

# Surface Mount Superfast Recovery Rectifier

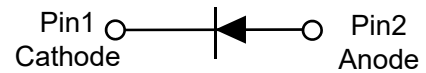
## Feature

- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives


**SMBF (Top View)**

## Mechanical Characteristics

- Case: SMBF
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg /0.002oz


**Circuit Diagram**

## Maximum Ratings and Electrical characteristics

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbol	PES5A BF	PES5B BF	PES5C BF	PES5D BF	PES5E BF	PES5G BF	PES5J BF	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 $T_c=115^\circ\text{C}$	$I_{F(AV)}$	5.0							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	150							A
Maximum Forward Voltage at 5 A	$V_F$	1.0				1.25		1.7	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_a=25^\circ\text{C}$	10							$\mu\text{A}$
	$T_a=125^\circ\text{C}$	100							
Typical Junction Capacitance at $V_R=4\text{V}, f=1\text{MHz}$	$C_J$	50							pF
Maximum Reverse Recovery Time <sup>1)</sup>	$t_{rr}$	35							ns
Typical Thermal Resistance <sup>2)</sup>	$R_{\theta JA}$	40							$^\circ\text{C/W}$
	$R_{\theta JC}$	12							
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55~+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.

## Typical Characteristics

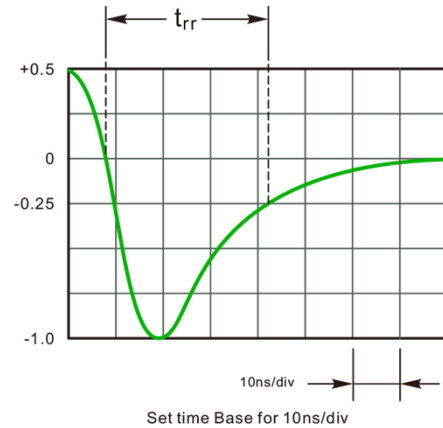
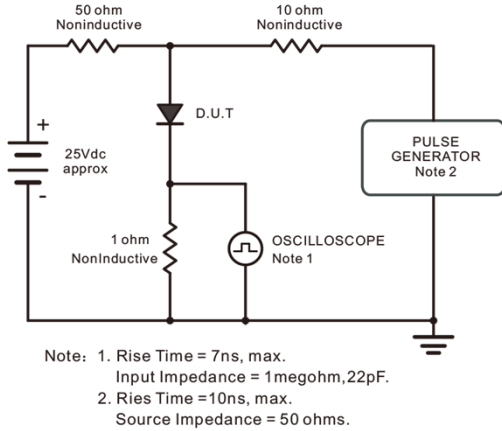


Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram

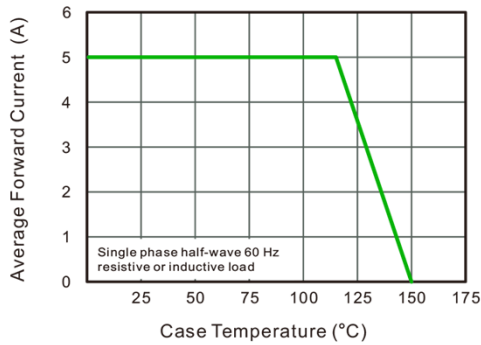


Fig.2 Maximum Average Forward Current Rating

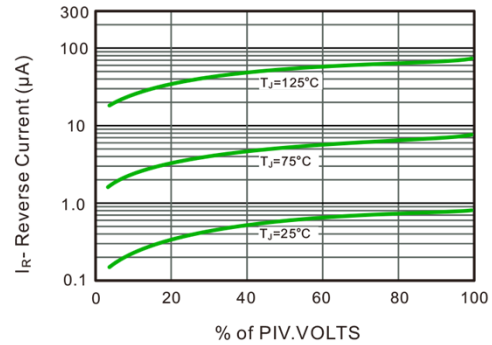


Fig.3 Typical Reverse Characteristics

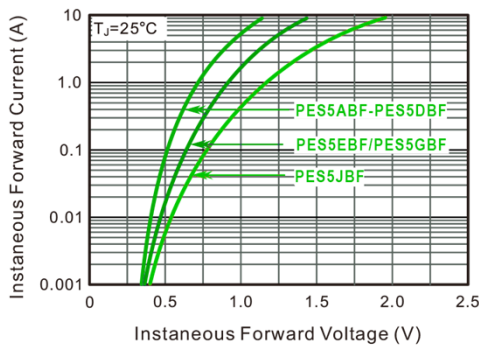


Fig.4 Typical Forward Characteristics

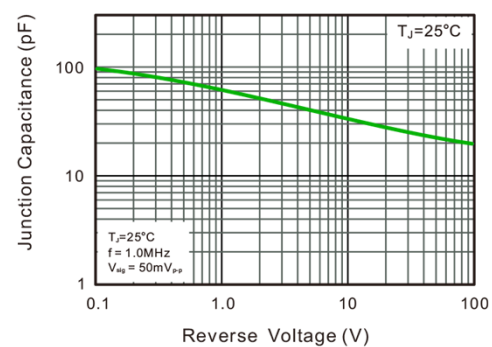


Fig.5 Typical Junction Capacitance

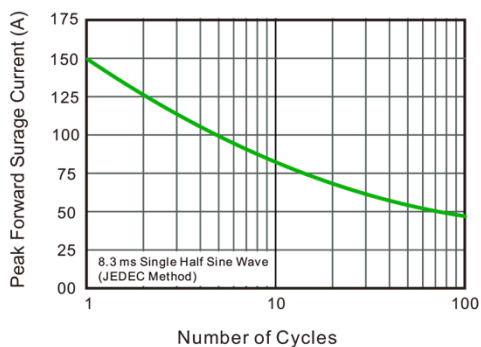
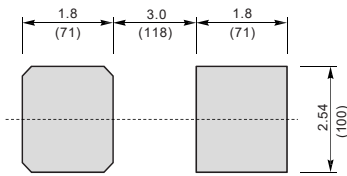
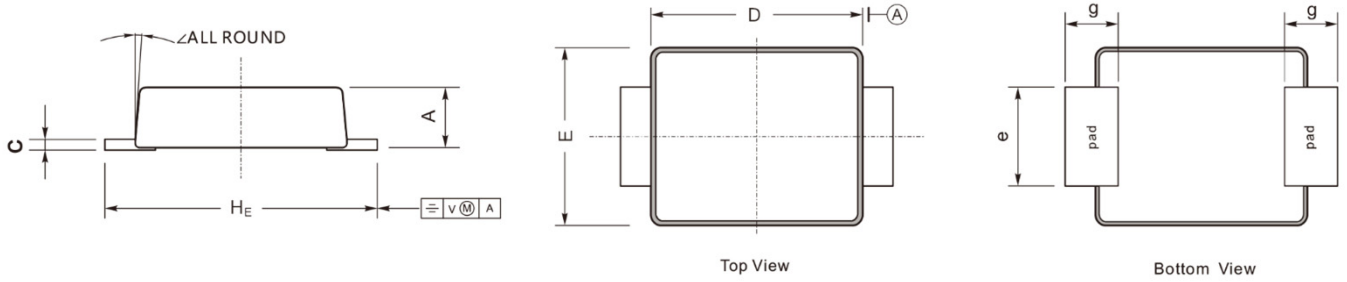


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

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# PES5ABF~PES5JBF

## Product Dimension (SMBF)



Suggested PCB Layout

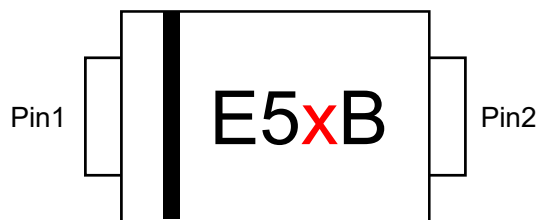
Unit: mm

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.10	1.30	0.043	0.051
C	0.18	0.26	0.007	0.010
D	4.20	4.40	0.165	0.173
E	3.50	3.70	0.138	0.146
$H_E$	5.10	5.50	0.201	0.217
e	1.90	2.20	0.075	0.087
g	1.00		0.039	
$\angle$	9°		9°	

## Ordering information

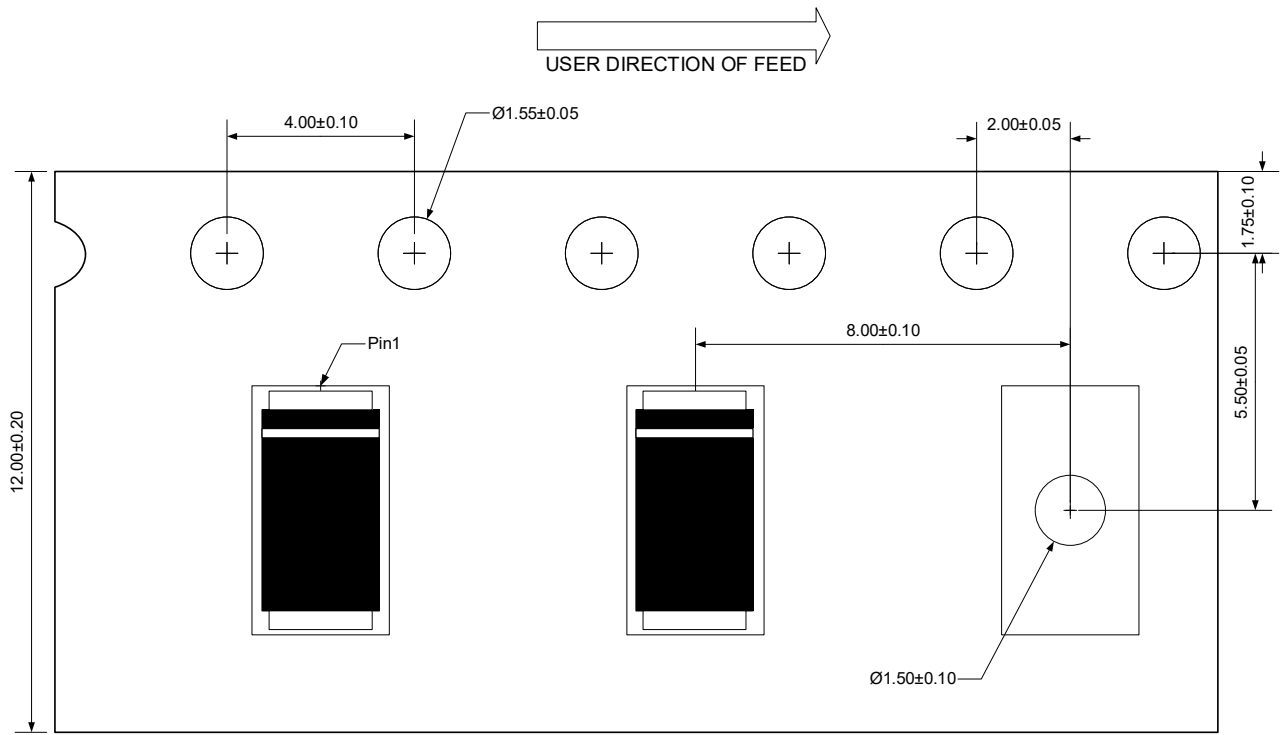
Device	Package	Reel	Shipping
PES5ABF~PES5JBF	SMBF	13"	5000 / Tape & Reel

## Marking information




Device	Marking
PES5ABF	E5AB
PES5BBF	E5BB
PES5CBF	E5CB
PES5DBF	E5DB
PES5EBF	E5EB
PES5GBF	E5GB
PES5JBF	E5JB

Load with information



Unit:mm


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