



PFC Device Corporation

**PFR20200CT**  
**PFR20200CTF**  
**PFR20200CTI**  
**PFR20200CTB**

## 20A 200V MOS Schottky Rectifier

### Major ratings and characteristics

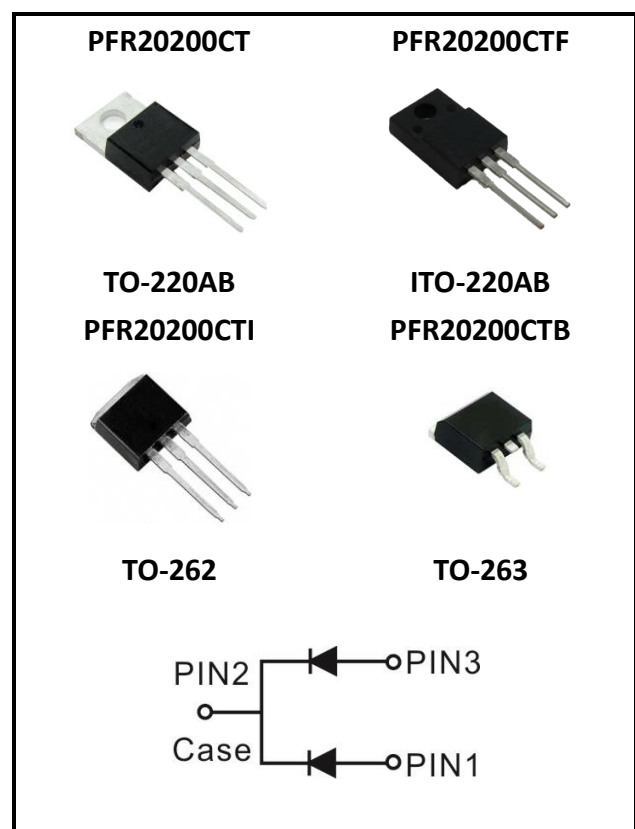
| Characteristics                      | Values      | Units      |
|--------------------------------------|-------------|------------|
| $I_{F(AV)}$ Rectangular Waveform     | 10 × 2      | A          |
| $V_{RRM}$                            | 200         | V          |
| $V_F@ 10A, T_j=125^\circ C$          | 0.72        | V, typ.    |
| $T_j$ Operating Junction Temperature | -65 to +175 | $^\circ C$ |

### Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 175 $^\circ C$  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   | $V_{RM}$       | 200                | Volts                       |
| Working Peak Reverse Voltage  | $V_{RWM}$      |                    |                             |
| Peak Repetitive Reverse Voltage   | $V_{RRM}$      |                    |                             |
| Average Rectified Forward Current<br>Per device<br>(Rated VR-20Khz Square Wave) - 50% duty cycle                          | $I_o$          | 20                 | Amps                        |
| Peak Forward Surge Current - 1/2 60hz   | $I_{FSM}$      | 150                | Amps                        |
| Peak Repetitive Reverse Surge Current (2uS-1Khz)  | $I_{RRM}$      | 0.5                | Amps                        |
| Typical Thermal Resistance (per leg)<br>Package = TO-220AB<br>Package = ITO-220AB<br>Package = TO-262<br>Package = TO-263 | $R\theta_{JC}$ | 2<br>4<br>2.5<br>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  | $T_J$          | - 65 to +175       | $^\circ\text{C}$            |
| Storage Junction Temperature  | $T_{STG}$      | - 65 to +175       |                             |

### Electrical Characteristics - (per leg) ( $T_A = 25^\circ\text{C}$ unless otherwise specified )

| Parameter                     | Test Conditions |                           | Symbol | Typ. | Max. | Units         |
|-------------------------------|-----------------|---------------------------|--------|------|------|---------------|
| Instantaneous Forward Voltage | IF = 10 A       | $T_J = 25^\circ\text{C}$  | VF*    | ---- | 0.95 | Volts         |
|                               |                 | $T_J = 125^\circ\text{C}$ |        | 0.72 | 0.85 |               |
| Instantaneous Reverse Current | At $V_{RM}$     | $T_J = 25^\circ\text{C}$  | IR*    | ---- | 100  | $\mu\text{A}$ |
|                               |                 | $T_J = 125^\circ\text{C}$ |        | ---- | 10   | $\text{mA}$   |

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



2. Characteristics Curves

Ratings and Characteristics Curves ( TA = 25°C unless otherwise specified )

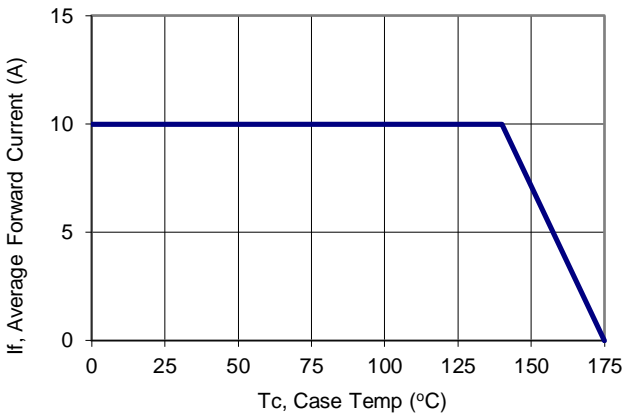


Figure 1: Current Derating, Case

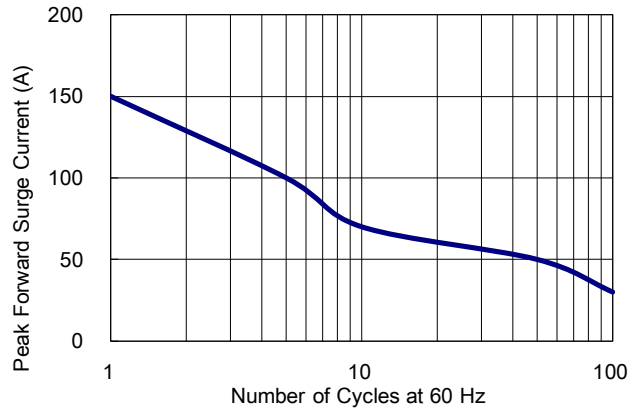


Figure 2: Maximum Repetitive Surge Current

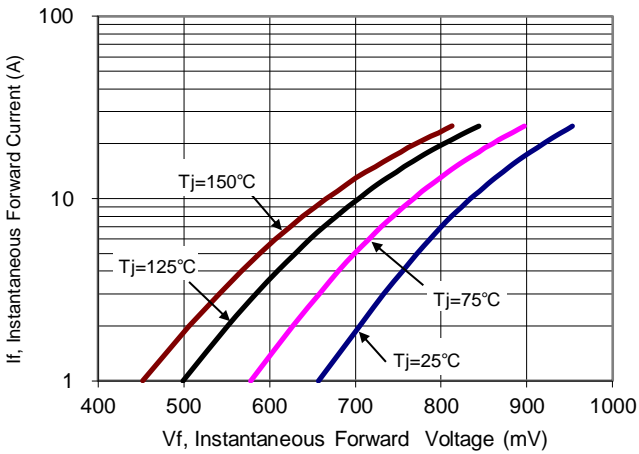


Figure 3: Typical Forward Voltage

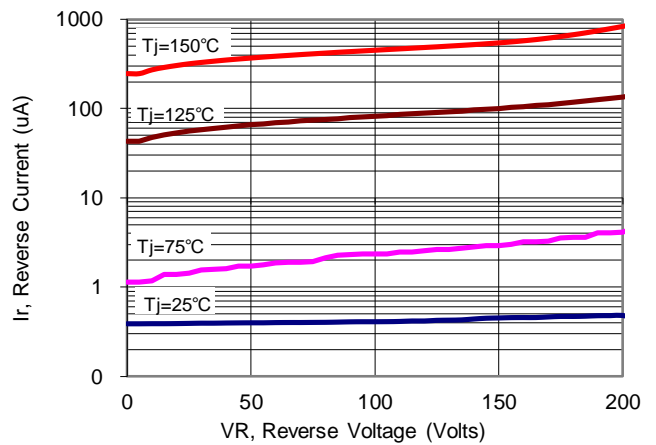


Figure 4: Typical Reverse Current

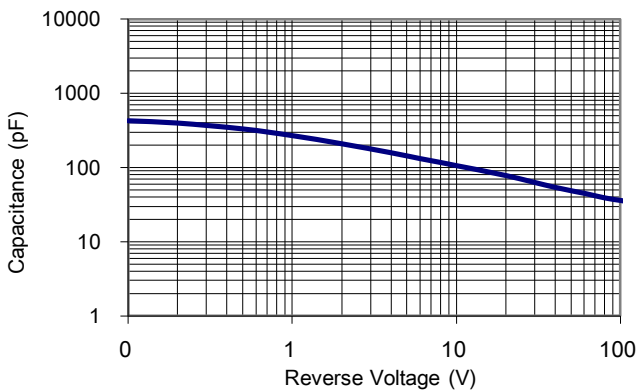


Figure 5: Typical Junction Capacitance



**3. Marking information**

**Top Marking Rule**

**PFC**  
**PFR20200CT**  
**YYWW    ABSH**

PFR20200CT = 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**  
**PFR20200CTF**  
**YYWW    ABSH**

PFR20200CTF = 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**  
**PFR20200CTI**  
**YYWW    ABSH**

PFR20200CTI = 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)

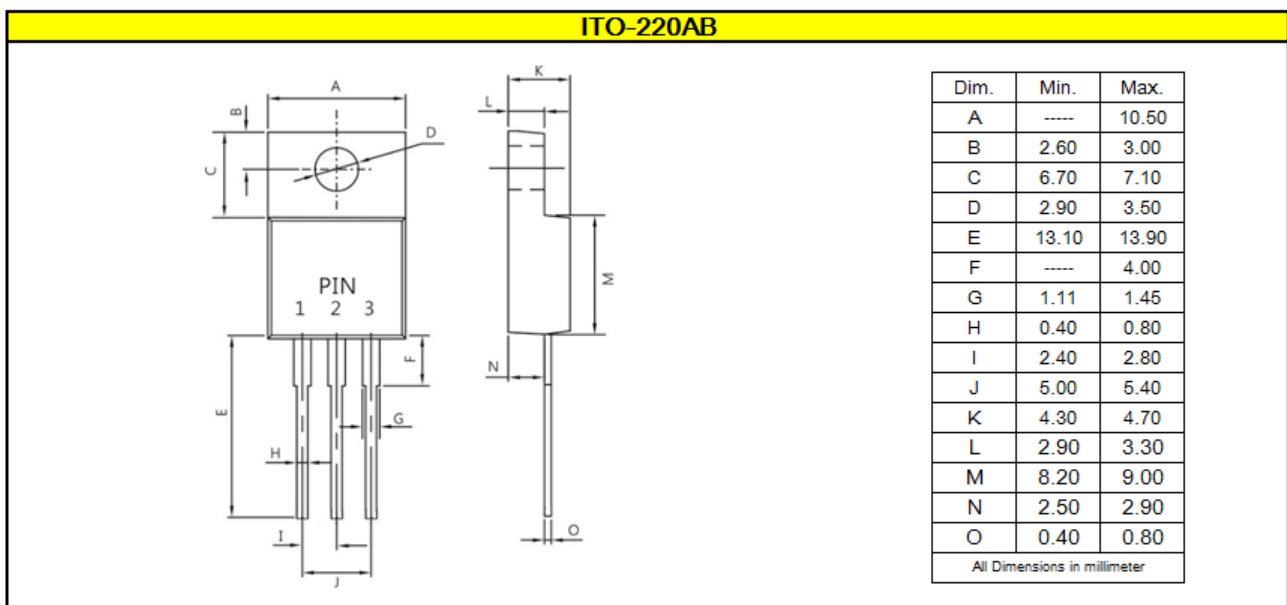
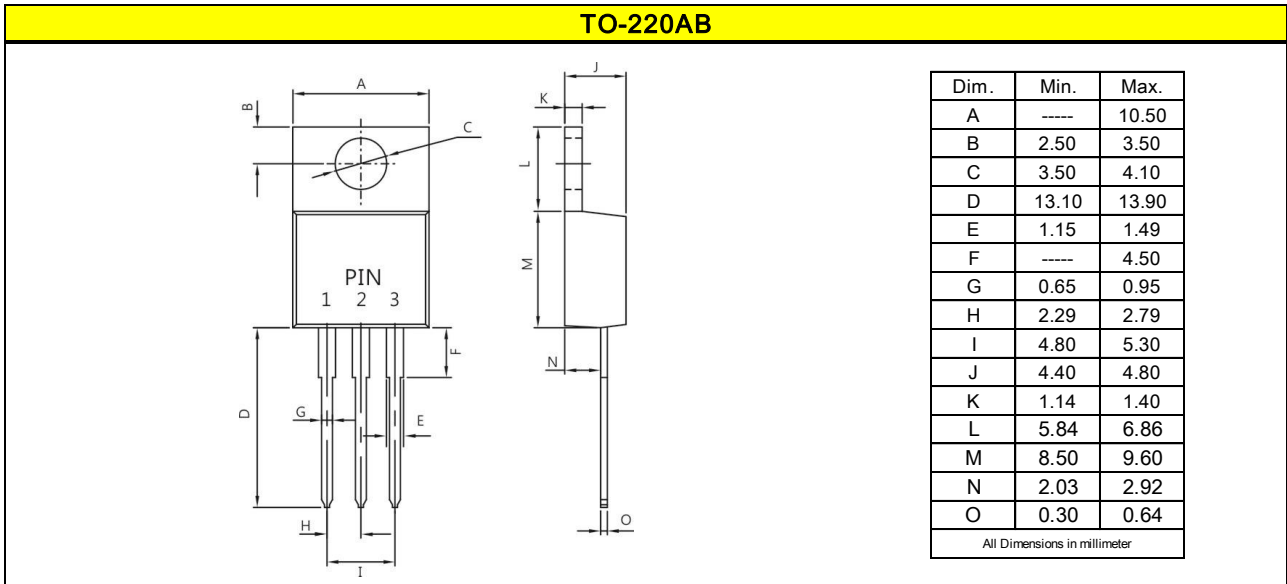
**PFC**  
**PFR20200CTB**  
**YYWW    ABSH**

PFR20200CTB = 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                  |
|-------------|-----------|--------------------------------|
| PFR20200CT  | TO-220AB  | 50 pieces / tube               |
| PFR20200CTF | ITO-220AB | 50 pieces / tube               |
| PFR20200CTI | TO-262    | 50 pieces / tube               |
| PFR20200CTB | 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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