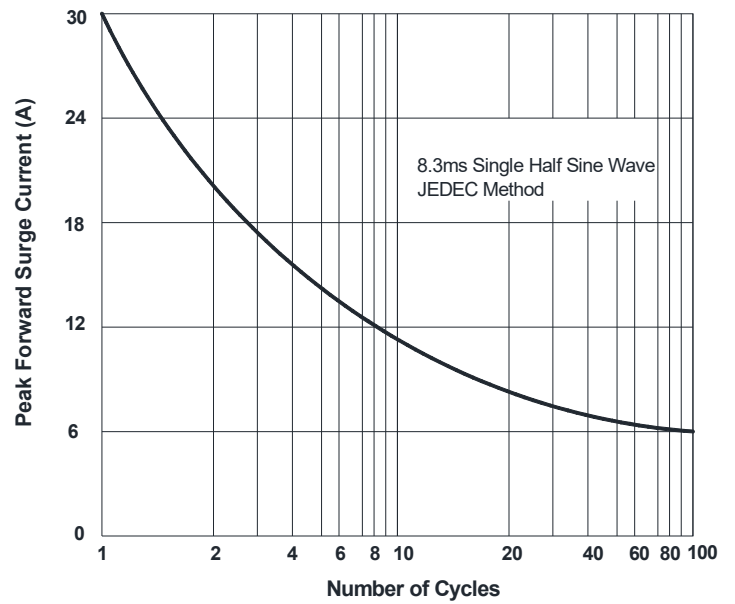


FIG.3: Typical Forward Characteristics

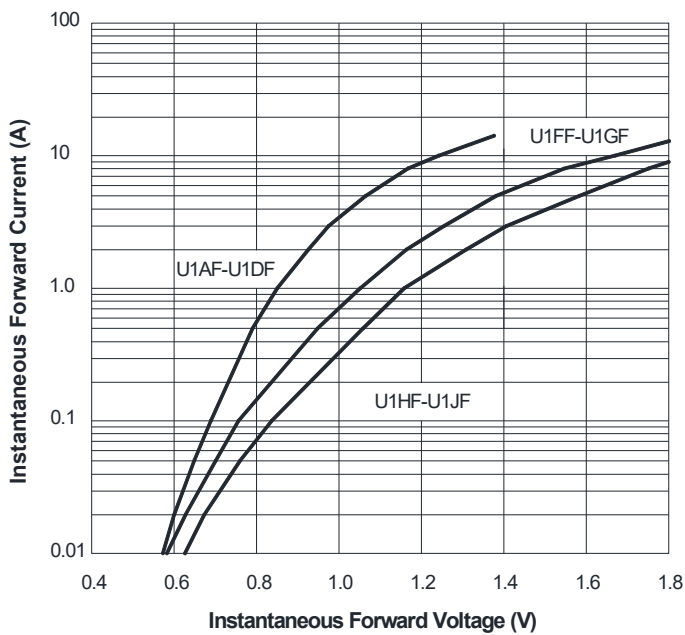


FIG.4: Typical Reverse Characteristics

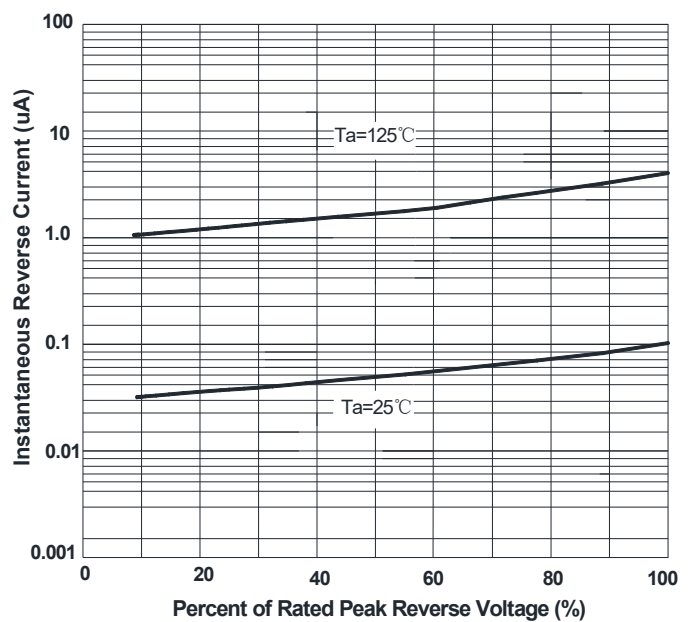
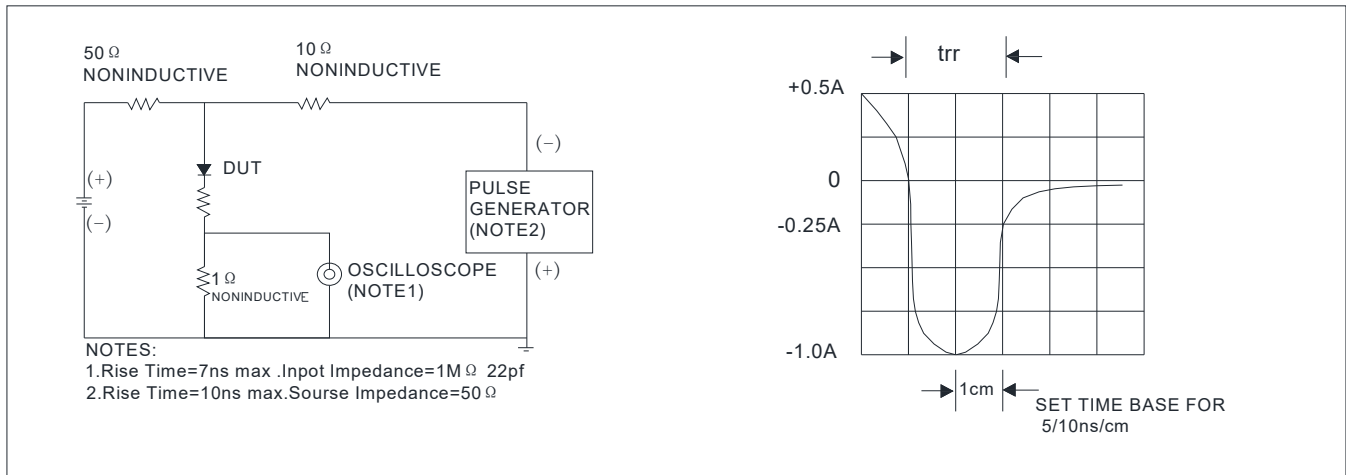


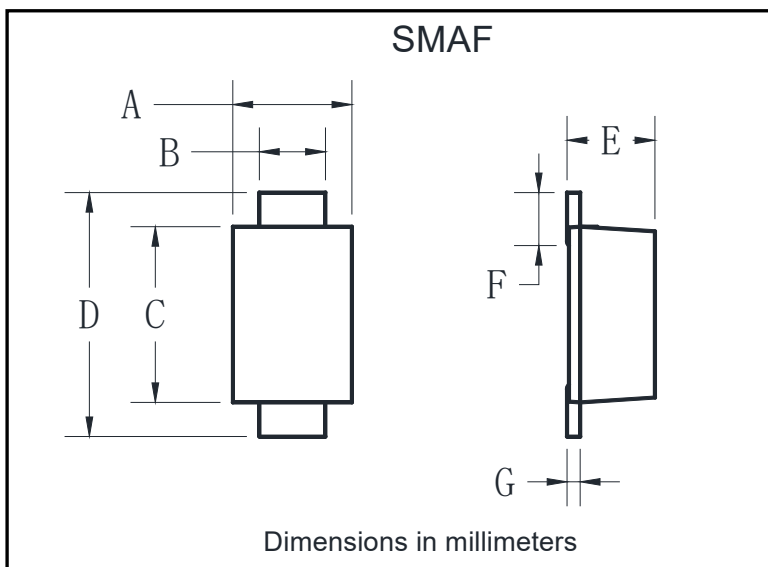
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
U1AF-U1JF	F1	Approximate 0.034	3000	12000	96000	7" reel
U1AF-U1JF	F2	Approximate 0.034	10000	20000	160000	13" reel
U1AF-U1JF	F3	Approximate 0.034	10000	20000	120000	13" reel
U1AF-U1JF	F4	Approximate 0.034	7500	15000	120000	13" reel

Outline Dimensions

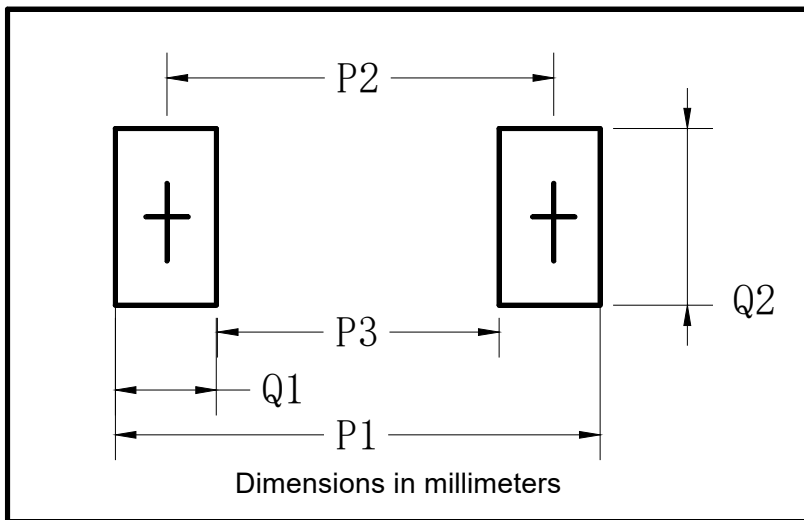


SMAF		
Dim	Min	Max
A	2.40	2.80
B	1.35	1.45
C	3.40	3.60
D	4.40	4.80
E	1.05	1.25
F	0.50	1.00
G	0.15	0.22



U1AF THRU U1JF

■ Suggested pad layout



SMAF	
Dim	Millimeters
P1	6.50
P2	4.00
P3	1.50
Q1	2.50
Q2	1.70



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