

US1AF THRU US1MF



Ultra Fast Recovery Rectifiers

Reverse Voltage: 50 to 1000 Volts

Forward Current: 1.0 Ampere

RoHS Device

Halogen Free



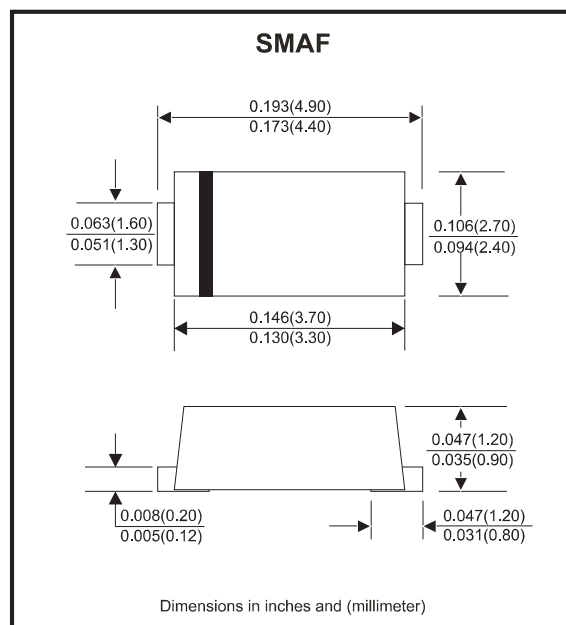
Features

- For surface mounted applications.
- Low profile package.
- Glass passivated chip junction.
- Easy to pick and place.
- High efficiency.

Mechanical data

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, method 2026.

Circuit Diagram



Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20%

Parameter	Symbols	US1AF	US1BF	US1DF	US1GF	US1JF	US1KF	US1MF	Units
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at T _c =125°C	I _{F(AV)}	1							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	30							A
Max. instantaneous forward voltage at 1A	V _F	1.0			1.3	1.65			V
Maximum DC reverse current at rated DC blocking voltage T _a = 25°C T _a =125°C	I _R	5 100							μA
Maximum reverse recovery time (Note 1)	t _{rr}	50				75			ns
Typical thermal resistance (Note 2)	R _{θJA}	75							°C/W
Typical junction capacitance (Note 3)	C _j	15							pF
Operating and storage temperature range	T _j , T _{stg}	-55 ~ +150							°C

Notes: 1. Measured with $I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{rr} = 0.25\text{A}$.

2. P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

3. Measured at 1 MHz and applied reverse voltage of 4 V D.C

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Rating and Characteristic Curves

Fig.1 - Forward Current Derating Curve

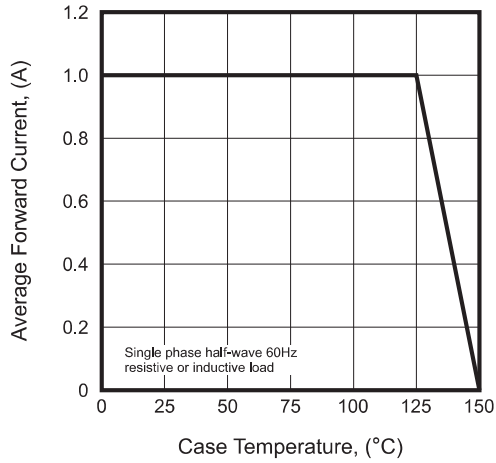


Fig.2 - Typical Reverse Characteristics

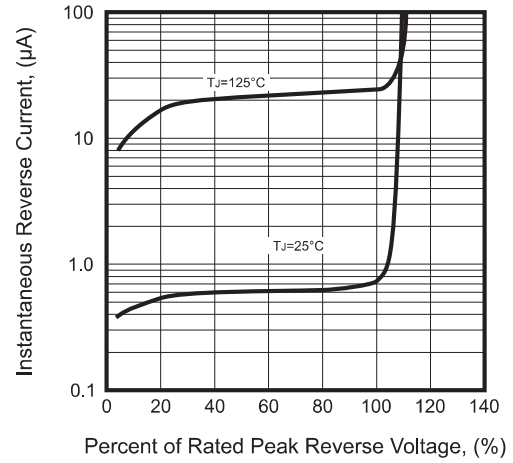


Fig.3 - Typical Forward Characteristic

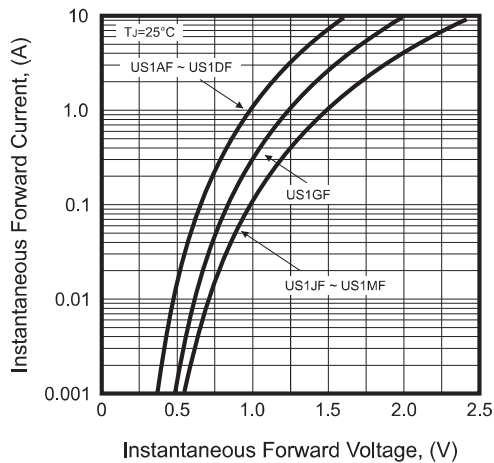


Fig.4 - Maximum Non-Repetitive Peak Forward Surge Current

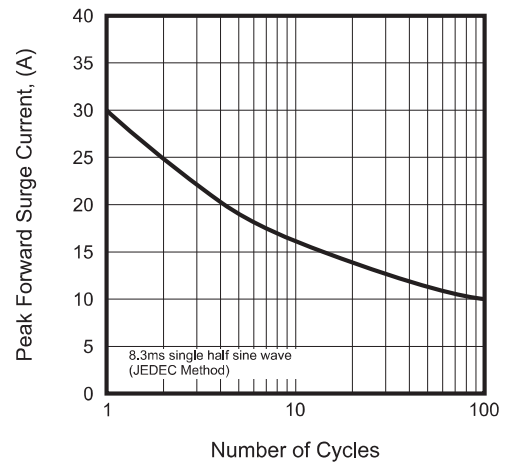


Fig.5 - Typical Transient Thermal Impedance

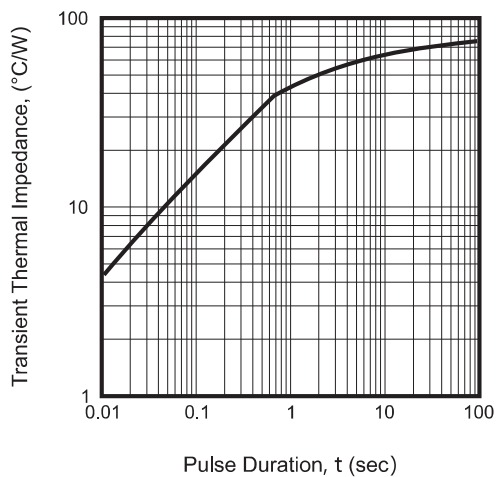
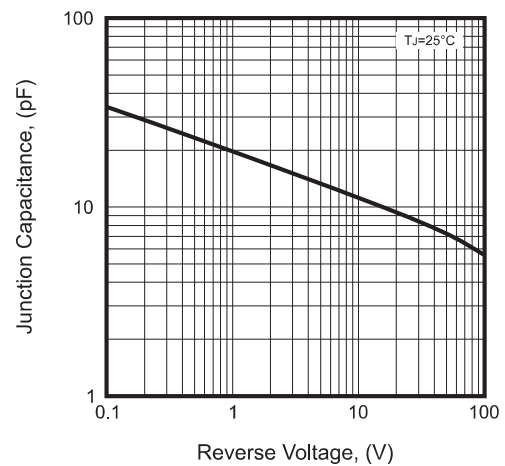
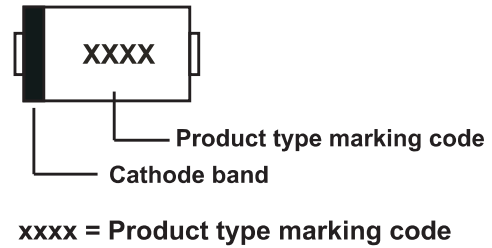


Fig.6 - Typical Junction Capacitance



Marking Code

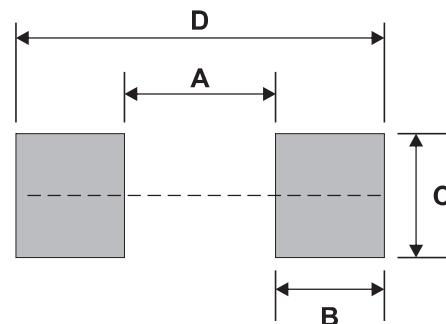
Part Number	Marking Code
US1AF	US1A
US1BF	US1B
US1DF	US1D
US1GF	US1G
US1JF	US1J
US1KF	US1K
US1MF	US1M



Suggested PAD Layout

SIZE	SMAF	
	(mm)	(inch)
A	2.20	0.087
B	1.60	0.063
C	1.80	0.071
D	5.40	0.213

Note: 1. The pad layout is for reference purpose only.



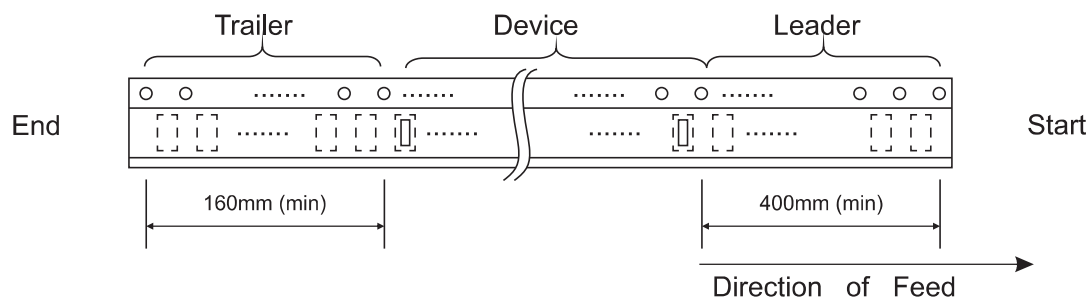
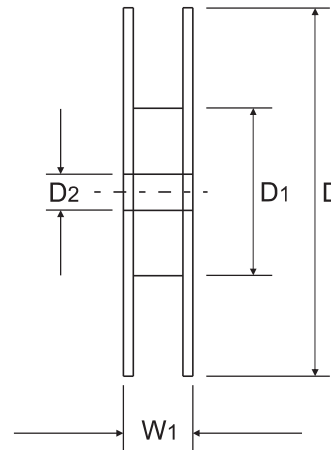
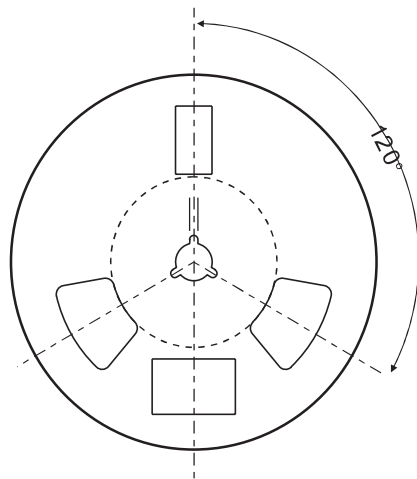
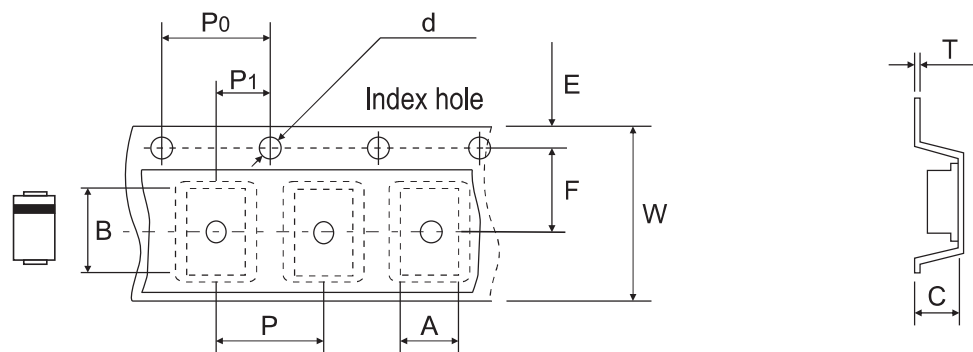
Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SMAF	10,000	13

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Reel Taping Specification



SMAF	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	2.93 ± 0.10	5.33 ± 0.10	1.33 ± 0.10	1.55 ± 0.05	330 ± 2.00	75.00 ± 1.00	13.00 ± 0.20
	(inch)	0.115 ± 0.004	0.210 ± 0.004	0.052 ± 0.004	0.061 ± 0.002	12.992 ± 0.079	2.953 ± 0.039	0.512 ± 0.008

SMAF	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.73 ± 0.10	5.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 ± 0.03	12.00 ± 0.30	$14.70 + 2.00 - 1.00$
	(inch)	0.068 ± 0.004	0.217 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 ± 0.001	0.472 ± 0.012	$0.579 + 0.079 - 0.039$

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