



PFC Device Corporation

PTR40120CT
PTR40120CTF
PTR40120CTI
PTR40120CTB

40A 120V HPTR® Schottky Rectifier

Major ratings and characteristics

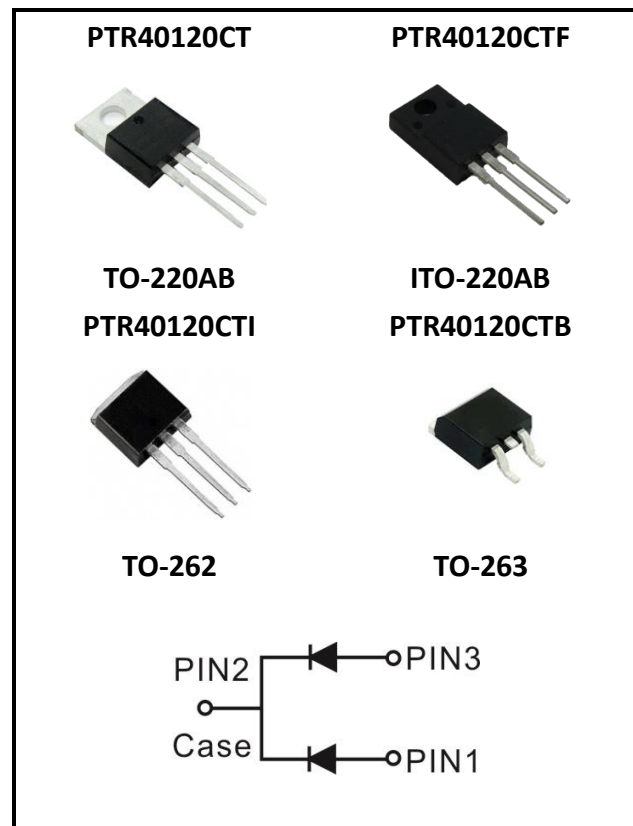
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20×2	A
V_{RRM}	120	V
$V_F@ 20A, T_J=125^\circ C$	0.68	V, typ.
T_J Operating Junction Temperature	-40 to +150	$^\circ C$

Features

- 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	40	Amps
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	200	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	2	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}	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 - (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 _J = 25 °C	V _F [*]	0.54	-----	Volts
	IF = 10 A			0.67		
	IF = 20 A			0.90	1.00	
	IF = 5 A	T _J = 125 °C		0.49	-----	
	IF = 10 A			0.58		
	IF = 20 A			0.68	0.78	
Instantaneous Reverse Current	V _R = 90V	T _J = 25 °C	I _R [*]	3.0	-----	uA
	V _R = 120V			-----	200	uA
	V _R = 90V	T _J = 125 °C		3.3	-----	mA
	V _R = 120V			6.3	45	mA

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



2. Characteristics Curves

Ratings and Characteristics Curves

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

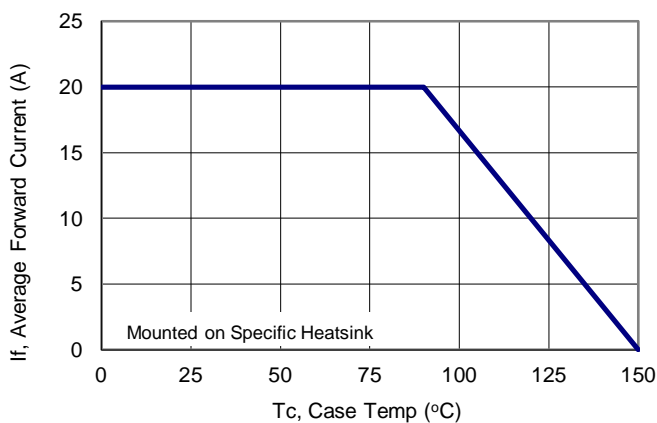


Figure 1: Current Derating, Case

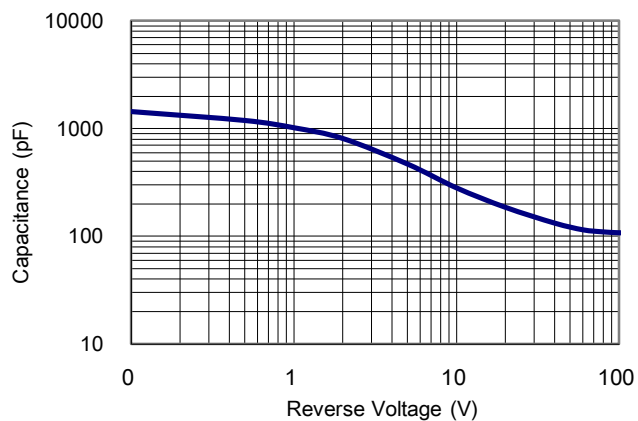


Figure 2: Typical Junction Capacitance

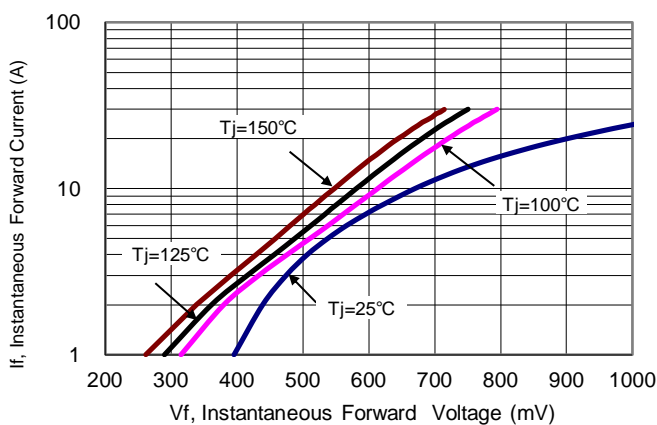


Figure 3: Typical Forward Voltage

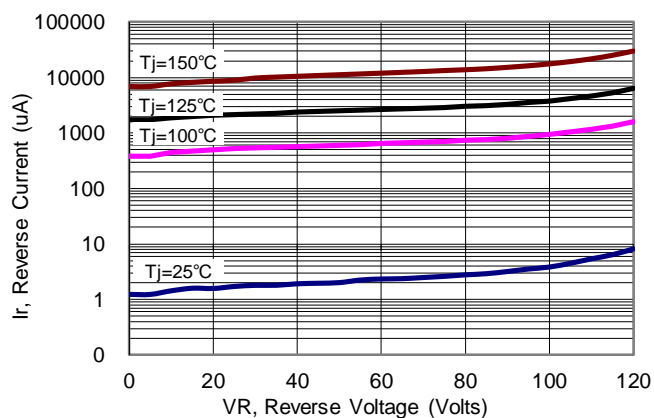


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule

PFC
PTR40120CT
YYWW AB SH

PTR40120CT = 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
PTR40120CTF
YYWW AB SH

PTR40120CTF = 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
PTR40120CTI
YYWW AB SH

PTR40120CTI = 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
PTR40120CTB
YYWW AB SH

PTR40120CTB = Product Type Marking Code

YYWW = Date Code

YY = Last two digits of year

WW = Week code

AB = Assembly code

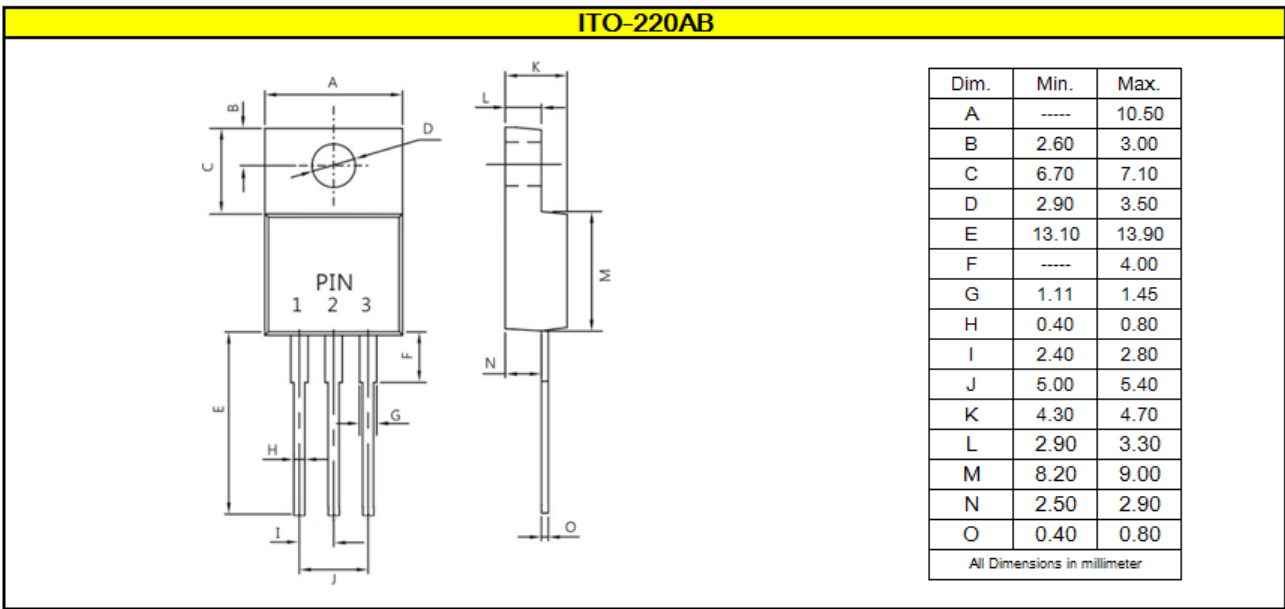
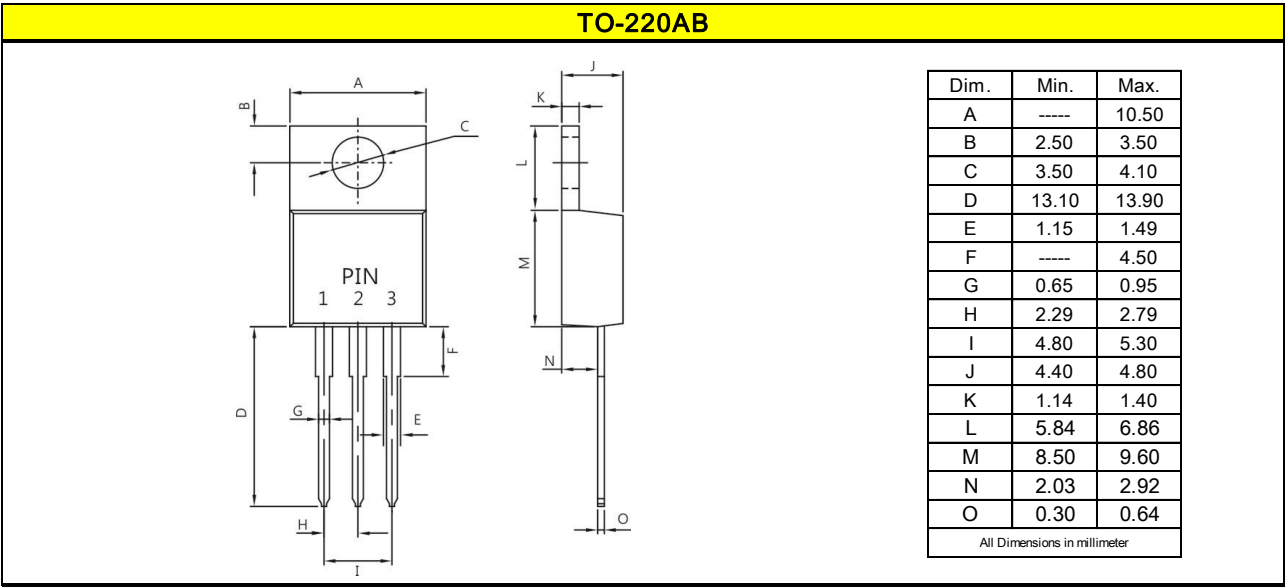
S = Series Number

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
PTR40120CT	TO-220AB	50 pieces / tube
PTR40120CTF	ITO-220AB	50 pieces / tube
PTR40120CTI	TO-262	50 pieces / tube
PTR40120CTB	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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