



PFC Device Corporation

## P30L50N5

### 30A 50V MOS Schottky Rectifier

#### Major ratings and characteristics

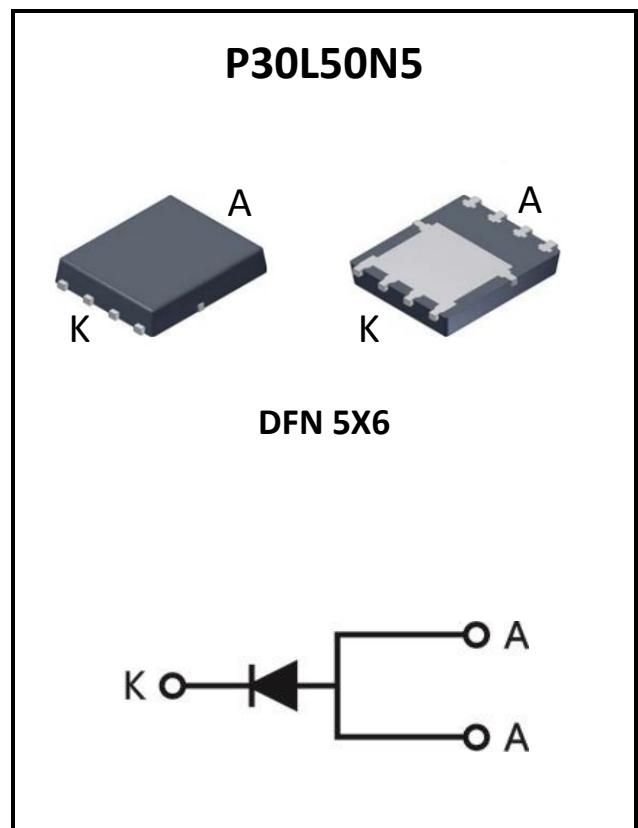
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	30	A
$V_{RRM}$	50	V
$V_F@ 30A, T_J=125^\circ C$	0.58	V, typ.
$T_J$ Operating Junction Temperature	-40 to +150	$^\circ C$

#### 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<sub>A</sub> = 25 °C unless otherwise specified )

Parameter	Symbol	Values	Units
DC Blocking Voltage	V <sub>RM</sub>	50	Volts
Working Peak Reverse Voltage	V <sub>RWM</sub>		
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>		
Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle	I <sub>o</sub>	30	Amps
Peak Forward Surge Current - 1/2 60hz	I <sub>FSM</sub>	300	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 <sub>θJA</sub>	72	°C / W
Thermal Resistance junction to Ambient Note (2)	R <sub>θJA</sub>	30	
Maximum Rate of Voltage Change ( at Rated VR )	dv/dt	10000	V/uS
Operating Junction Temperature	T <sub>J</sub>	- 40 to +150	°C
Storage Junction Temperature	T <sub>STG</sub>	- 40 to +150	

### Electrical Characteristics - (per leg)

( T<sub>A</sub> = 25 °C unless otherwise specified )

Parameter	Test Conditions	Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 30 A	VF*	---	0.63	Volts
			T <sub>J</sub> = 25 °C	0.58	
Instantaneous Reverse Current	At V <sub>RM</sub>	IR*	---	500	uA
			T <sub>J</sub> = 25 °C	---	100

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

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

Note 2. Polyimide 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°C unless otherwise specified )

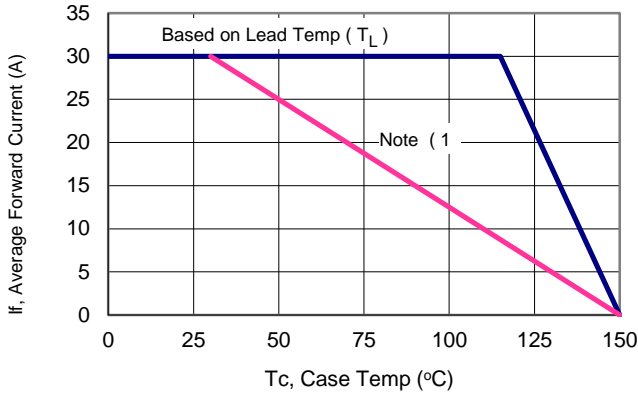


Figure 1: Current Derating, Case

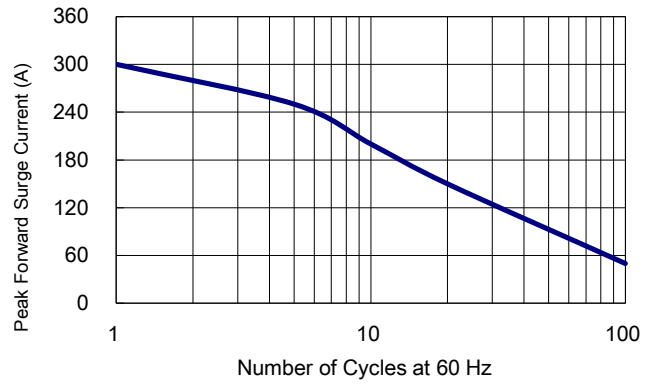


Figure 2: Maximum Repetitive Surge Current

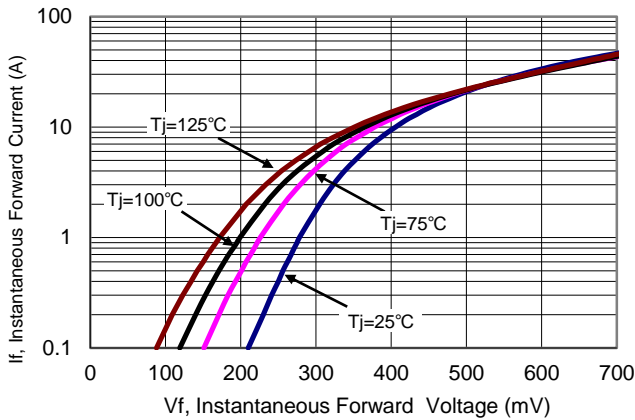


Figure 3: Typical Forward Voltage

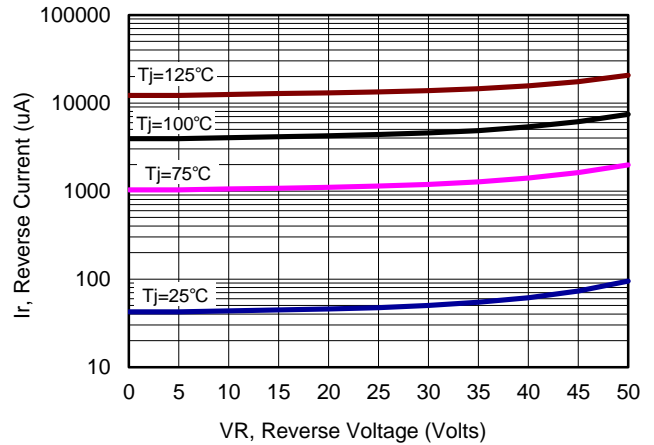


Figure 4: Typical Reverse Current

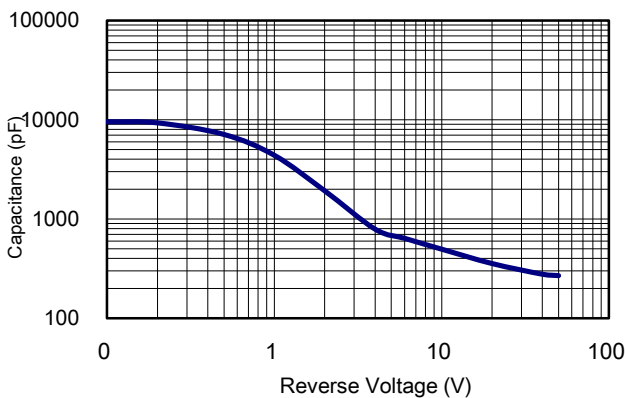
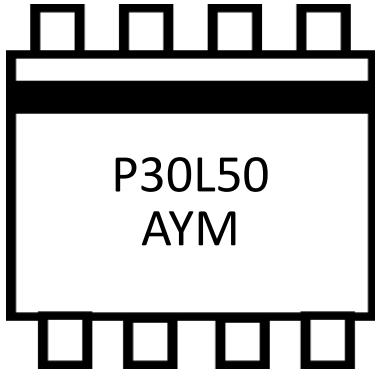


Figure 5: Typical Junction Capacitance



**3. Marking information**

**Top Marking Rule**



P30L50 = Product Type Marking Code

A = Assembly Code

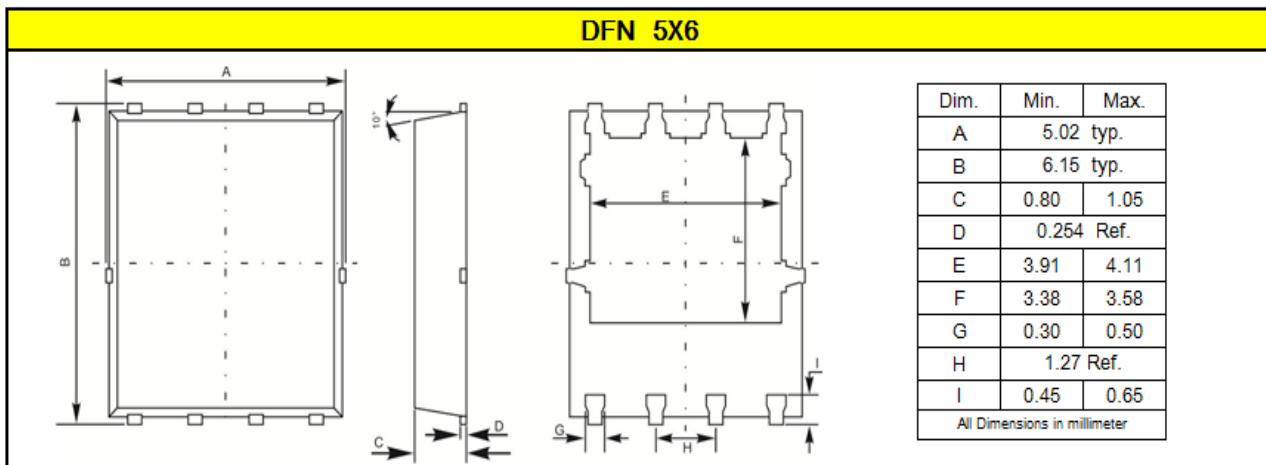
YM = Date Code

Y = Last digits of year

M = Month code

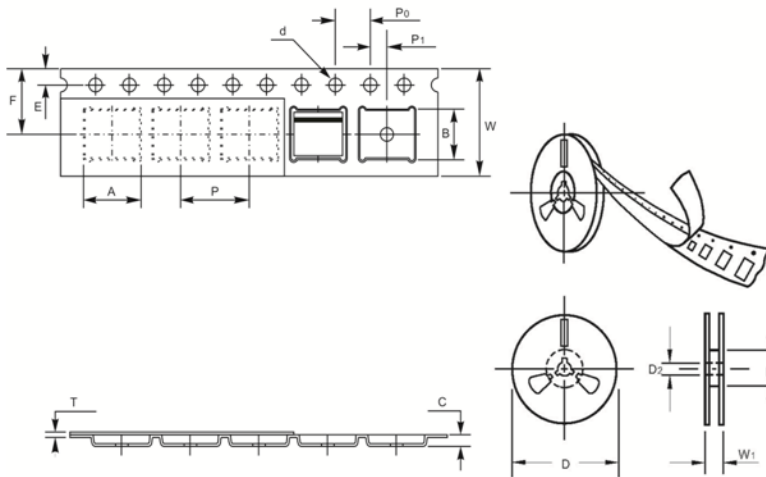
**4. Package information**

**Suggested Package Outline Dimensions millimeters**



5. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	A	6.3±0.10
Carrier length	B	5.3±0.10
Carrier depth	C	1.2±0.10
Sprocket hole	d	1.5±0.10
Reel outside diameter	D	330.0±2.0
Reel inner diameter	D1	100±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	8.0±0.10
Sprocket hole pitch	P0	4.0±0.10
Embossment center	P1	2.0±0.10
Total tape thickness	T	0.3±0.05
Tape width	W	12.0±0.15
Reel width	W1	18.4±1.5

Ordering information

Part Number	Package	Base Quantity	Delivery mode
P30L50N5	DFN 5X6	3000	13" diameter plastic tape and reel

Note: For Halogen Free molding compound, add "H" suffix to part number above.

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.003 ounces (0.093grams) – DFN 5X6

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