

ES5ABF THRU ES5JBF



Super Fast Recovery Rectifiers

Reverse Voltage: 50 to 600 Volts

Forward Current: 5.0 Ampere

RoHS Device

Halogen Free



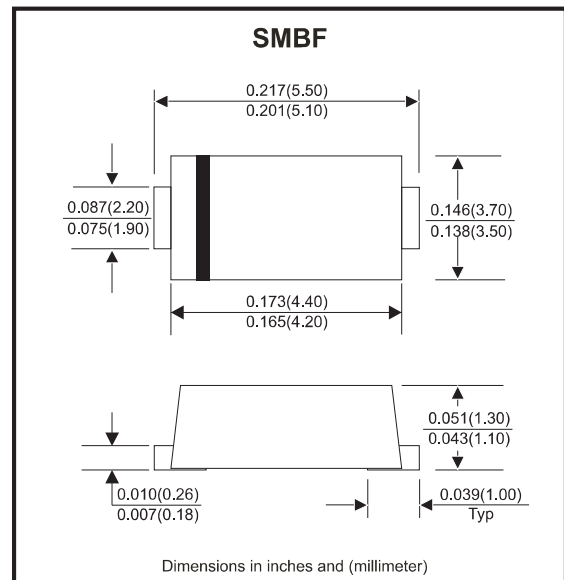
Features

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

Mechanical data

- Case: SMBF
- 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	ES5ABF	ES5BBF	ES5CBF	ES5DBF	ES5EBF	ES5GBF	ES5JBF	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 $T_c = 115^\circ\text{C}$	$I_{F(AV)}$	5							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	150							A
Max. forward voltage at 5A	V_F	1.0				1.3	1.7		V
Maximum DC reverse current at rated DC blocking voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	I_R	10 100							μA
Typical junction capacitance at $V_R = 4\text{V}$, $f = 1\text{MHz}$	C_j	50							pF
Maximum reverse recovery time (Note 1)	t_{rr}	35							ns
Typical thermal resistance (Note 2)	$R_{\theta JA}$ $R_{\theta JC}$	45 15							$^\circ\text{C/W}$
Operating and storage temperature range	T_j , T_{stg}	$-55 \sim +150$							$^\circ\text{C}$

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

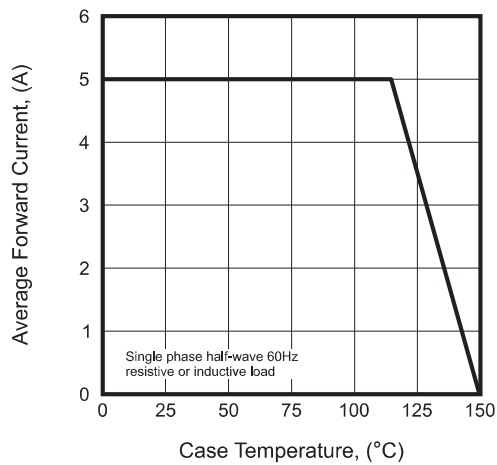


Fig.2 - Typical Reverse Characteristics

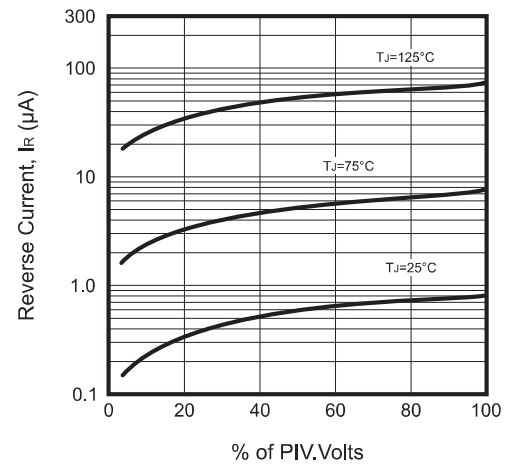


Fig.3 - Typical Forward Characteristic

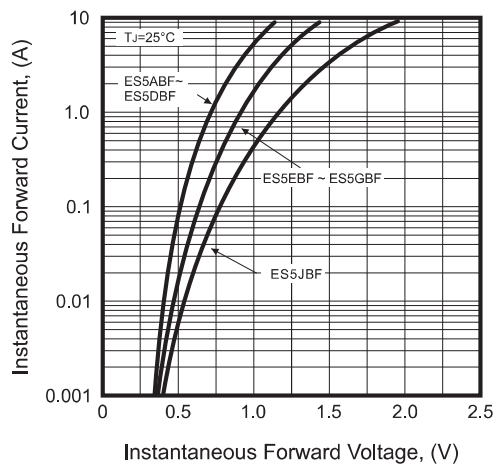


Fig.4 - Typical Junction Capacitance

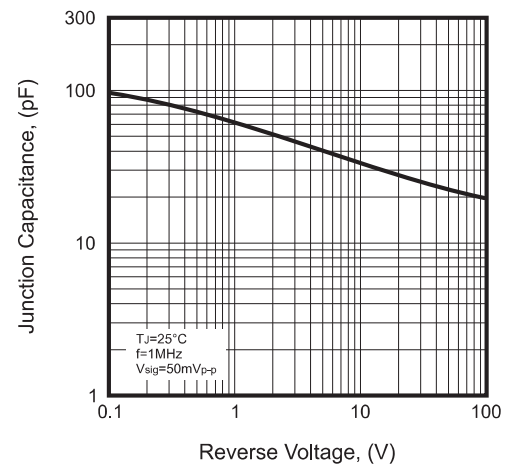
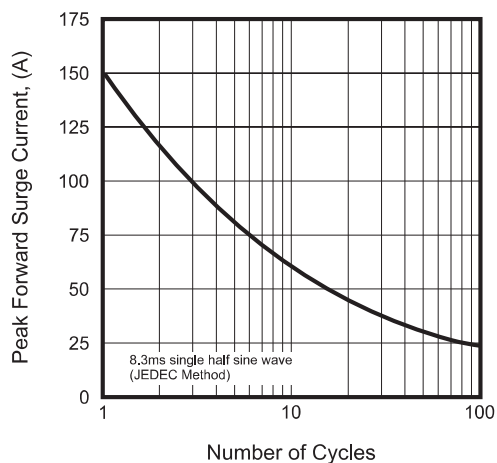
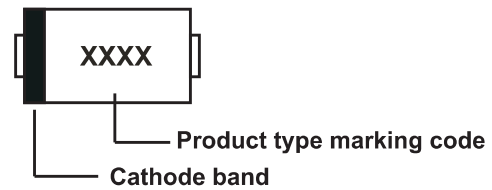


Fig.5 - Maximum Non-Repetitive Peak Forward Surge Current



Marking Code

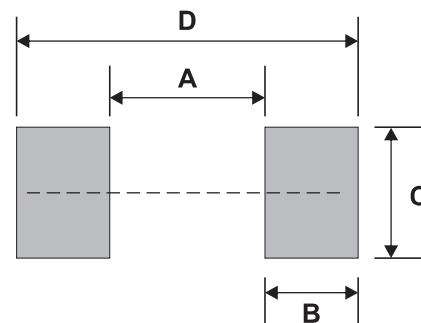
Part Number	Marking Code
ES5ABF	ES5A
ES5BBF	ES5B
ES5CBF	ES5C
ES5DBF	ES5D
ES5EBF	ES5E
ES5GBF	ES5G
ES5JBF	ES5J



xxxx = Product type marking code

Suggested PAD Layout

SIZE	SMBF	
	(mm)	(inch)
A	3.00	0.118
B	1.80	0.071
C	2.54	0.100
D	6.60	0.260



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

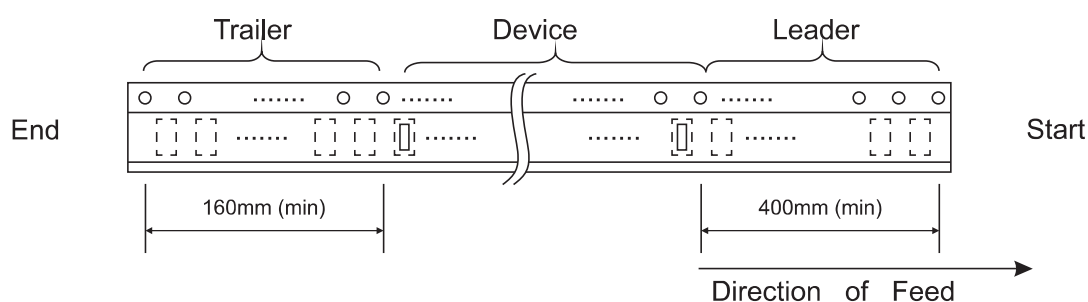
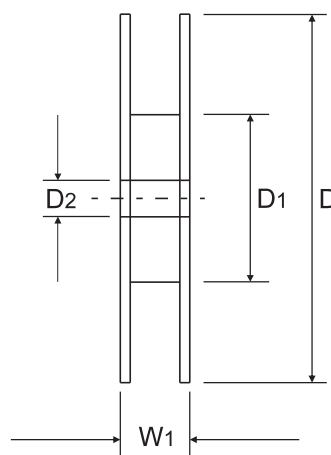
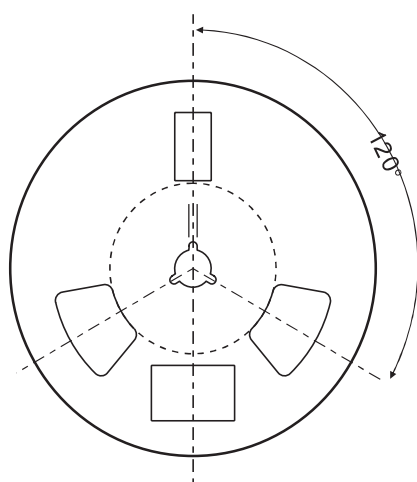
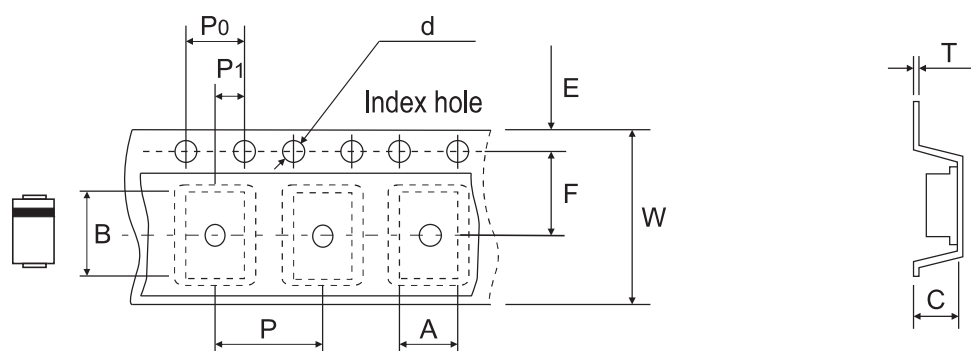
Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SMBF	5,000	13

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Reel Taping Specification



SMBF	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.80 ± 0.10	$5.50 + 0.05$ $- 0.10$	2.45 ± 0.05	1.55 ± 0.05	330 ± 2.00	100 ± 1.00	13.00 ± 0.20
	(inch)	0.150 ± 0.004	$0.217 + 0.002$ $- 0.004$	0.096 ± 0.002	0.061 ± 0.002	12.992 ± 0.079	3.937 ± 0.039	0.512 ± 0.008

SMBF	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.25 ± 0.05	12.00 ± 0.15	$18.00 + 2.00$ $- 1.00$
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.010 ± 0.002	0.472 ± 0.006	$0.709 + 0.079$ $- 0.039$

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