



PFC Device Corporation

**PTR20V120CT**  
**PTR20V120CTF**  
**PTR20V120CTI**  
**PTR20V120CT**

## 20A 120V HPTR® Schottky Rectifier

### Major ratings and characteristics

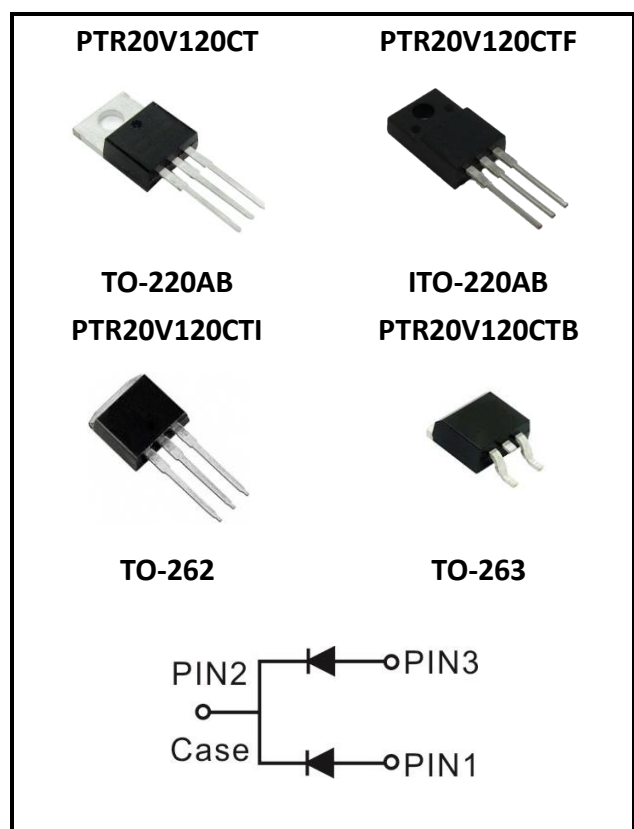
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	10 × 2	A
$V_{RRM}$	120	V
$V_F@ 10A, T_J=125^\circ C$	0.6	V, typ.
$T_J$ Operating Junction Temperature	-40 to +150	°C

### 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

### Typical Applications

Device optimized for ultra-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	$V_{RM}$	120	Volts
Working Peak Reverse Voltage	$V_{RWM}$		
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Average Rectified Forward Current Per device	$I_o$	20	Amps
(Rated VR-20Khz Square Wave) - 50% duty cycle			
Peak Forward Surge Current - 1/2 60hz	$I_{FSM}$	200	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	$I_{RRM}$	1	Amps
Typical Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB Package = TO-262 Package = TO-263	$R\theta_{JC}$	2 4 2.5 3	$^{\circ}\text{C} / \text{W}$
Isolation voltage (ITO-220 only)		$V_{AC}$	
Maximum Rate of Voltage Change ( at Rated $V_R$ )		$dv/dt$	
Operating Junction Temperature		$T_J$	
Storage Junction Temperature	$T_{STG}$	- 40 to +150	$^{\circ}\text{C}$

### Electrical Characteristics - (per leg)

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 5 A	T <sub>J</sub> = 25 °C	VF*	0.56	-----	V
	IF = 10 A			0.69	0.73	
	IF = 5 A	T <sub>J</sub> = 125 °C		0.51	-----	
	IF = 10 A			0.60	0.64	
Instantaneous Reverse Current	VR = 90V	T <sub>J</sub> = 25 °C	IR*	12	-----	uA
	VR = 120V			15	100	uA
	VR = 90V	T <sub>J</sub> = 125 °C		-----	-----	mA
	VR = 120V			12	40	mA

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



## 2. Characteristics Curves

### Ratings and Characteristics Curves

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

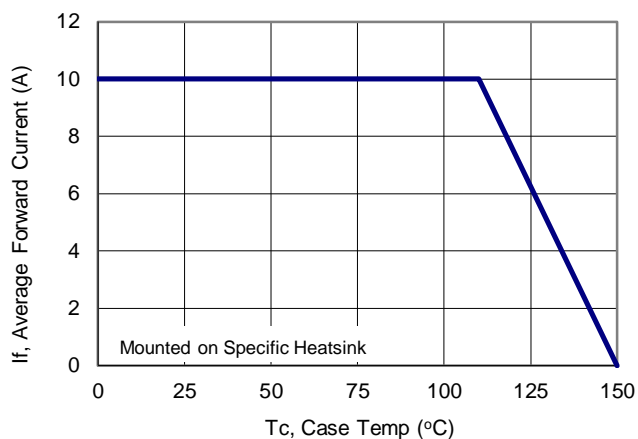


Figure 1: Current Derating, Case

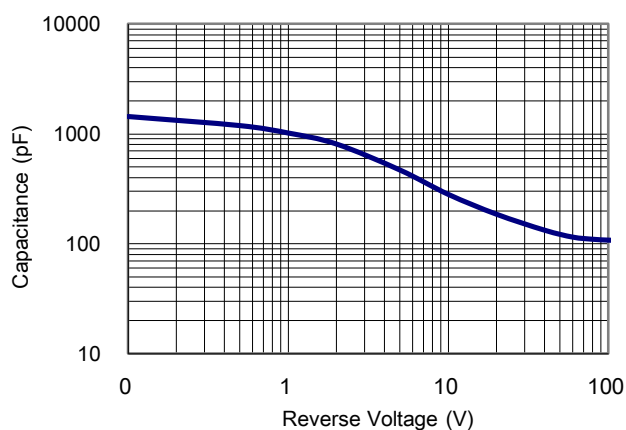


Figure 2: Typical Junction Capacitance

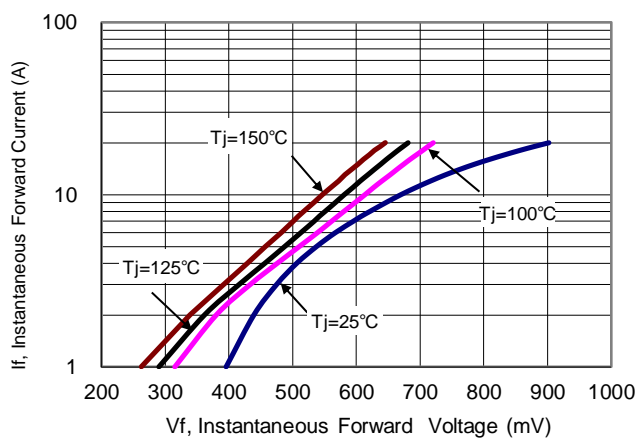


Figure 3: Typical Forward Voltage

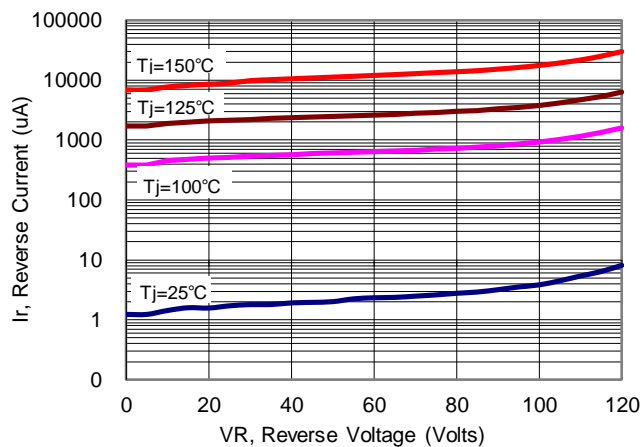


Figure 4: Typical Reverse Current



### 3. Marking information

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#### Top Marking Rule

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**PFC PTR**  
**20V120CT**  
**YYWW ABSH**

PTR20V120CT = Product Type Marking Code  
YYWW = Date Code  
YY = Last two digits of year  
WW = Week code  
AB = Assembly code  
S = Series Number  
H = Halogen Free (N/A = common molding compound)

**PFC PTR**  
**20V120CTF**  
**YYWW ABSH**

PTR20V120CTF = Product Type Marking Code  
YYWW = Date Code  
YY = Last two digits of year  
WW = Week code  
AB = Assembly code  
S = Series Number  
H = Halogen Free (N/A = common molding compound)

**PFC PTR**  
**20V120CTI**  
**YYWW ABSH**

PTR20V120CTI = Product Type Marking Code  
YYWW = Date Code  
YY = Last two digits of year  
WW = Week code  
AB = Assembly code  
S = Series Number  
H = Halogen Free (N/A = common molding compound)

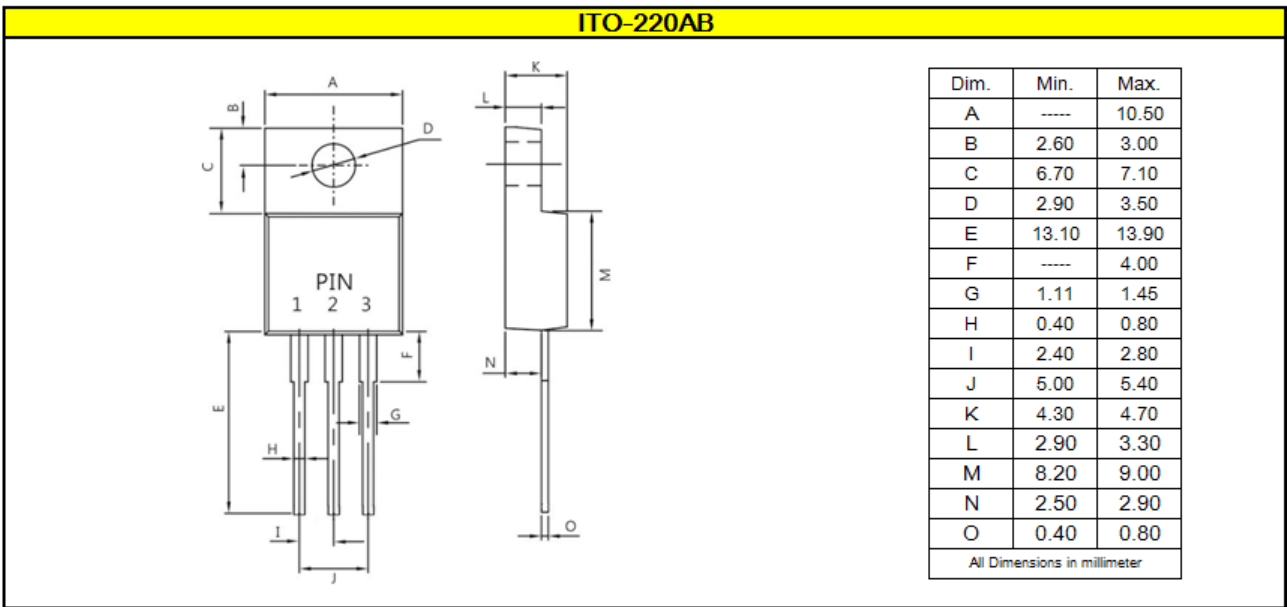
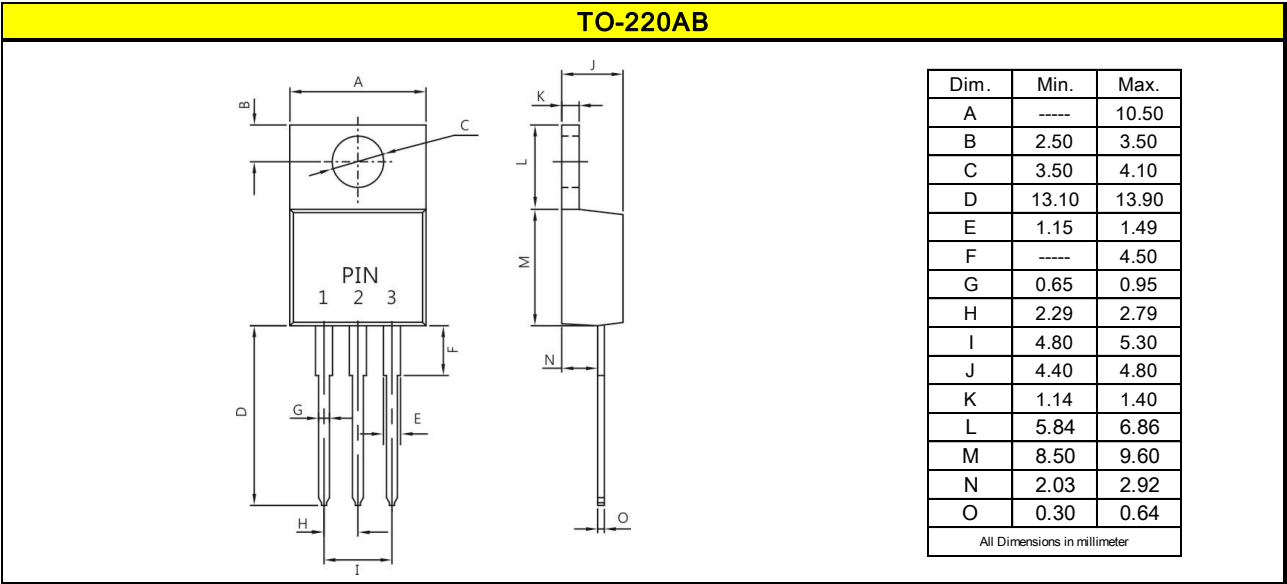
**PFC PTR**  
**20V120CTB**  
**YYWW ABSH**

PTR20V120CTB = Product Type Marking Code  
YYWW = Date Code  
YY = Last two digits of year  
WW = Week code  
AB = Assembly code  
S = Series Number  
H = Halogen Free (N/A = common molding compound)



4. Package information

Package Outline Dimensions    millimeters



Package Outline Dimensions   millimeters



## 5. Ordering information

Part Number	Package	Delivery mode
PTR20V120CT	TO-220AB	50 pieces / tube
PTR20V120CTF	ITO-220AB	50 pieces / tube
PTR20V120CTI	TO-262	50 pieces / tube
PTR20V120CTB	TO-263	800 pieces / 13" diameter 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 : 0.07 ounces (1.96grams) - TO-220AB  
0.06 ounces (1.74grams) - ITO-220AB  
0.05 ounces (1.45 grams) - TO-262  
0.04 ounces (1.16 grams) - TO-263
- Mounting Torque : Recommended 4~5 kg-cm.

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