

# P5V45SP

# PFC Device Corporation

## 5A 45V MOS Schottky Rectifier

## Major ratings and characteristics

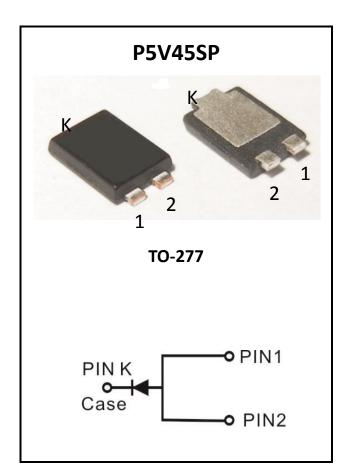
Characteristics	Values	Units	
I <sub>F(AV)</sub> Rectangular	5	А	
Waveform	C		
V <sub>RRM</sub>	45	V	
V <sub>F</sub> @ 5A <i>,</i> Tj=125 <sup>°</sup> C	0.4	V, typ.	
T <sub>J</sub> Operating Junction	65 to 1150	°C	
Temperature	-65 to +150	Ľ	

### Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150°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 <sub>A</sub> = 25 <sup>o</sup> C unless otherwise specified )
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Parameter	Symbol	Values	Units
DC Blocking Voltage	V <sub>RM</sub>		
Working Peak Reverse Voltage	V <sub>RWM</sub>	45	Volts
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>		
Average Rectified Forward Current	Ι <sub>ο</sub>	5	Amps
Peak Forward Surge Current - 1/2 60hz	I <sub>FSM</sub>	100	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I <sub>RRM</sub>	2	Amps
Typical Thermal Resistance			
Thermal Resistance junction to Ambient Note (1)	$R\theta_{JA}$	72	°C / W
Thermal Resistance junction to Ambient Note (2)	$R\theta_{JA}$	30	
Maximum Rate of Voltage Change ( at Rated VR )	dv/dt	10000	V/uS
Operating Junction Temperature	TJ	- 65 to +150	°C
Storage Junction Temperature	T <sub>STG</sub>	- 65 to +150	Ľ

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

Parameter	Test Conditions		Symbol	Тур.	Max.	Units
Instantaneous	IF = 3 A	T <sub>1</sub> = 25 °C		0.39		
Forward Voltage	IF = 5 A	$I_{J} = 25 C$	V/F*		0.48	Valta
	IF = 3 A	T <sub>J</sub> =125 °C	VF*	0.33		Volts
	IF = 5 A	I <sub>J</sub> =125 C		0.40	0.44	
Instantaneous		$T_{J} = 25 ^{\circ}C$ $T_{J} = 125 ^{\circ}C$	10*		300	uA
Reverse Current	At V <sub>RM</sub>		IR*	10	75	mA

\* Pulse width < 300 uS, Duty cycle < 2%

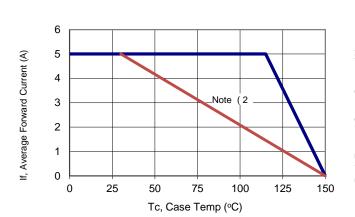
Note 1. FR-4 PCB, 2 oz Copper. Minimum recommended pad layout

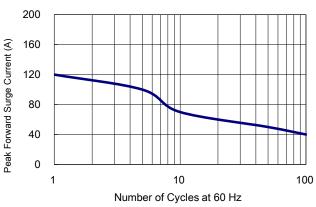
Note 2. Polymide PCB, 2 oz Copper. Cathode pad dimensions 18.8x14.4mm , Anode pad dimensions- (5.6x14.4mm)



#### 2. Characteristics Curves

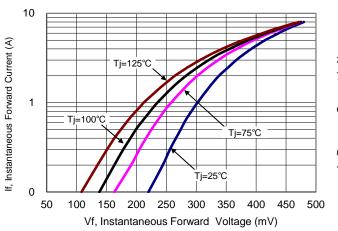
Ratings and Characteristics Curves





(TA =  $25^{\circ}$ C unless otherwise specified)







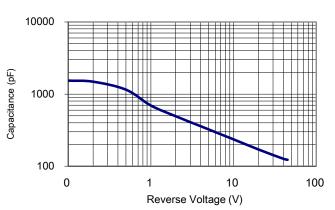
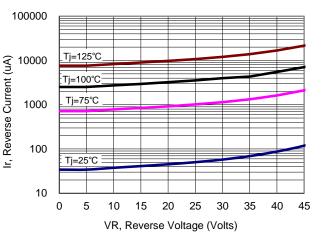


Figure 5: Typical Junction Capacitance



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Figure 2: Maximum Repetitive Surge Current

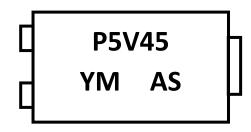


**Figure 4: Typical Reverse Current** 

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### 3. Marking information

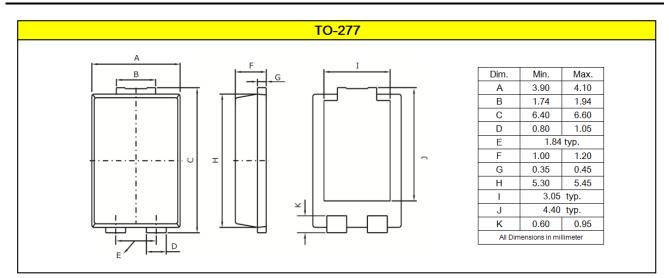
**Top Marking Rule** 



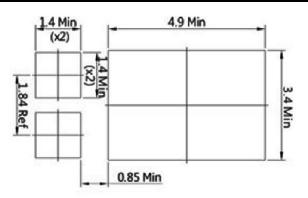
P5V45 = Product Type Marking Code
YM = Date Code
Y = Last one digits of year
M = Month code
A = Assembly Code
S = Series Number

#### 4. Package information

Suggested Package Outline Dimensions millimeters



#### Mounting pad Outline Dimensions millimeters

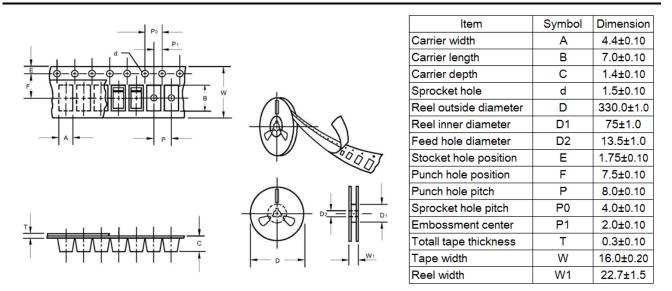




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#### 5. Packing and Ordering information

#### Packing information millimeters



#### **Ordering information**

Part Number	Package	Base Quantity	Delivery mode
P5V45SP	TO-277	5000	13" diameter plastic tape and reel

#### Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.003 ounces (0.093grams) TO-277

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