

ES3AF THRU ES3JF



Super Fast Recovery Rectifiers

Reverse Voltage: 50 to 600 Volts

Forward Current: 3.0 Ampere

RoHS Device

Halogen Free



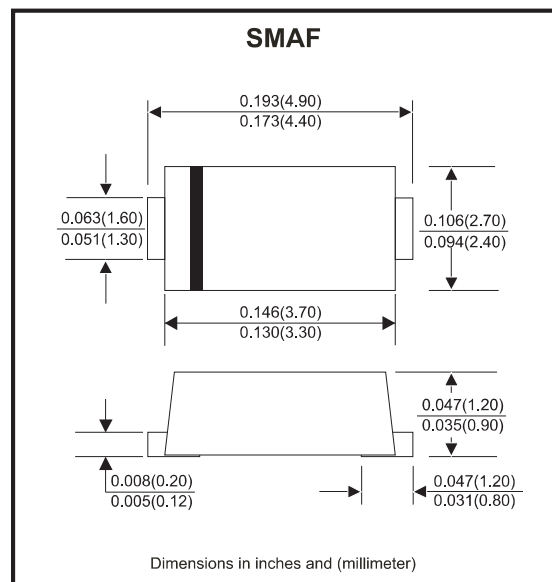
Features

- For surface mounted applications.
- Low profile package.
- Glass passivated chip junction.
- Super fast reverse recovery time.

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	ES3AF	ES3BF	ES3CF	ES3DF	ES3EF	ES3GF	ES3JF	Units
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current at T _c =125°C	I _{F(AV)}	3							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	80							A
Max. forward voltage at 3A	V _F	1.0				1.25		1.68	V
Maximum DC reverse current at rated DC blocking voltage T _a = 25°C T _a =125°C	I _R	5 100							μA
Typical junction capacitance at V _R = 4V, f = 1MHz	C _j	40							pF
Maximum reverse recovery time (Note 1)	t _{rr}	35							ns
Typical thermal resistance (Note 2)	R _{θJA} R _{θJC}	50 16							°C/W
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.

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Rev:1.0

Rating and Characteristic Curves

Fig.1 - Max. Average Forward Current Rating

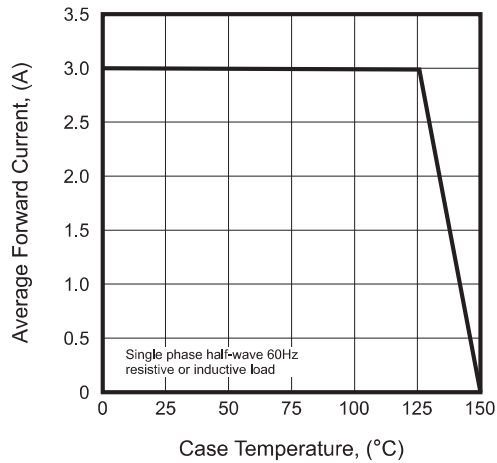


Fig.2 - Typical Reverse Characteristics

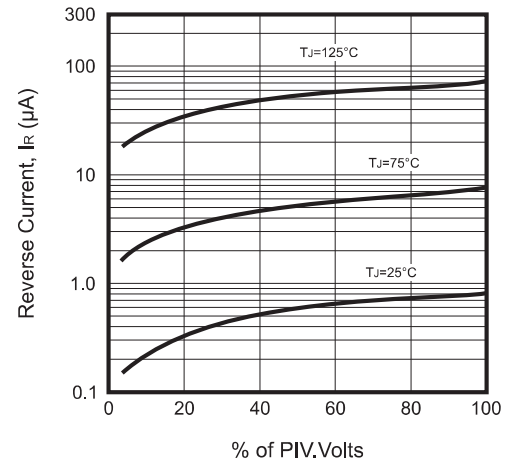


Fig.3 - Typical Forward Characteristic

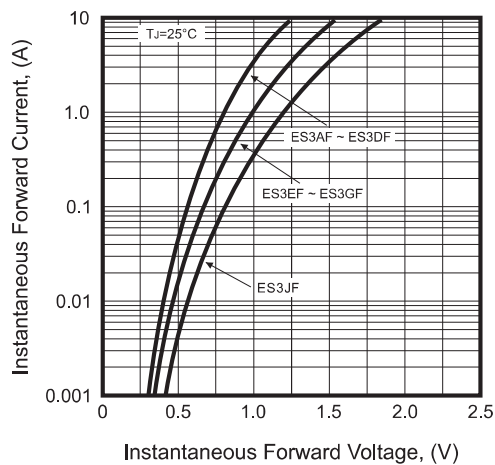


Fig.4 - Typical Junction Capacitance

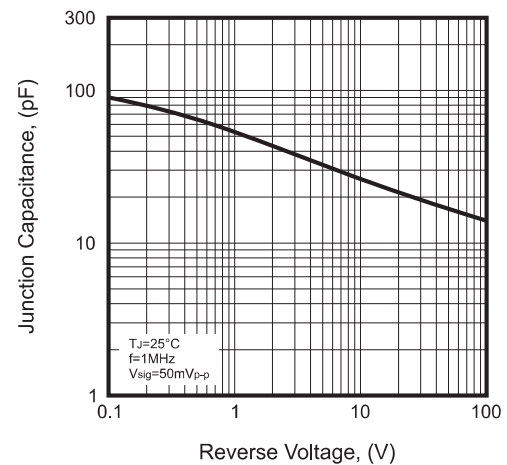
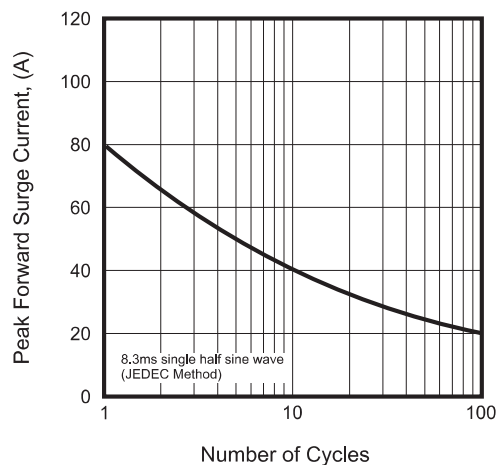
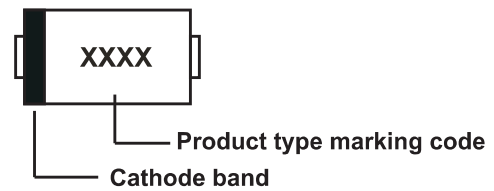


Fig.5 - Maximum Non-Repetitive Peak Forward Surge Current



Marking Code

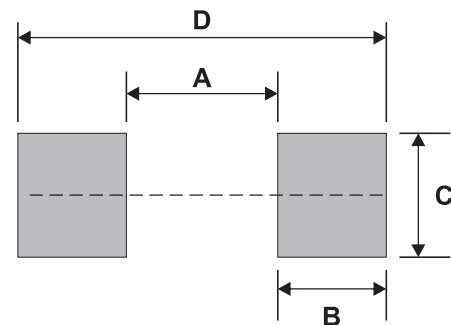
Part Number	Marking Code
ES3AF	ES3A
ES3BF	ES3B
ES3CF	ES3C
ES3DF	ES3D
ES3EF	ES3E
ES3GF	ES3G
ES3JF	ES3J



xxxx = Product type marking code

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.

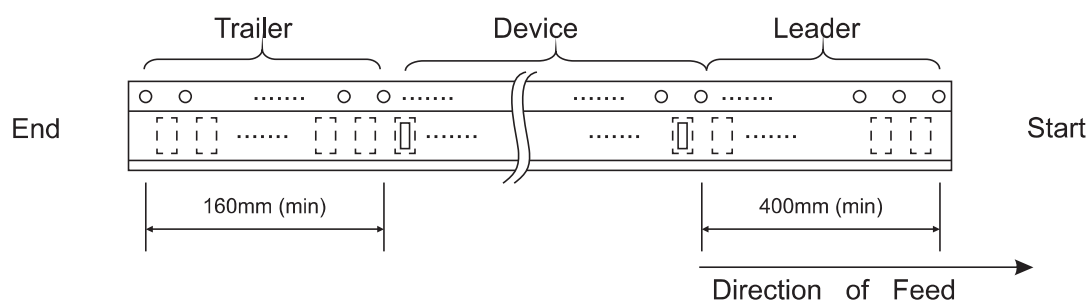
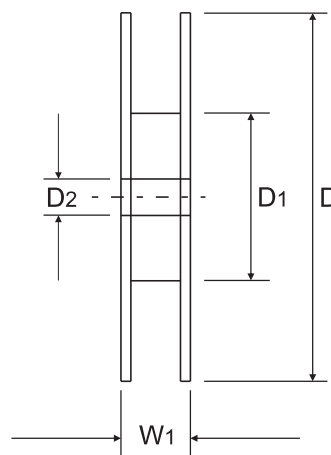
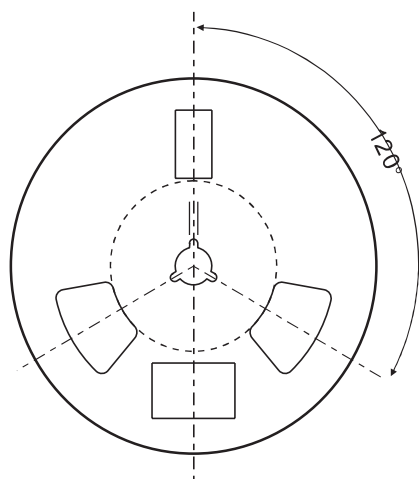
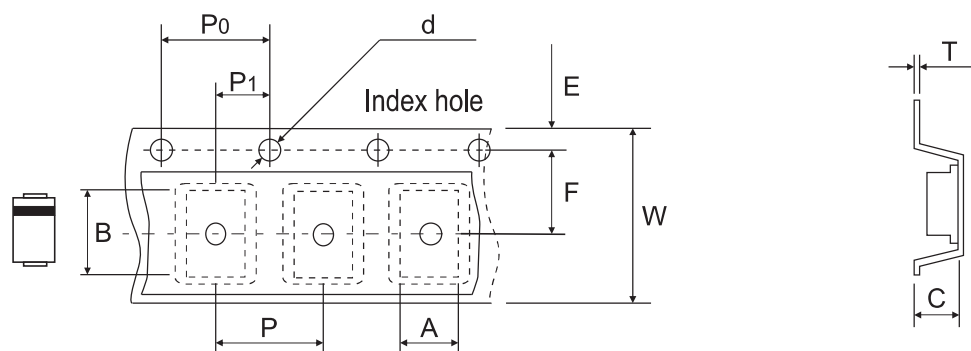
Standard Packaging

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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