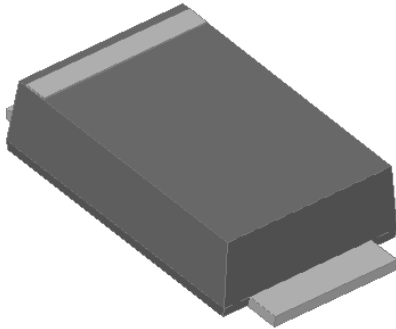


## Surface Mount Super Fast Recovery Rectifier

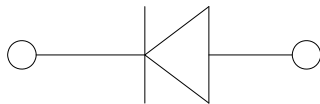


### Features

- 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	U2DF
Device marking code			U2DF
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	V	200
Maximum RMS Voltage	$V_{RMS}$	V	140
Maximum DC blocking Voltage	$V_{DC}$	V	200
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	$I_o$	A	2.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, Tj=25°C	$I_{FSM}$	A	65
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			130
Current squared time @1ms≤t≤8.3ms Tj=25°C	$I^2t$	A <sup>2</sup> s	17.53
Storage temperature	$T_{stg}$	°C	-55 ~ +175
Junction temperature	$T_j$	°C	-55 ~ +175



# U2DF

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	U2DF
Maximum instantaneous forward voltage	V <sub>F</sub>	V	I <sub>FM</sub> =1.0A	0.93
Maximum reverse recovery time	t <sub>rr</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A	25
Maximum DC reverse current at rated DC blocking voltag	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5.0
			T <sub>j</sub> =125°C	50
Typical junction capacitance	C <sub>j</sub>	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	27

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

PARAMETER	SYMBOL	UNIT	U2DF
Typical Thermal resistance	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	75
	R <sub>θJ-L</sub> <sup>(1)</sup>		25
	R <sub>θJ-C</sub> <sup>(1)</sup>		10

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<sub>o</sub>-TL Cure

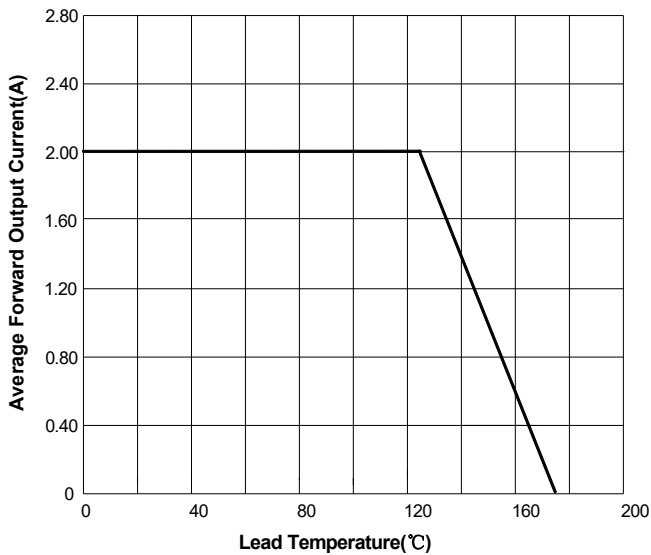


FIG.2: Forward Surge Current Capability

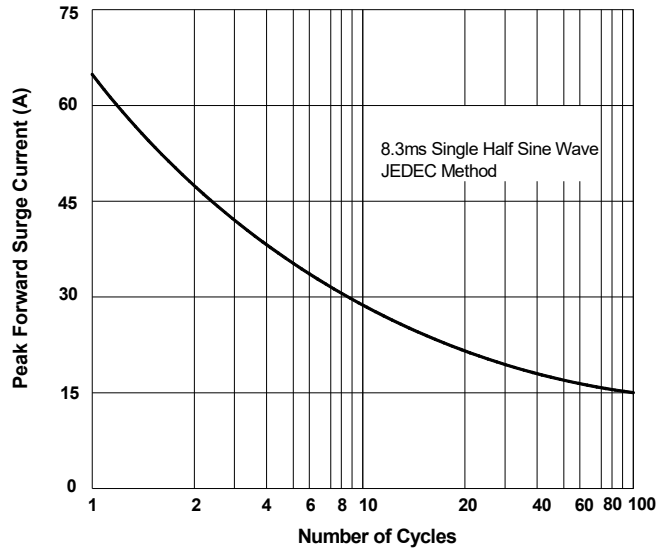


FIG.3: Typical Forward Characteristics

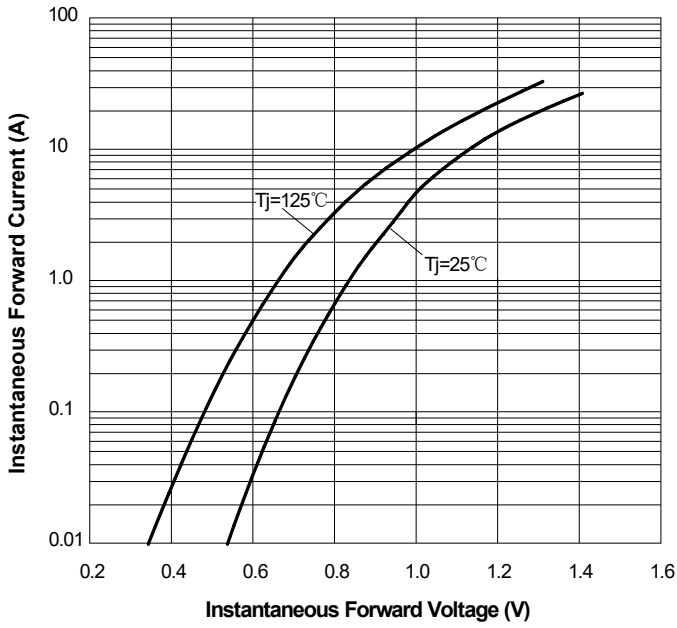


FIG.4: Typical Reverse Characteristics

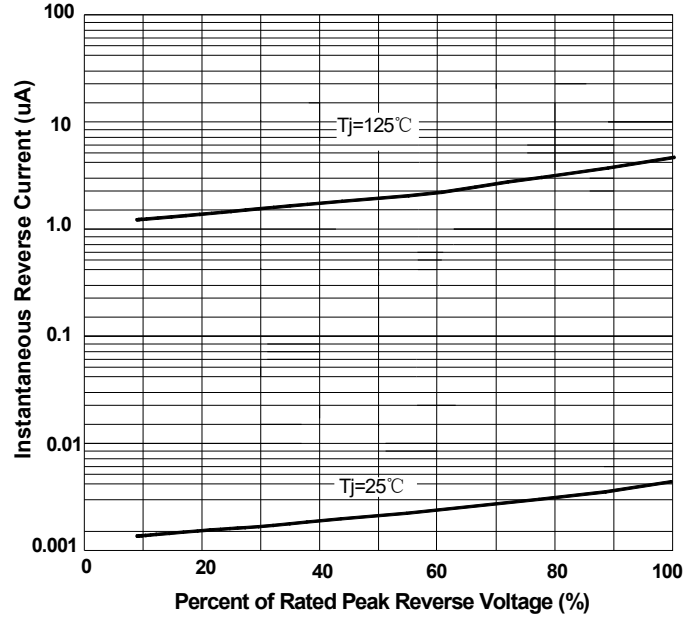
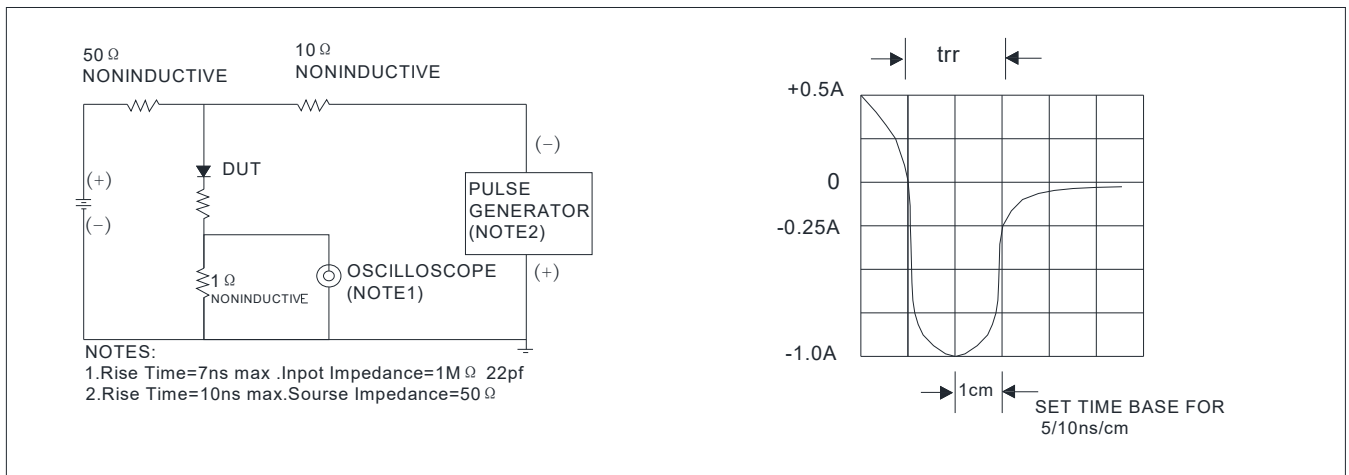


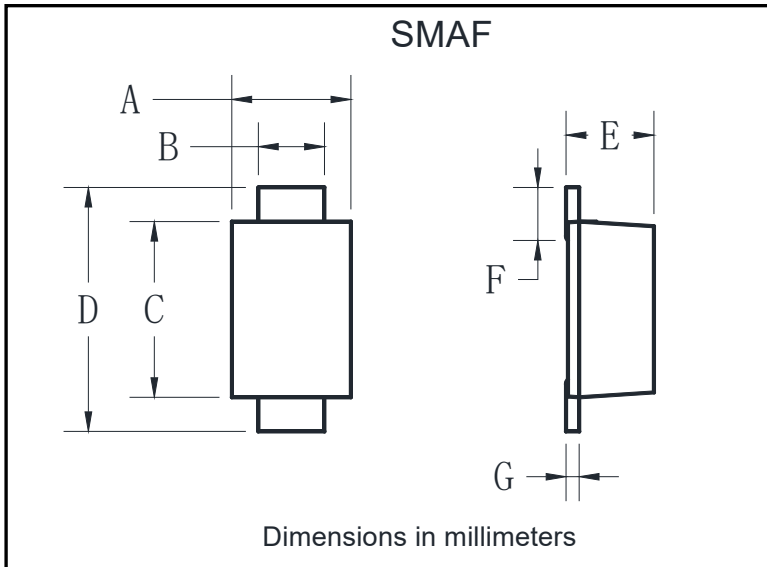
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## Ordering Information (Example)

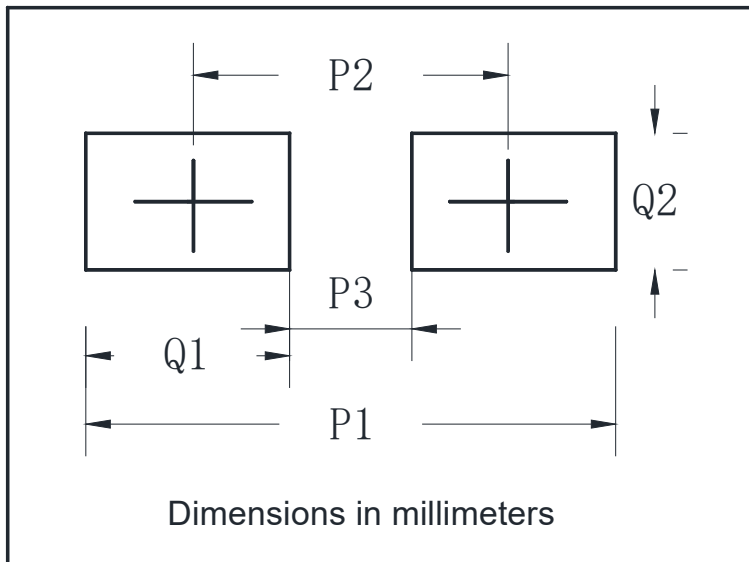
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
U2DF	F1	Approximate 0.034	3000	24000	96000	7" reel
U2DF	F2	Approximate 0.034	10000	/	160000	13" reel
U2DF	F3	Approximate 0.034	10000	/	120000	13" reel
U2DF	F4	Approximate 0.034	7500	/	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

## ■ Suggested pad layout



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



## U2DF

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