



PFC Device Corporation

PTR20L120S
PTR20L120SF
PTR20L120SI
PTR20L120SB

20A 120V HPTR[®] Single Schottky Rectifier

Major ratings and characteristics

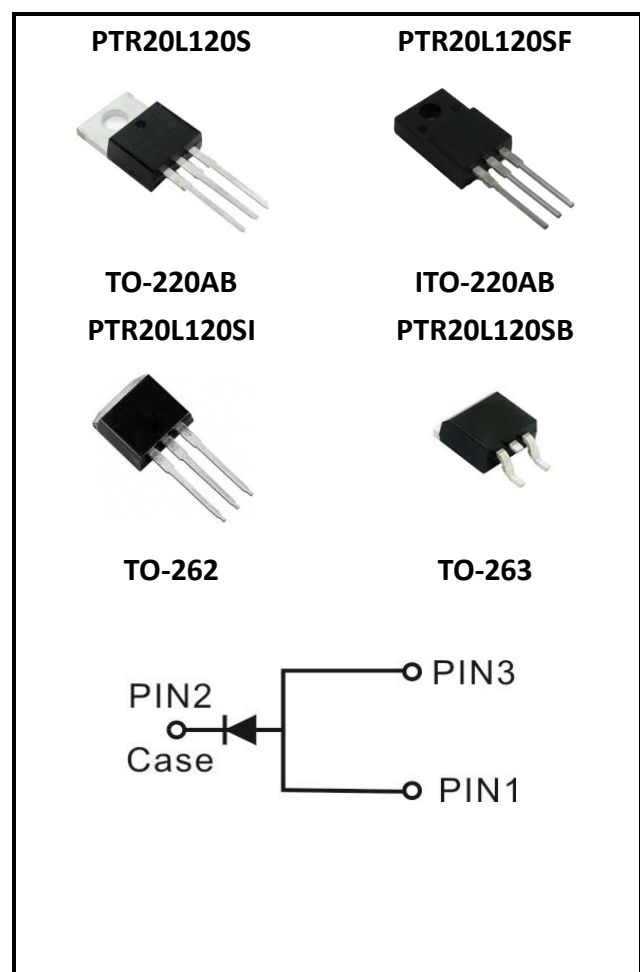
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
V_{RRM}	120	V
$V_F@ 20A, T_j=125^\circ C$	0.73	V, typ.
T_j Operating Junction Temperature	-40 to +150	$^\circ C$

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}	120	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
Breakdown Voltage	$I_R = 0.5\text{mA}$	$T_J = 25^\circ\text{C}$	V_B^*	120 (min.)		V
Instantaneous Forward Voltage	IF = 5 A	$T_J = 25^\circ\text{C}$	V_F^*	0.57	-----	Volts
	IF = 10 A			0.71	-----	
	IF = 20 A			0.99	1.12	
	IF = 5 A	$T_J = 125^\circ\text{C}$		0.55	-----	
	IF = 10 A			0.61	-----	
	IF = 20 A			0.73	0.80	
Instantaneous Reverse Current	VR=90	$T_J = 25^\circ\text{C}$	I_R^*	5	-----	uA
	VR=120			8	300	uA
	VR=90	$T_J = 125^\circ\text{C}$		5	-----	mA
	VR=120			10	30	mA

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



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

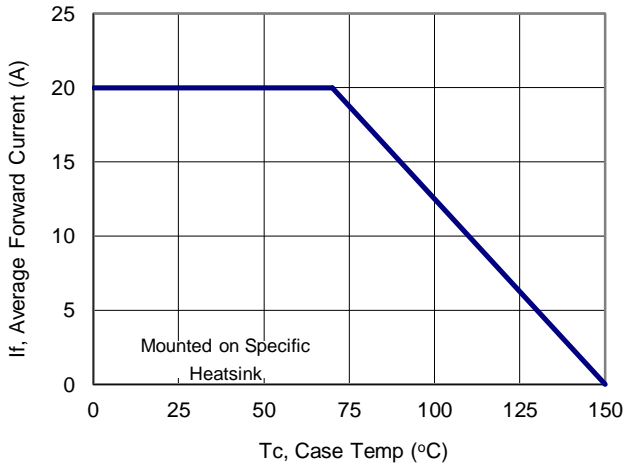


Figure 1: Current Derating, Case

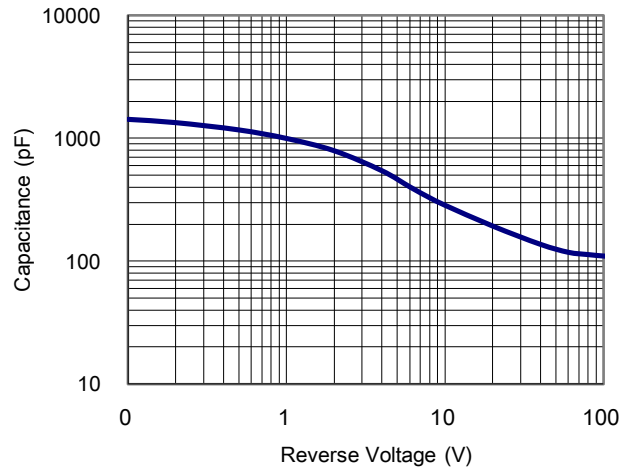


Figure 2: Typical Junction Capacitance

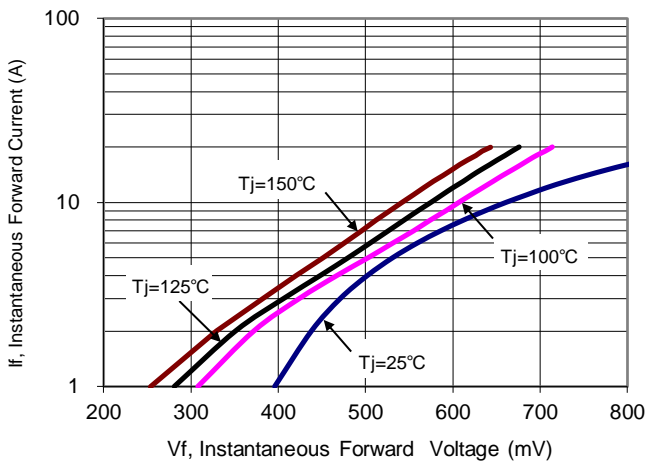


Figure 3: Typical Forward Voltage

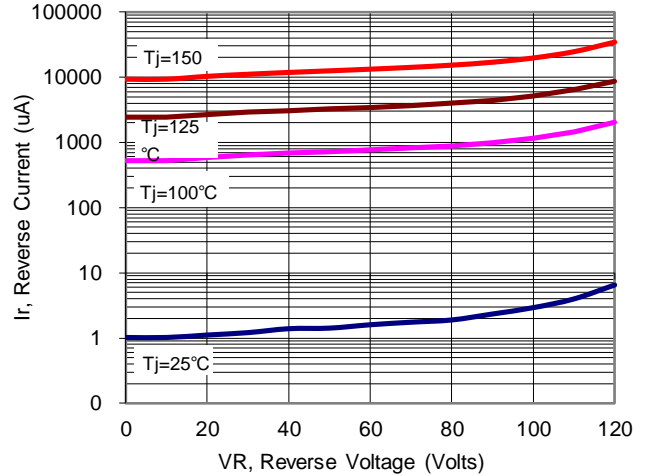


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule

**PFC PTR
20L120S
YYWW ABSH**

PTR20L120S = 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)

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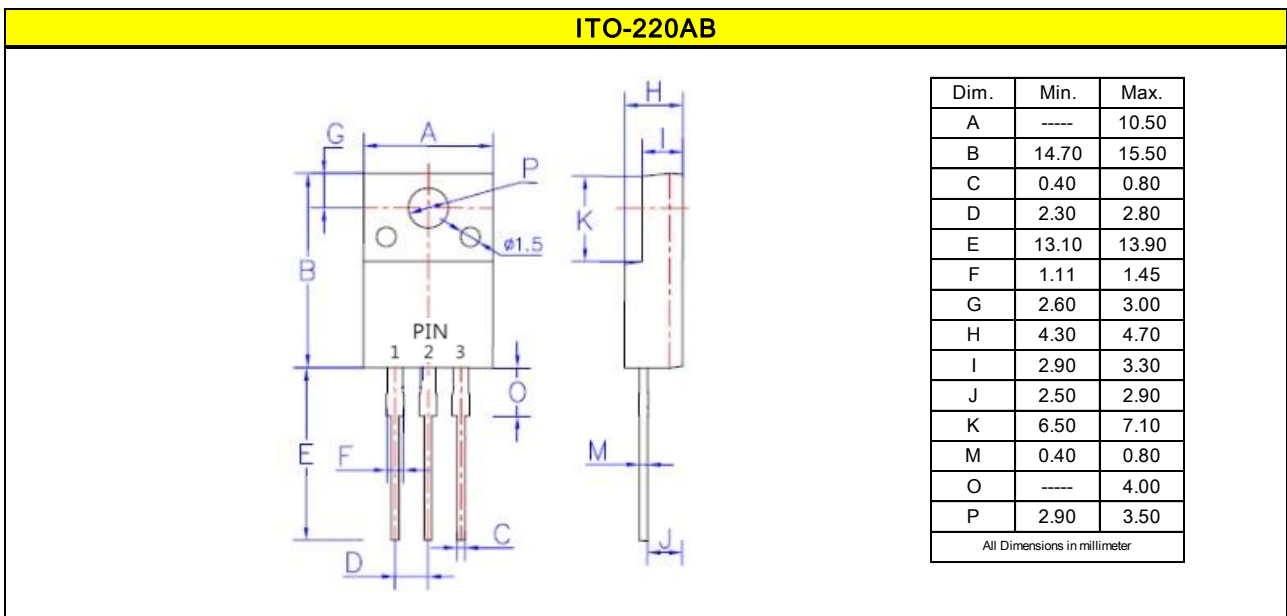
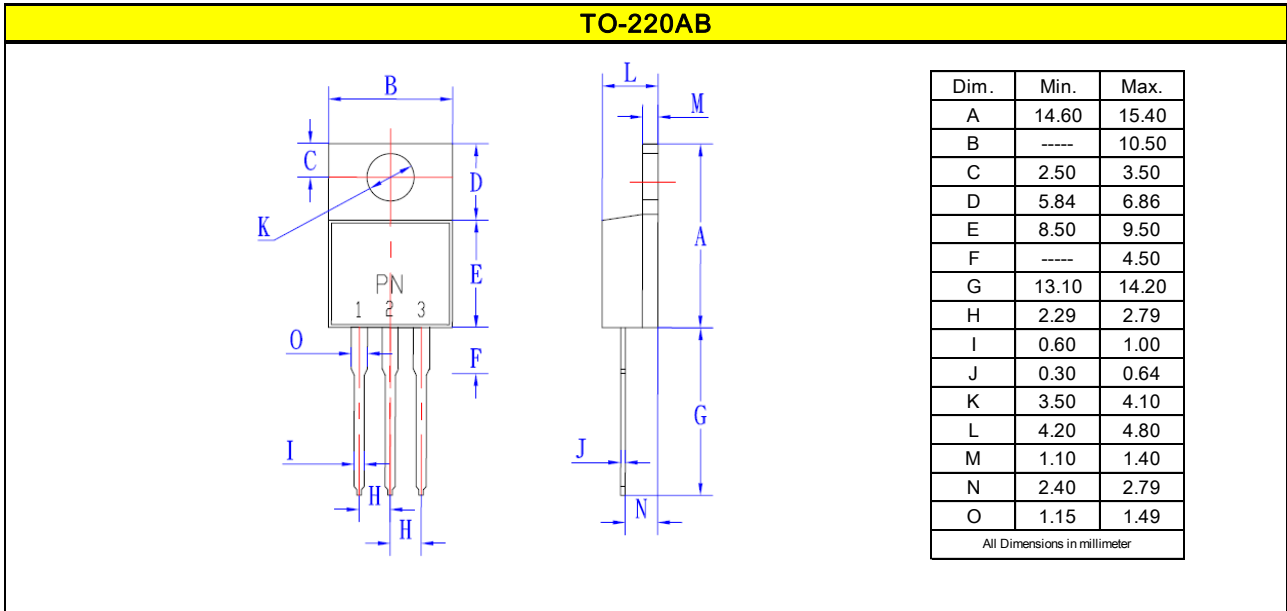
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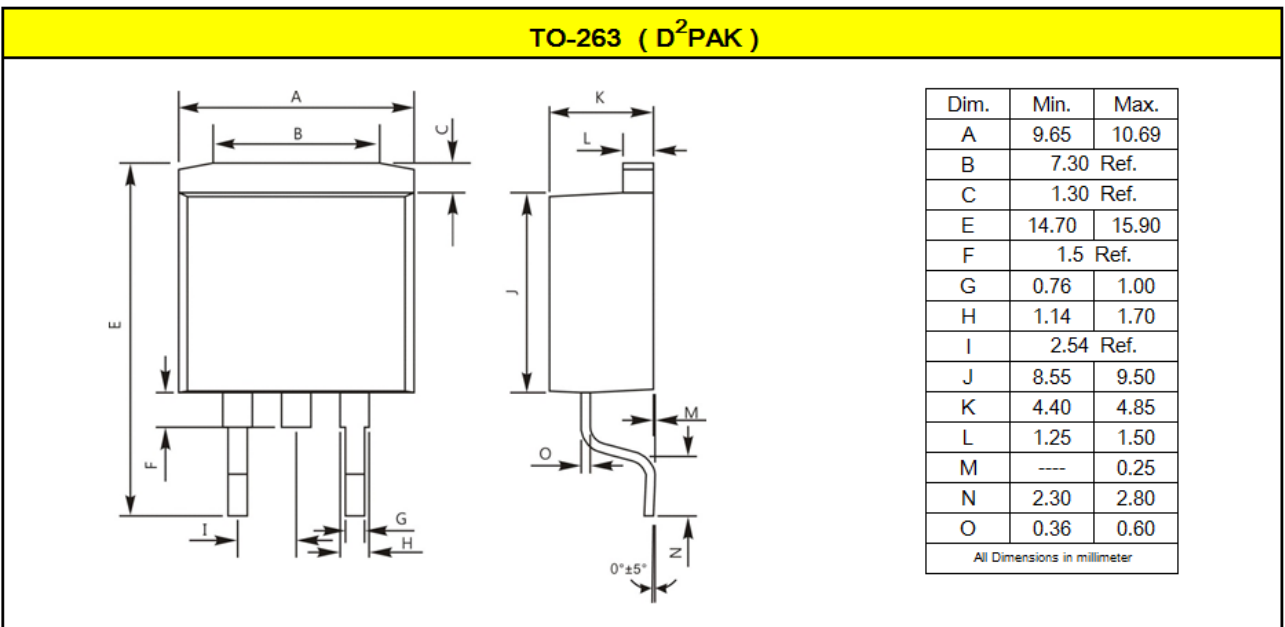
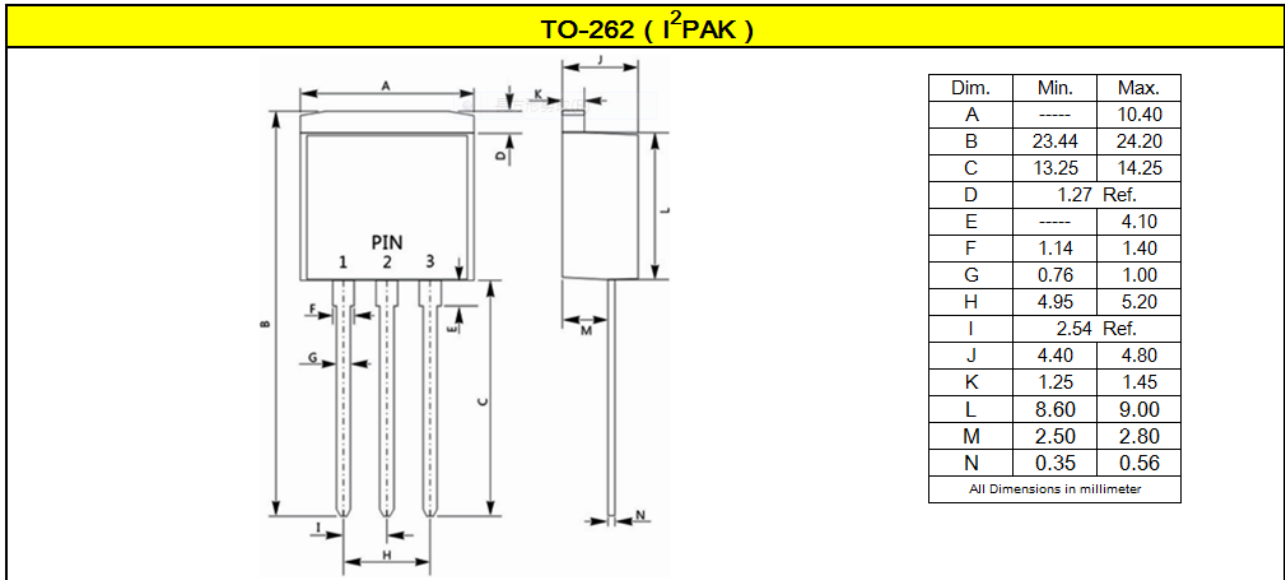


4. Package information

Package Outline Dimensions millimeters



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5. Ordering information

Part Number	Package	Delivery mode
PTR20L120S	TO-220AB	50 pieces / tube
PTR20L120SF	ITO-220AB	50 pieces / tube
PTR20L120SI	TO-262	50 pieces / tube
PTR20L120SB	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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