



PFC Device Corporation

**PTR40100CT**  
**PTR40100CTF**  
**PTR40100CTI**  
**PTR40100CTB**

## 40A 100V HPTR® Schottky Rectifier

### Major ratings and characteristics

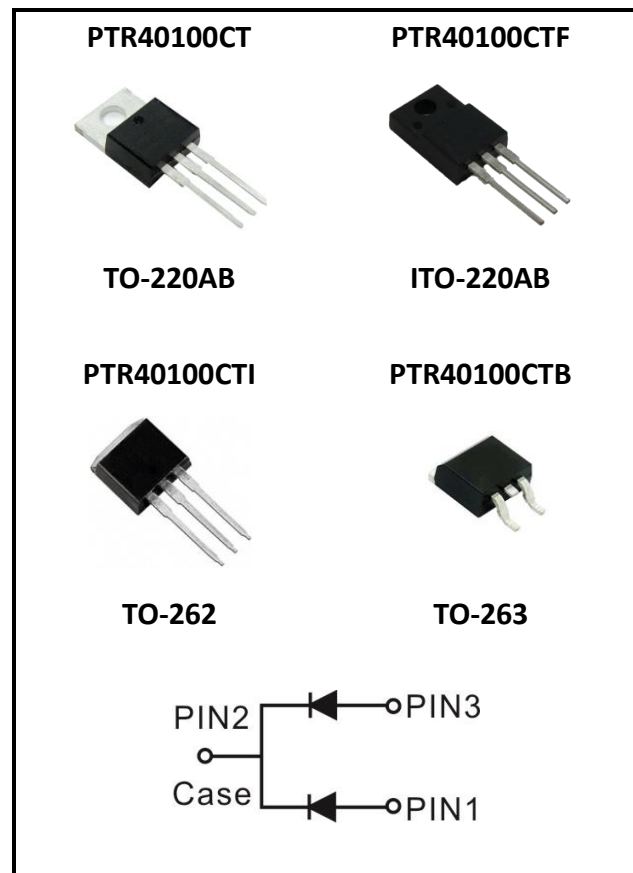
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	$20 \times 2$	A
$V_{RRM}$	100	V
$V_F@ 20A, T_J=125^\circ C$	0.67	V, typ.
$T_J$ Operating Junction Temperature	-40 to +150	$^\circ C$

### Features

- 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	$I_o$	40	Amps
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)	$V_{AC}$	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 <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>*</sup>	0.49	-----	Volts
	IF = 10 A			0.58		
	IF = 20 A			-----	0.81	
	IF = 5 A	T <sub>J</sub> = 125 °C		0.43	-----	
	IF = 10 A			0.54		
	IF = 20 A			0.67	0.71	
Instantaneous Reverse Current	V <sub>R</sub> = 70V	T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>*</sup>		-----	uA
	V <sub>R</sub> = 100V			-----	200	uA
	V <sub>R</sub> = 70V	T <sub>J</sub> = 125 °C			-----	mA
	V <sub>R</sub> = 100V				35	mA

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



## 2. Characteristics Curves

### Ratings and Characteristics Curves

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

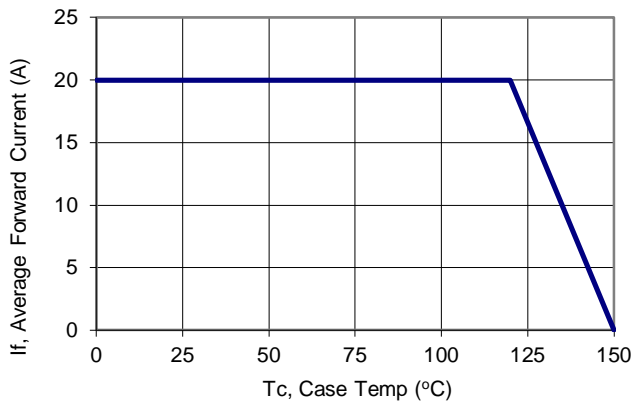


Figure 1: Current Derating, Case

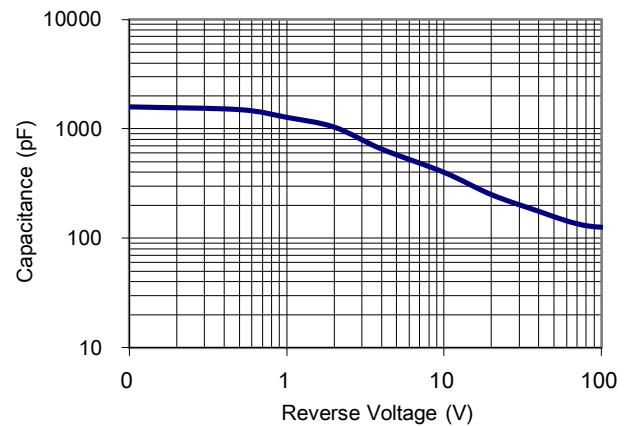


Figure 2: Typical Junction Capacitance

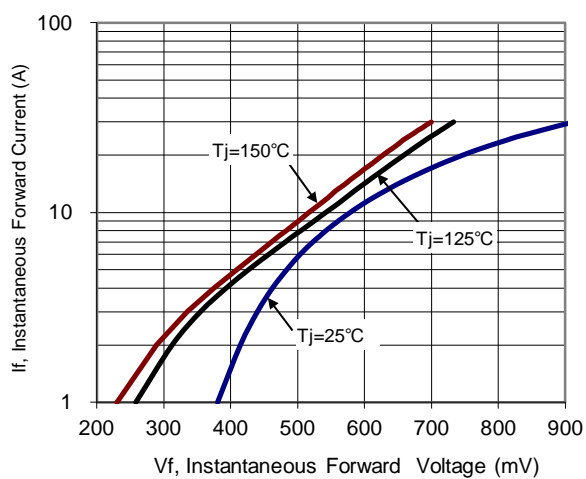


Figure 3: Typical Forward Voltage

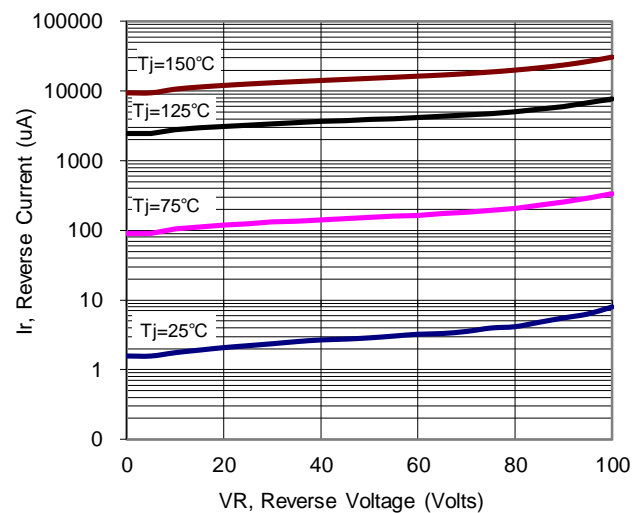


Figure 4: Typical Reverse Current



### 3. Marking information

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#### Top Marking Rule

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**PFC**  
**PTR40100CT**  
**YYWW    ABSH**

PTR40100CT = 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**  
**PTR40100CTF**  
**YYWW    ABSH**

PTR40100CTF = 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**  
**PTR40100CTI**  
**YYWW    ABSH**

PTR40100CTI = 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)

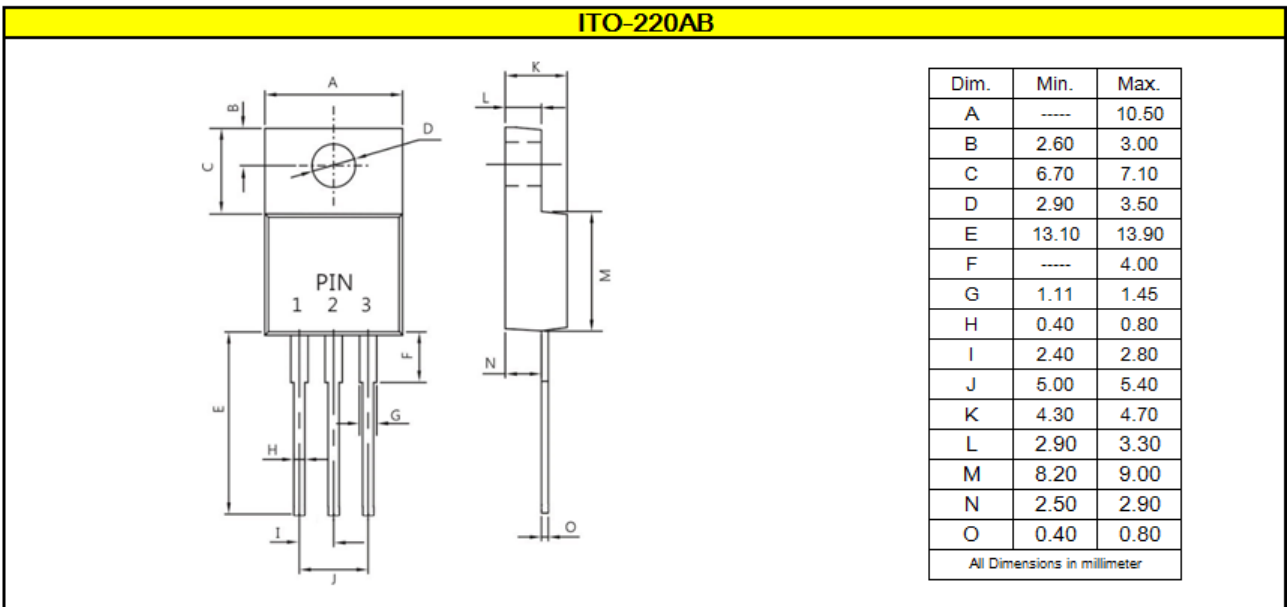
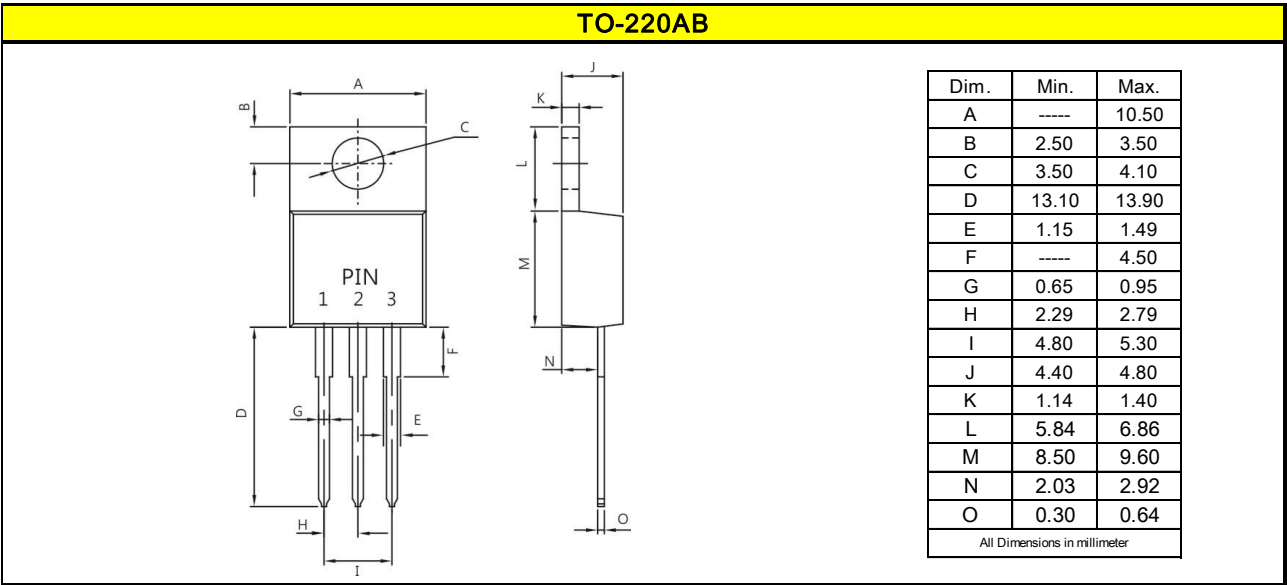
**PFC**  
**PTR40100CTB**  
**YYWW    ABSH**

PTR40100CTB = 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)

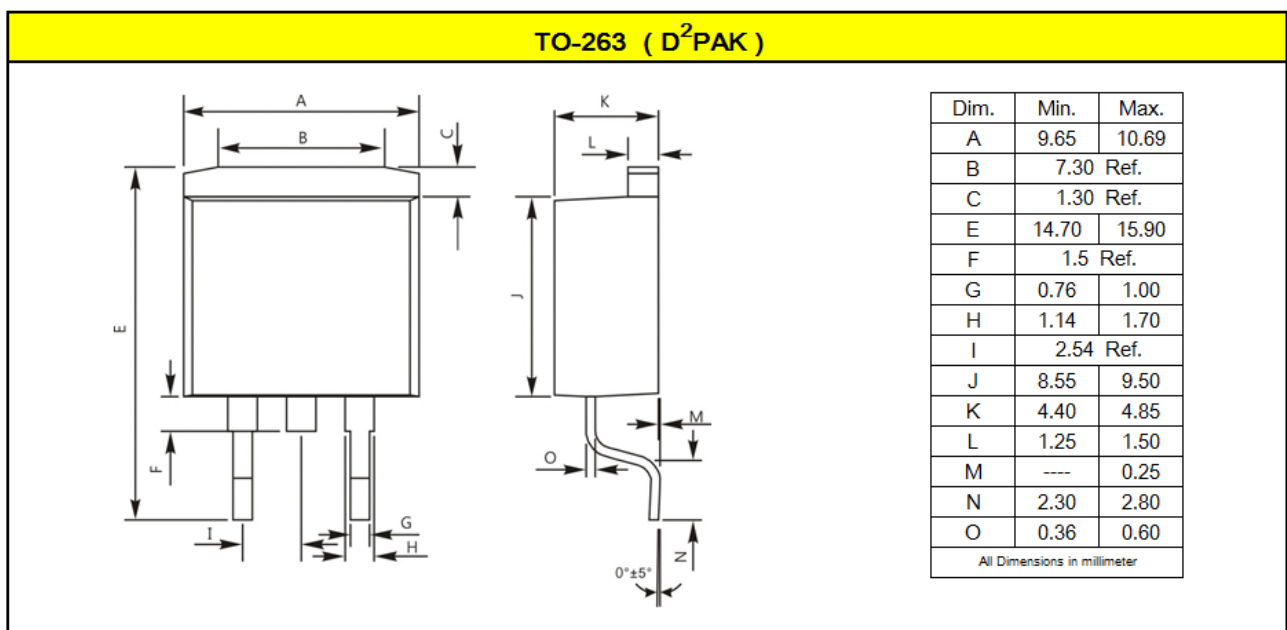
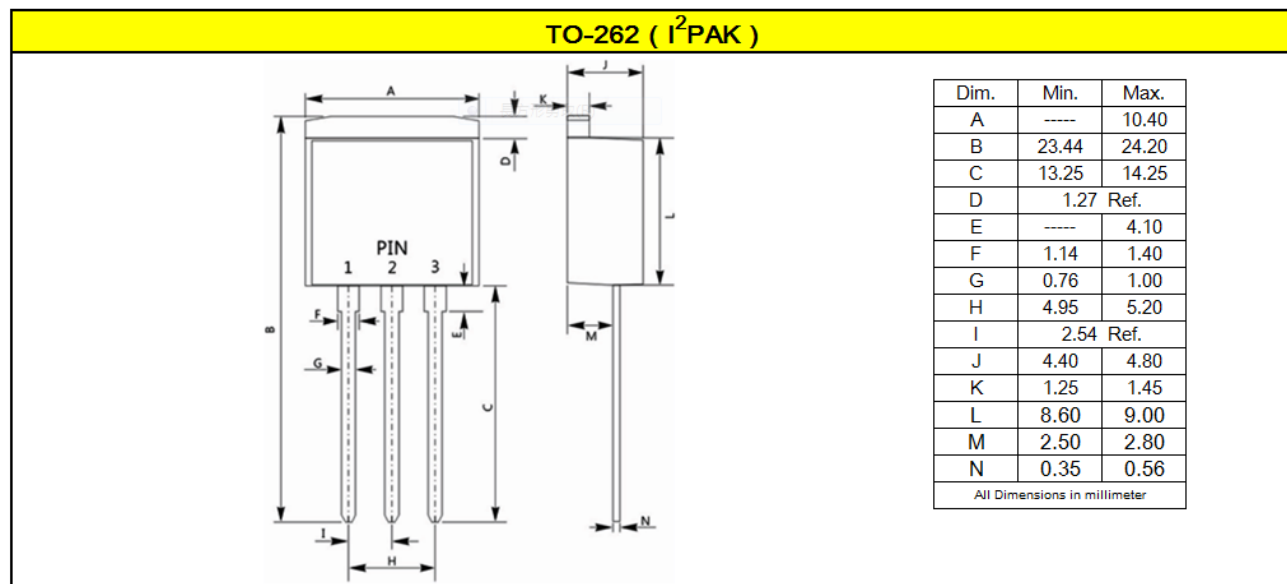


4. Package information

Package Outline Dimensions    millimeters



Package Outline Dimensions    millimeters



## 5. Ordering information

Part Number	Package	Delivery mode
PTR40100CT	TO-220AB	50 pieces / tube
PTR40100CTF	ITO-220AB	50 pieces / tube
PTR40100CTI	TO-262	50 pieces / tube
PTR40100CTB	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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