



PFC Device Corporation

P5V45BF

5A 45V MOS Schottky Rectifier

Major ratings and characteristics

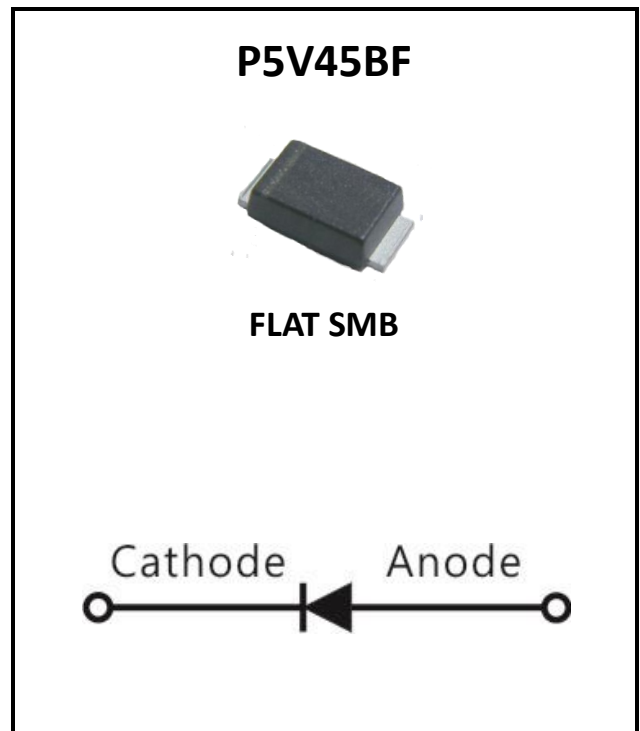
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	5	A
V_{RRM}	45	V
$V_F@ 5A, T_j=125^\circ C$	0.36	V, typ.
T_j Operating Junction Temperature	-65 to +150	$^\circ C$

Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150 $^\circ C$ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb)

Typical Applications

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications



1. Characteristics

Maximum Ratings Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	V_{RM}	45	Volts
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle	I_o	5	Amps
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	120	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	2	Amps
Typical Thermal Resistance (Note 1)	$R\theta_{JC}$	30	$^\circ\text{C} / \text{W}$
Maximum Rate of Voltage Change (at Rated VR)	dv/dt	10000	$\text{V}/\mu\text{S}$
Operating Junction Temperature	T_J	- 65 to +150	$^\circ\text{C}$
Storage Junction Temperature	T_{STG}	- 65 to +150	

Note 1: FR-4 PCB, 2 oz Copper. Minimum recommended pad layout

Electrical Characteristics - (per leg) ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 5 A	$T_J = 25^\circ\text{C}$	V_F^*	----	0.46	Volts
		$T_J = 125^\circ\text{C}$		0.36	0.40	
Instantaneous Reverse Current	At V_{RM}	$T_J = 25^\circ\text{C}$	I_R^*	----	500	μA
		$T_J = 125^\circ\text{C}$		----	100	mA

* Pulse width < 300 μS , Duty cycle < 2%



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

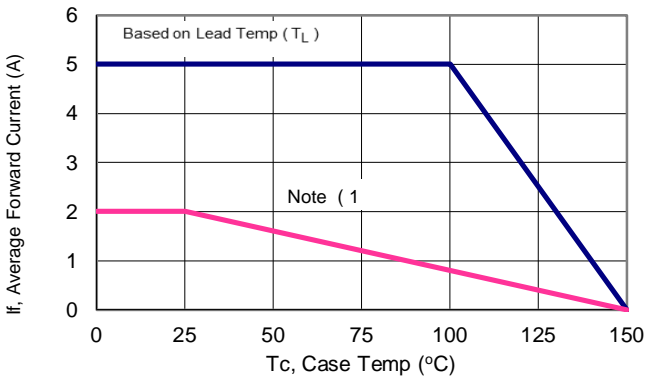


Figure 1: Current Derating, Case

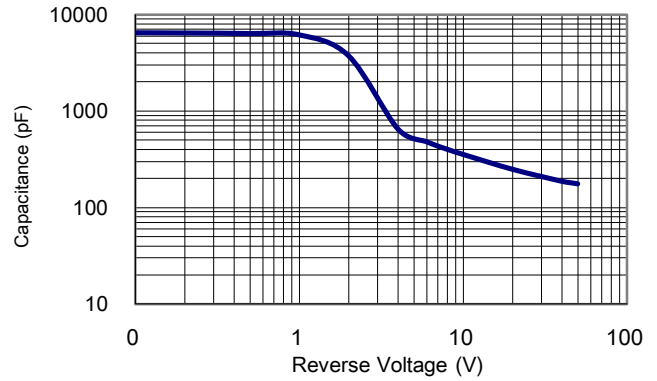


Figure 2: Typical Junction Capacitance

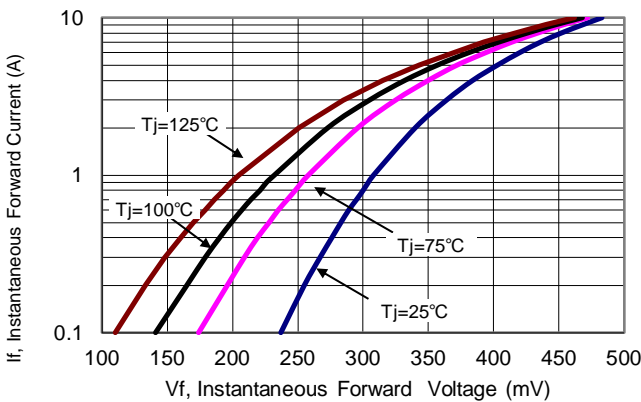


Figure 3: Typical Forward Voltage

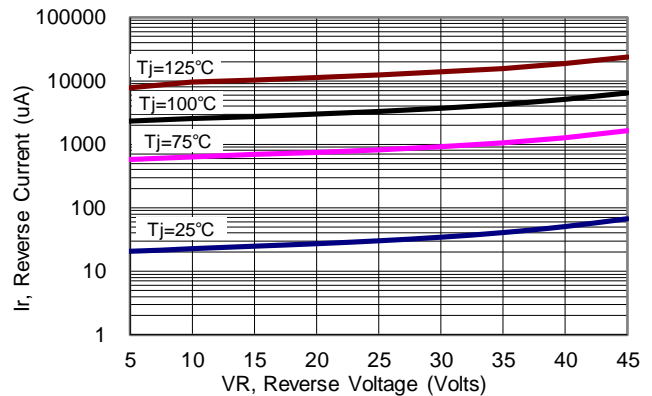


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule



P5V45B= Product Type Marking Code

A = Assembly code

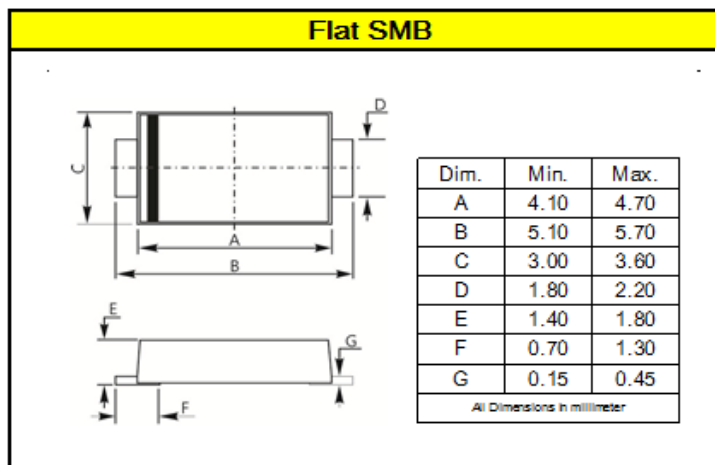
Y = Last one digits of year

M = Month code

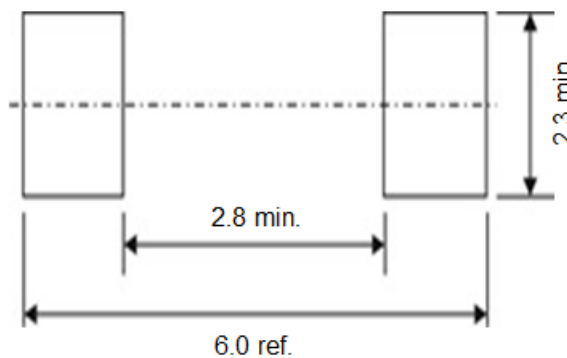
S = Series Number

4. Package information

Suggested Package Outline Dimensions millimeters

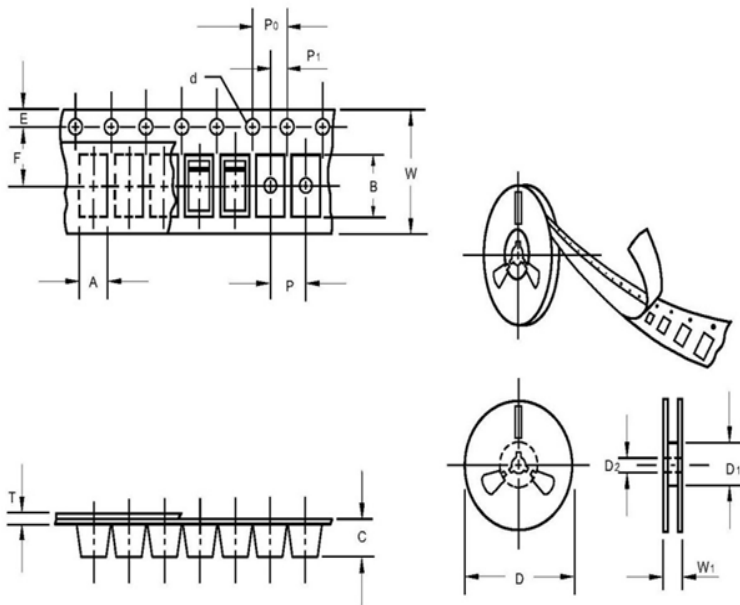


Mounting pad Outline Dimensions millimeters



5. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	A	3.81±0.15
Carrier length	B	5.74±0.15
Carrier depth	C	2.24±0.15
Sprocket hole	d	1.50±0.10
Reel outside diameter	D	330.0±1.0
Reel inner diameter	D1	50min.
Feed hole diameter	D2	13.5±1.0
Sprocket hole position	E	1.75±0.10
Punch hole position	F	5.5±0.05
Punch hole pitch	P	8.0±0.10
Sprocket hole pitch	P0	4.0±0.10
Embossment center	P1	2.0±0.10
Total tape thickness	T	0.25±0.10
Tape width	W	12.0±0.3
Reel width	W1	18.1±1.5

Ordering information

Part Number	Package	Base Quantity	Delivery mode
P5V45BF	Flat SMB	4000	13" diameter plastic tape and reel

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.0025 ounces (0.072grams) – Flat SMB

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