



PFC Device Corporation

**P5L45F-A**

## 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, $T_J=125^\circ\text{C}$	0.45	V, typ.
$T_J$ Operating Junction Temperature	-65 to +150	$^\circ\text{C}$

### Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- $150^\circ\text{C}$  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	$I_{FSM}$	150	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	2	Amps
Typical Thermal Resistance	$R\theta_{JL}$	30	$^\circ\text{C} / \text{W}$
Thermal Resistance junction to Ambient Note (1)			
Maximum Rate of Voltage Change ( at Rated VR )	$dv/dt$	10000	V/uS
Operating Junction Temperature	$T_J$	- 65 to +150	$^\circ\text{C}$
Storage Junction Temperature	$T_{STG}$	- 65 to +150	

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 1.0 A	$T_J = 25^\circ\text{C}$	VF*	0.34	----	Volts
	IF = 2.5 A			0.39	----	
	IF = 5.0 A			0.47	0.51	
	IF = 1.0 A	$T_J = 125^\circ\text{C}$		0.23	----	
	IF = 2.5 A			0.32	----	
	IF = 5.0 A			0.44	----	
Instantaneous Reverse Current	At $V_{RM}$	$T_J = 25^\circ\text{C}$	IR*	54	300	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		----	35	$\text{mA}$

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

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



Characteristics Curves

Ratings and Characteristics Curves

( TA = 25°C unless otherwise specified )

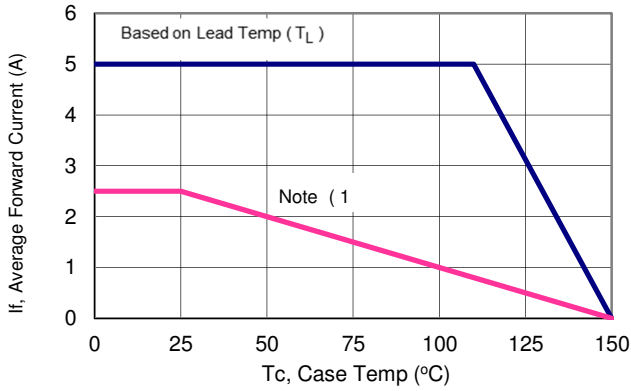


Figure 1: Current Derating, Case

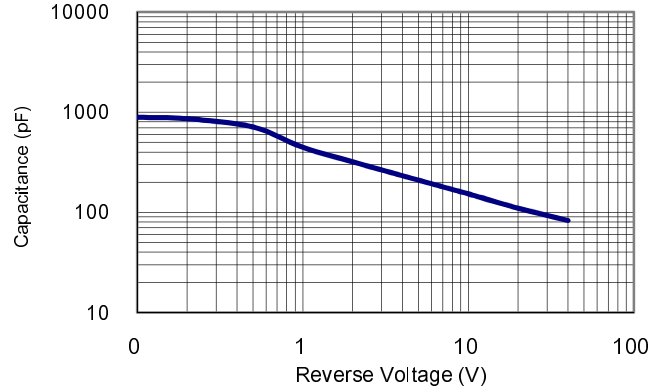


Figure 2: Typical Junction Capacitance

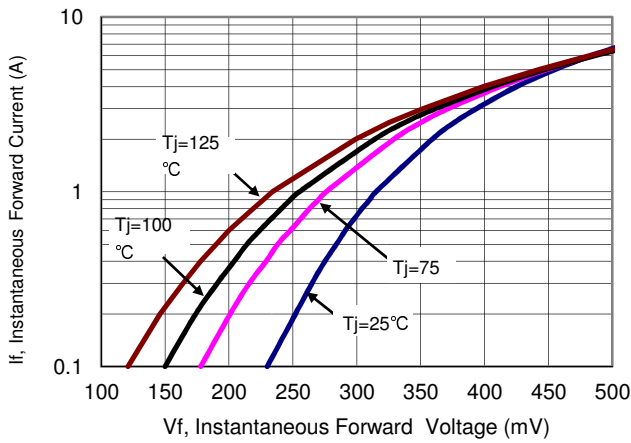


Figure 3: Typical Forward Voltage

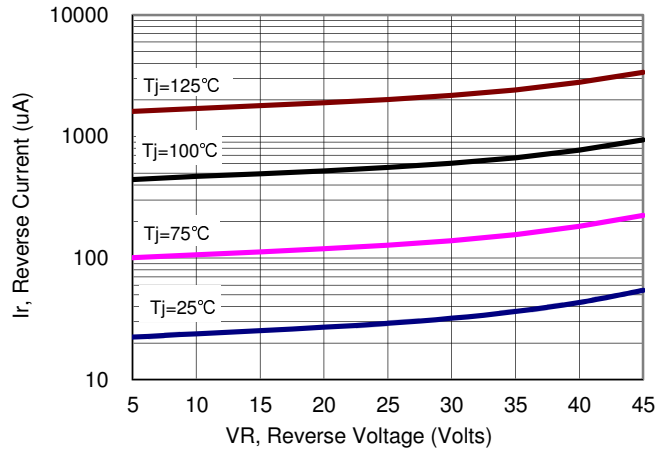
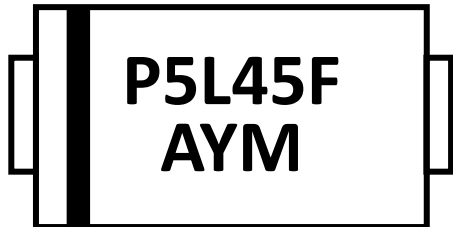


Figure 4: Typical Reverse Current



2. Marking information

Top Marking Rule



P5L45F = Product Type Marking Code

A = Assembly Code

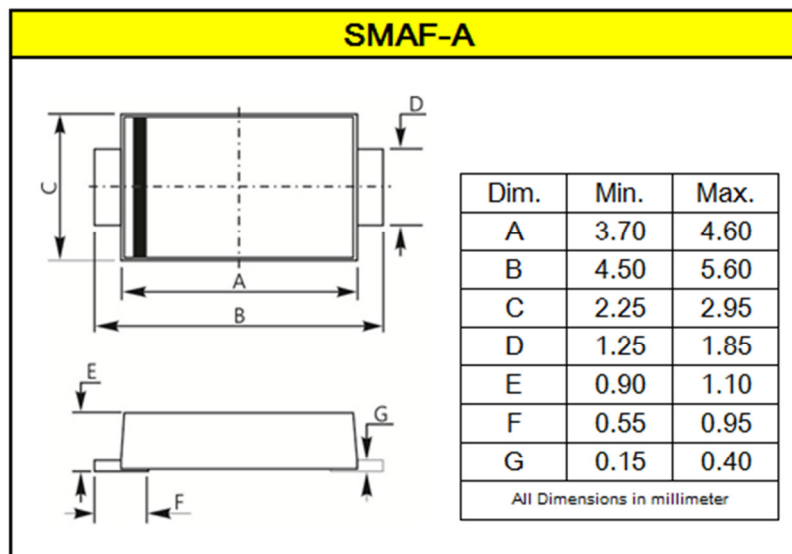
YM = Date Code

Y = Last one digits of year

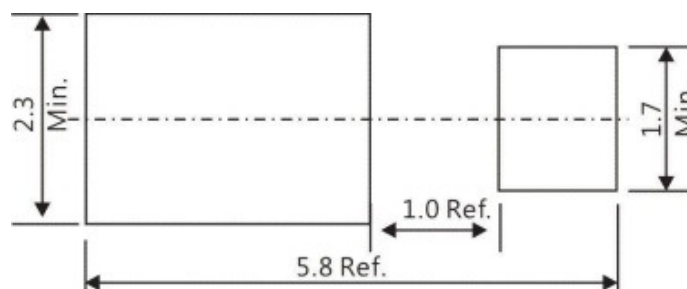
M = Month code

3. Package information

Suggested Package Outline Dimensions millimeters

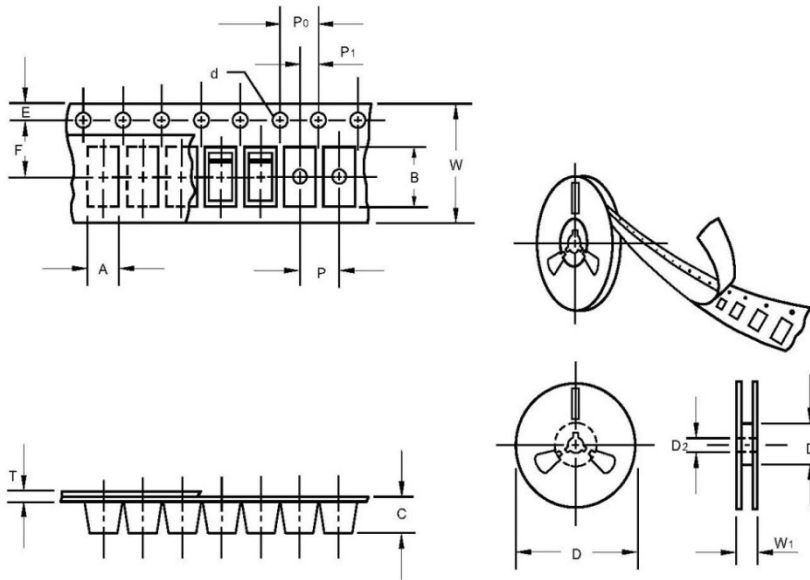


Mounting pad Outline Dimensions millimeters



4. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	A	2.79±0.15
Carrier length	B	5.10±0.15
Carrier depth	C	1.40±0.15
Sprocket hole	d	1.55±0.10
Reel outside diameter	D	330.0±1.0
Reel inner diameter	D1	75±1.0
Feed hole diameter	D2	13.5±1.0
Stocket hole position	E	1.75±0.10
Punch hole position	F	5.5±0.05
Punch hole pitch	P	4.0±0.10
Sprocket hole pitch	P0	4.0±0.10
Embossment center	P1	2.0±0.10
Total tape thickness	T	0.3±0.10
Tape width	W	12.0±0.15
Reel width	W1	18.1±1.5

Ordering information

Part Number	Package	Base Quantity	Delivery mode
P5L45F-A	Flat SMA with heat sink	10000	13" diameter plastic tape and reel

Mechanical

- Case: SMAF-A (Flat SMA with heat sink)
- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.0012 ounces (0.033grams) – SMAF-A

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