



PFC Device Corporation

**PTR20L100S**  
**PTR20L100SF**  
**PTR20L100SI**  
**PTR20L100SB**

## 20A 100V HPTR® Single Schottky Rectifier

### Major ratings and characteristics

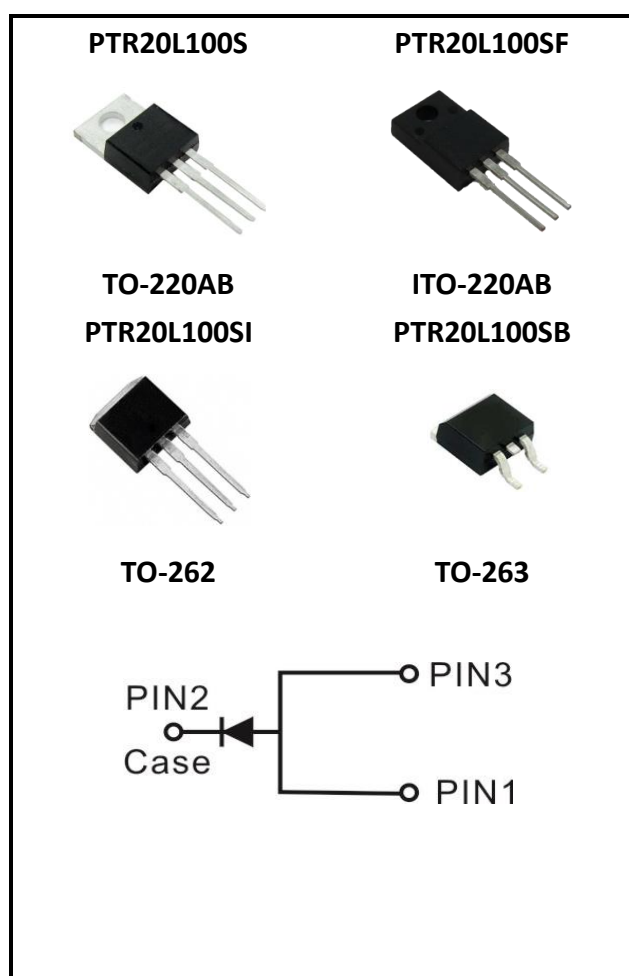
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
$V_{RRM}$	100	V
$V_F@ 20A, T_J=125^\circ C$	0.67	V, typ.
$T_J$ Operating Junction Temperature	-40 to +150	$^\circ C$

### Features

- Super Low Forward Voltage ( SLVF® ) Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150 $^\circ C$  Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

### 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	$V_{RM}$	100	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	$I_o$	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 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)	$V_{AC}$	1500	V
Maximum Rate of Voltage Change ( at Rated $V_R$ )	$dv/dt$	10000	V/uS
Operating Junction Temperature	$T_J$	- 40 to +150	$^{\circ}\text{C}$
Storage Junction Temperature	$T_{STG}$	- 40 to +150	

### Electrical Characteristics -

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 5 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>*</sup>	0.50	-----	Volts
	IF = 10 A			0.60	-----	
	IF = 20 A			0.78	0.85	
	IF = 5 A	T <sub>J</sub> = 125 °C		0.44	-----	
	IF = 10 A			0.52	-----	
	IF = 20 A			0.67	0.74	
Instantaneous Reverse Current	VR=70	T <sub>J</sub> = 25 °C	IR <sup>*</sup>	10	-----	uA
	VR=100			20	300	uA
	VR=70	T <sub>J</sub> = 125 °C		5	-----	mA
	VR=100			11	30	mA

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



## 2. Characteristics Curves

### Ratings and Characteristics Curves

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

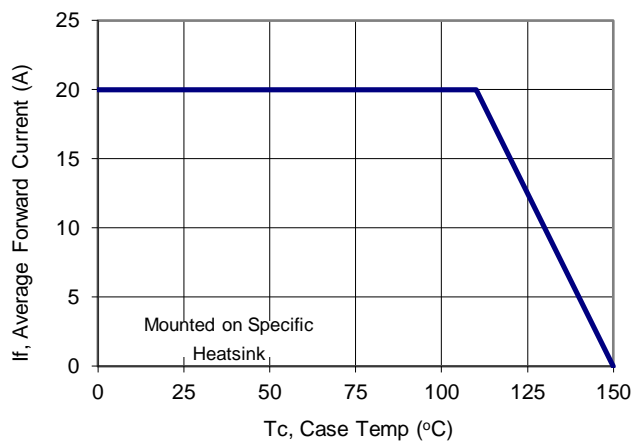


Figure 1: Current Derating, Case

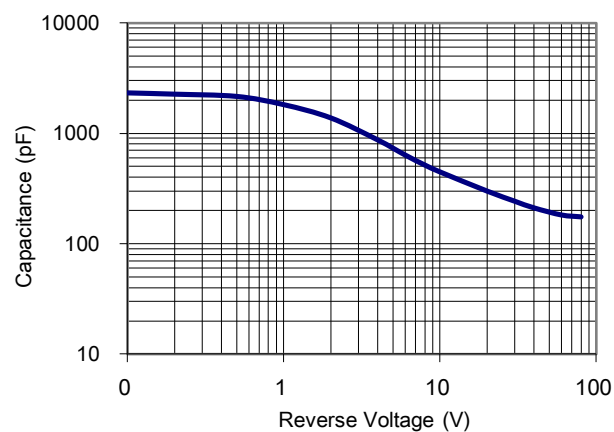


Figure 2: Typical Junction Capacitance

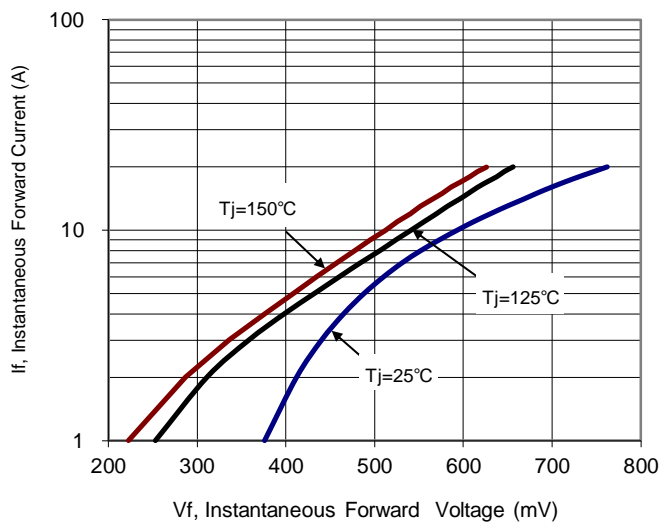


Figure 3: Typical Forward Voltage

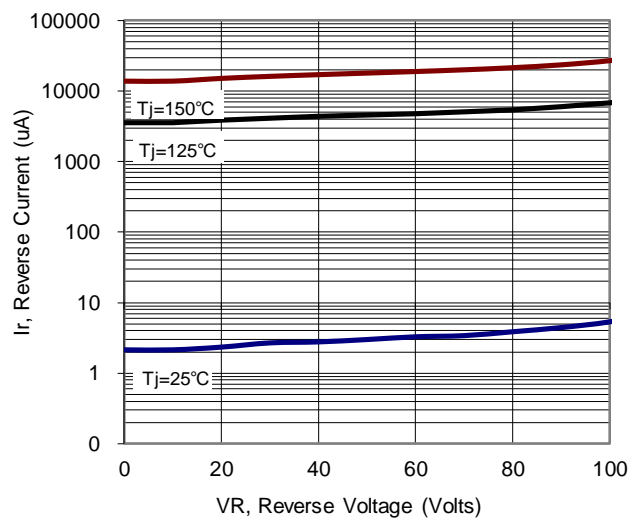


Figure 4: Typical Reverse Current



## 3. Marking information

### Top Marking Rule

**PFC PTR**  
**20L100S**  
**YYWW ABSH**

PTR20L100S = 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**  
**20L100SF**  
**YYWW ABSH**

PTR20L100SF = Product Type Marking Code  
YYWW = Date Code  
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WW = Week code  
AB = Assembly code  
S = Series Number  
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**PFC PTR**  
**20L100SI**  
**YYWW ABSH**

PTR20L100SI = 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)

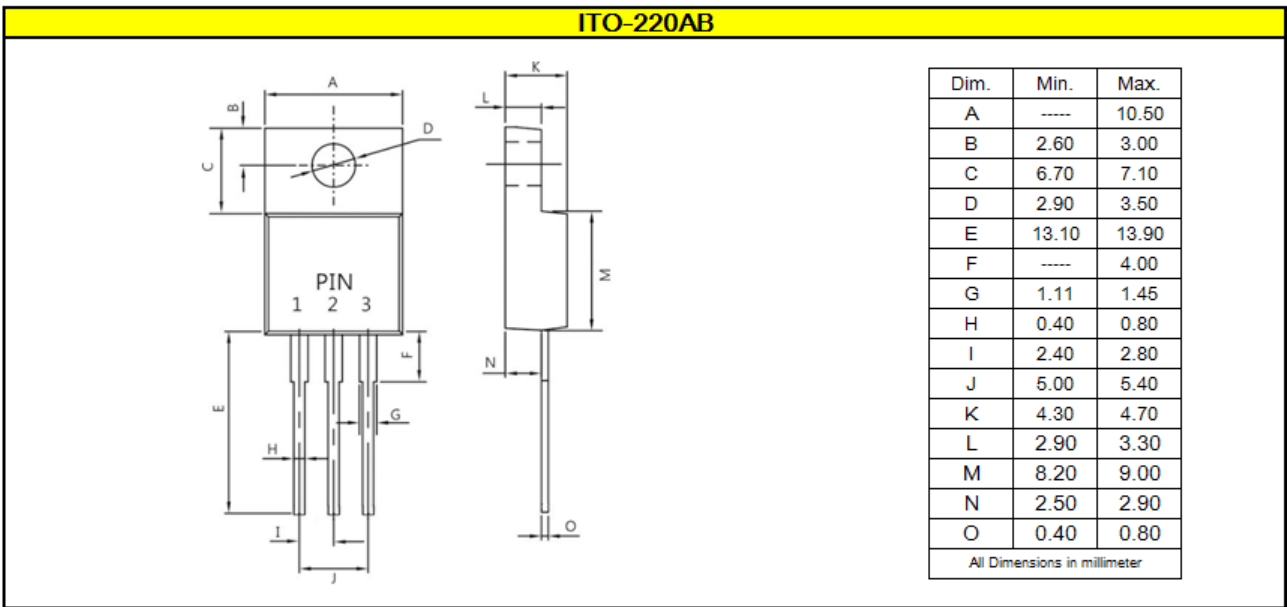
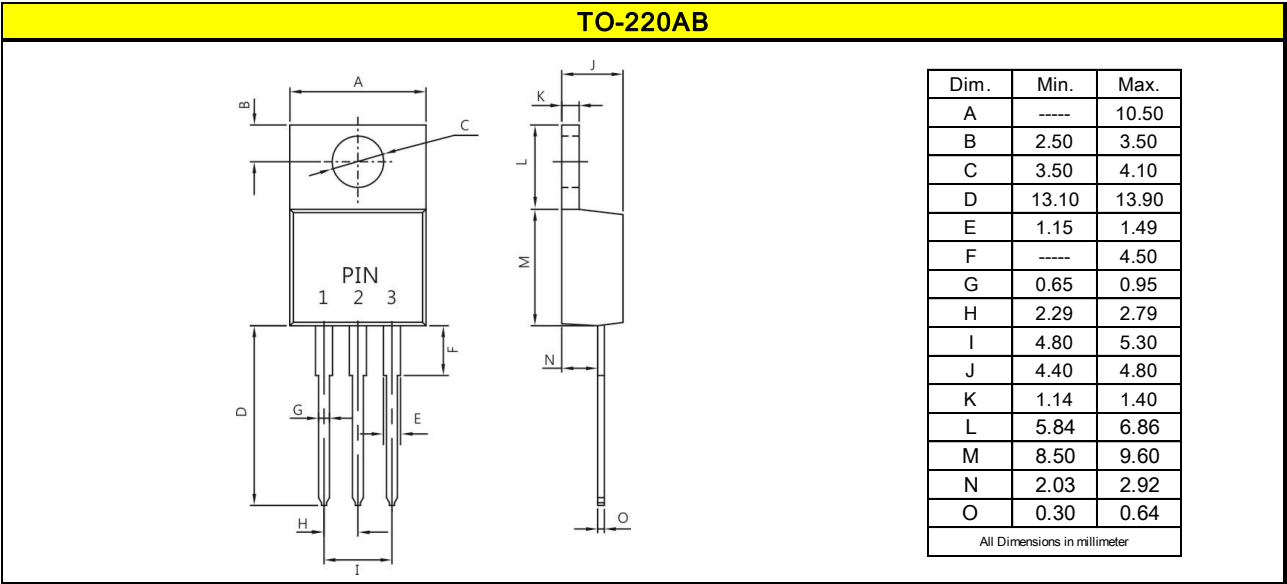
**PFC PTR**  
**20L100SB**  
**YYWW ABSH**

PTR20L100SB = 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
PTR20L100S	TO-220AB	50 pieces / tube
PTR20L100SF	ITO-220AB	50 pieces / tube
PTR20L100SI	TO-262	50 pieces / tube
PTR20L100SB	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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