

PT20L120N5

PFC Device Corporation

20A 120V HPTR® Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units	
I _{F(AV)} Rectangular	20	А	
Waveform	20		
V_{RRM}	120	V	
V _F @ 20A , Tj=125 °C	0.63	V, typ.	
T _J Operating Junction	40 to 1150	°C	
Temperature	-40 to +150	C	

Features

- Super Low Forward Voltage (SLVF®) 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)

PT20L120N5 A A Cathode Anode A

Typical Applications

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

1. Characteristics

Maximum Ratings Characteristics ($T_A = 25$ °C unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	V_{RM}		
Working Peak Reverse Voltage	V_{RWM}	120	Volts
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device		20	Amns
(Rated VR-20Khz Square Wave) - 50% duty cycle	l _o	20	Amps
Peak Forward Surge Current - 1/2 60hz	I _{FSM}	250	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I _{RRM}	1	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	- 40 to +150	°C
Storage Junction Temperature	T _{STG}	- 40 to +150	C

Electrical Characteristics - (per leg) ($T_A = 25$ °C unless otherwise specified)

Parameter	Test Conditions		Symbol	Тур.	Max.	Units	
	IF = 5 A			0.49			
	IF = 10 A	$T_J = 25$ °C		0.59			
Instantaneous	IF = 20 A		VF*	0.76	0.82	Malta	
Forward Voltage	IF = 5 A		VF.	0.42		Volts	
	IF = 10 A	T _J = 125 °C	T _J = 125 °C		0.53		
	IF = 20 A			0.63	0.69		
Instantaneous	VR = 90V	T _J = 25 °C T _J = 125 °C		10.0		uA	
Reverse Current	VR = 120V		ID*		300	uA	
	VR = 90V		- IR*	8.0		mA	
	VR = 120V			18.0	45	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)

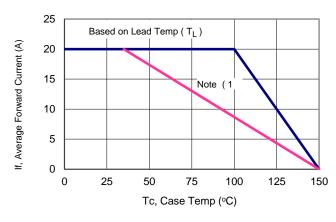


Version 4.2 2 / 5

2. Characteristics Curves

Ratings and Characteristics Curves

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



10000 (Ld) 90 1000 1000 0 1 10 100 Reverse Voltage (V)

Figure 1: Current Derating, Case

rigure 1: Current Derating, Case

100 Tj=125°C Tj=75°C Tj=25°C T

Figure 2: Maximum Repetitive Surge Current

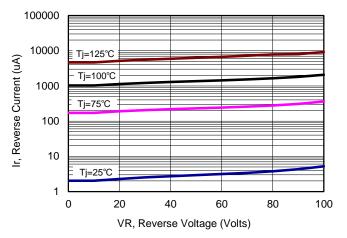


Figure 3: Typical Forward Voltage

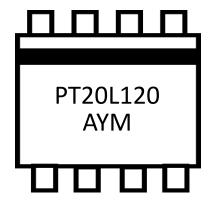
Figure 4: Typical Reverse Current



Version 4.2 3 / 5

3. Marking information

Top Marking Rule



PT20L120 = Product Type Marking Code

A = Assembly Code

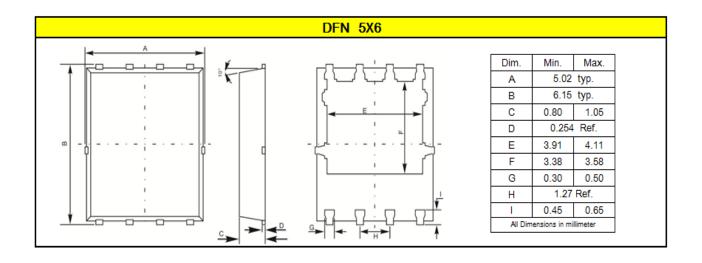
YM = Date Code

Y = Last digits of year

M = Month code

4. Package information

Suggested Package Outline Dimensions millimeters

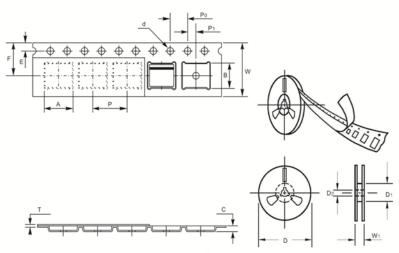




Version 4.2 4 / 5

5. Packing and Ordering information

Packing information millimeters



Item	Symbol	Dimension
Carrier width	Α	6.3±0.10
Carrier length	В	5.3±0.10
Carrier depth	С	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	Е	1.75±0.10
Punch hole position	F	5.5±0.05
Punch hole pitch	Р	8.0±0.10
Sprocket hole pitch	P0	4.0±0.10
Embossment center	P1	2.0±0.10
Totall tape thickness	Т	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
PT20L120N5	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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Version 4.2 5 / 5