



PFC Device Corporation

## P20L50SP

### 20A 50V MOS Schottky Rectifier

#### Major ratings and characteristics

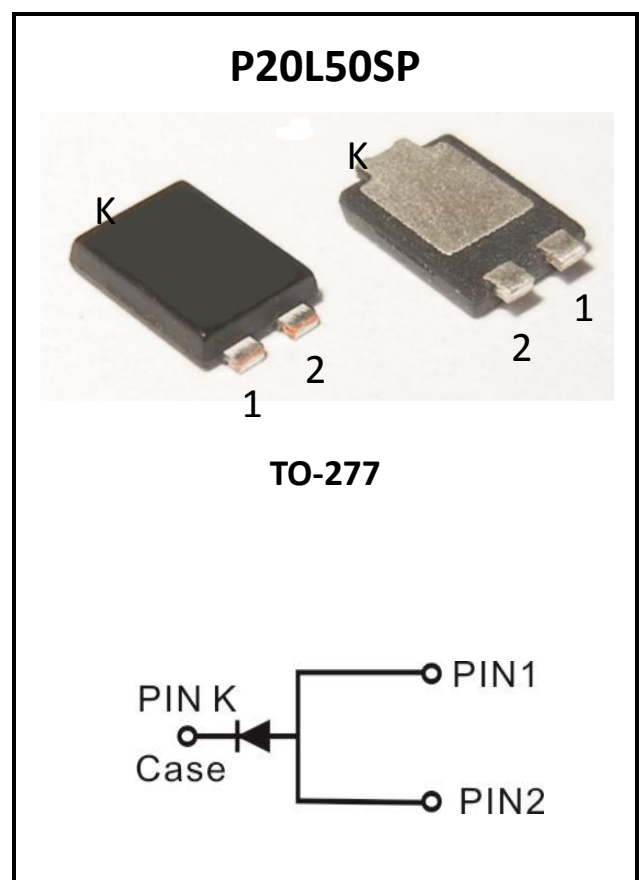
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
$V_{RRM}$	50	V
$V_F@ 20A, T_j=125^\circ C$	0.52	V, typ.
$T_j$ Operating Junction Temperature	-65 to +150	$^\circ C$

#### 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

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

Parameter	Symbol	Values	Units	
DC Blocking Voltage	$V_{RM}$	50	Volts	
Working Peak Reverse Voltage	$V_{RWM}$			
Peak Repetitive Reverse Voltage	$V_{RRM}$			
Average Rectified Forward Current Per device	$I_o$	20	Amps	
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	275	Amps	
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	2	Amps	
Typical Thermal Resistance				
Thermal Resistance junction to Ambient	Note (1)	$R\theta_{JA}$	72	$^\circ\text{C} / \text{W}$
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	$T_J$	- 65 to +150	$^\circ\text{C}$	
Storage Junction Temperature	$T_{STG}$	- 65 to +150		

### Electrical Characteristics - (per leg)

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Breakdown Voltage	$I_R = 0.5\text{mA}$	$T_J = 25\text{ }^\circ\text{C}$	$V_{BR}^*$	50(min.)		Volts
Instantaneous Forward Voltage	$I_F = 20\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	$V_F^*$	-----	0.60	Volts
		$T_J = 125\text{ }^\circ\text{C}$		0.52	0.56	
Instantaneous Reverse Current	At $V_{RM}$	$T_J = 25\text{ }^\circ\text{C}$	$I_R^*$	-----	500	$\mu\text{A}$
		$T_J = 125\text{ }^\circ\text{C}$		-----	100	$\text{mA}$

\* 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 )

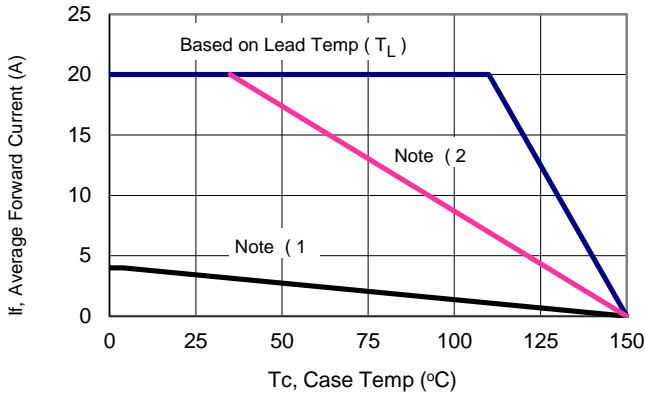


Figure 1: Current Derating, Case

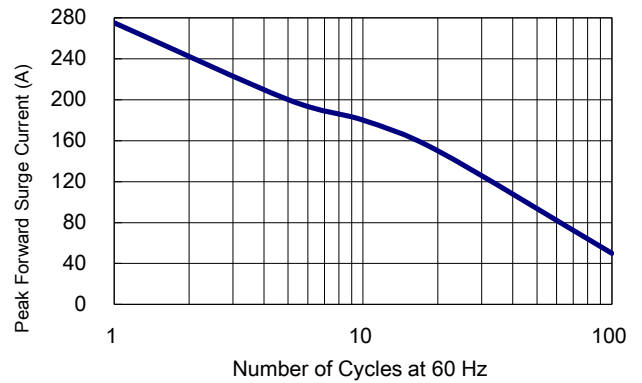


Figure 2: Maximum Repetitive Surge Current

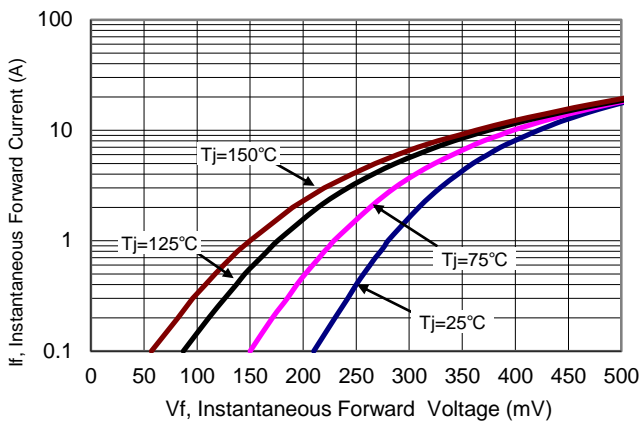


Figure 3: Typical Forward Voltage

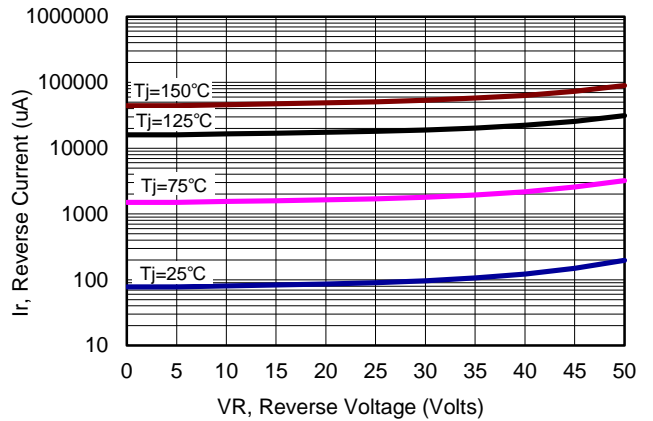


Figure 4: Typical Reverse Current

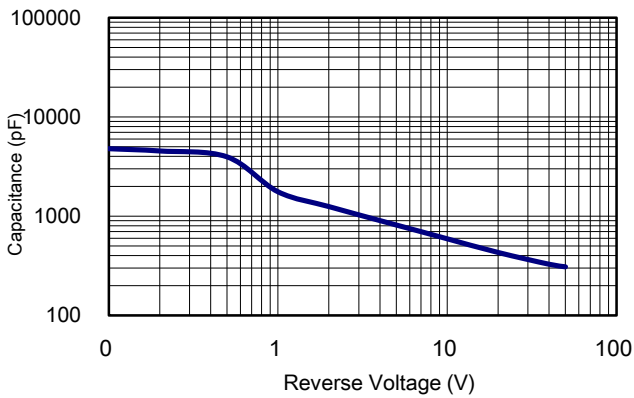
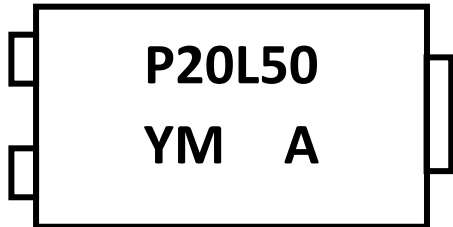


Figure 5: Typical Junction Capacitance



### 3. Marking information

Top Marking Rule



P20L50 = Product Type Marking Code

YM = Date Code

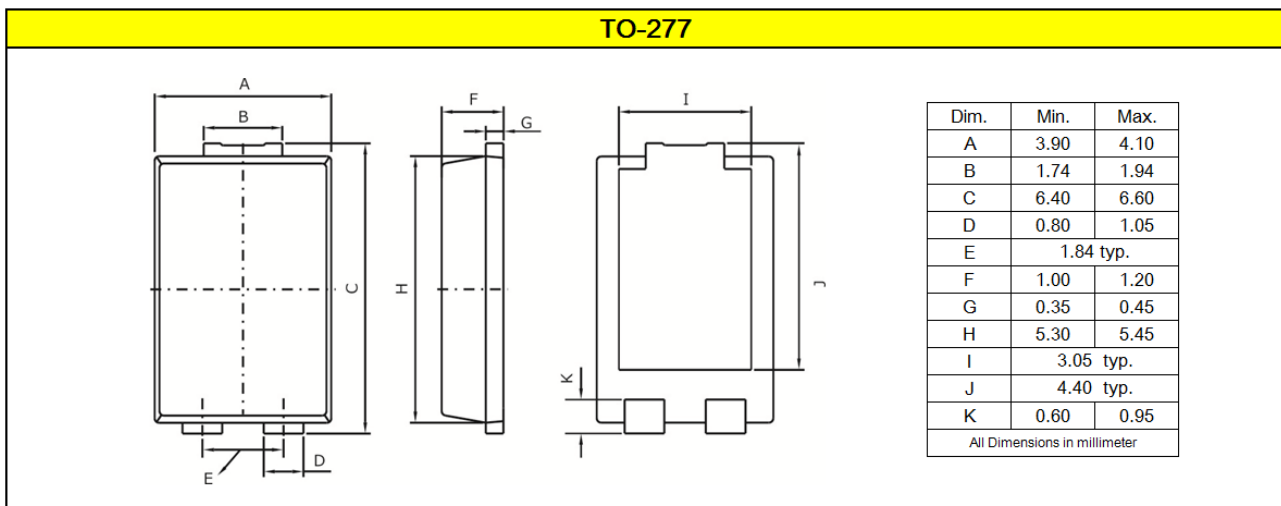
Y = Last one digits of year

M = Month code

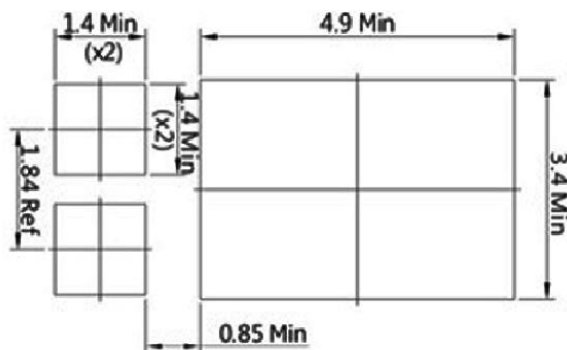
A = Assembly Code

### 4. Package information

Suggested Package Outline Dimensions millimeters

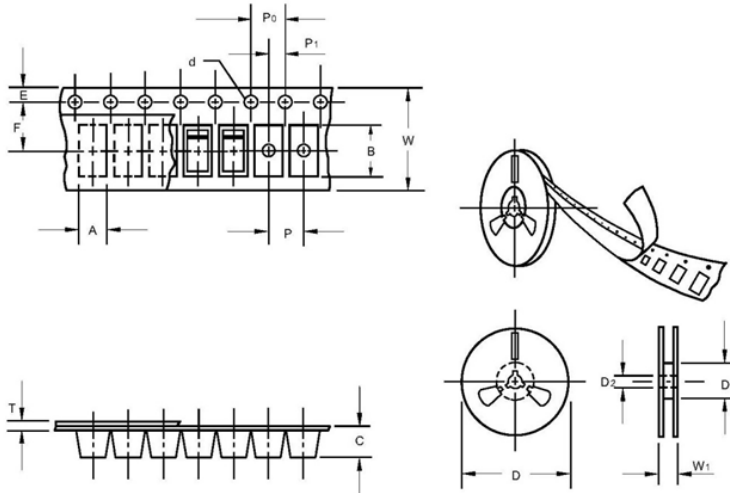


Mounting pad Outline Dimensions millimeters



5. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	A	4.4±0.10
Carrier length	B	7.0±0.10
Carrier depth	C	1.4±0.10
Sprocket hole	d	1.5±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	7.5±0.10
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±0.10
Tape width	W	16.0±0.20
Reel width	W1	22.7±1.5

Ordering information

Part Number	Package	Base Quantity	Delivery mode
P20L50SP	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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