

# PFC Device Corporation

PFR20L45CT PFR20L45CTF PFR20L45CTI PFR20L45CTB

# 20A 45V MOS Schottky Rectifier

# Major ratings and characteristics

Characteristics	Values	Units	
I <sub>F(AV)</sub> Rectangular Waveform	10 × 2	А	
$V_{RRM}$	45	V	
V <sub>F</sub> @ 10A , Tj=125 °C	0.46	V, typ.	
T <sub>J</sub> Operating Junction Temperature	-65 to +150	°C	

### **Features**

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

# TO-220AB ITO-220AB PFR20L45CTB TO-262 TO-263 PIN2 PIN3 Case PIN1

## **Typical Applications**

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

### 1. Characteristics

### **Maximum Ratings Characteristics** ( $T_A = 25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Values	Units
DC Blocking Voltage	$V_{RM}$		
Working Peak Reverse Voltage	$V_{RWM}$	45	Volts
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>		
Average Rectified Forward Current			
Per device	Io	20	Amps
(Rated VR-20Khz Square Wave) - 50% duty cycle			
Peak Forward Surge Current - 1/2 60hz	I <sub>FSM</sub>	180	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I <sub>RRM</sub>	2	Amps
Typical Thermal Resistance (per leg)			
Package = TO-220AB		2	
Package =ITO-220AB	$R\theta_{Jc}$	4	°C/W
Package =TO-262		2.5	
Package =TO-263		3	
Isolation voltage (ITO-220 only)	V <sub>AC</sub>	1500	V
Maximum Rate of Voltage Change ( at Rated $V_R$ )	dv/dt	10000	V/uS
Operating Junction Temperature	Tı	- 65 to +150	°С
Storage Junction Temperature	T <sub>STG</sub>	- 65 to +150	

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

Parameter	Test Con	ditions	Symbol	Тур.	Max.	Units
Instantaneous	IF - 10 A	$T_J = 25$ °C	VF*		0.5	Volte
Forward Voltage	IF = 10 A	T <sub>J</sub> = 125 °C	VF**	0.46	0.48	Volts
Instantaneous	At V <sub>RM</sub>	T <sub>J</sub> = 25 °C	IR*		500	uA
Reverse Current		T <sub>J</sub> = 125 °C			100	mA
* Pulse width < 300 uS, Duty cycle < 2%						

### 2. Characteristics Curves

**Ratings and Characteristics Curves** 

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

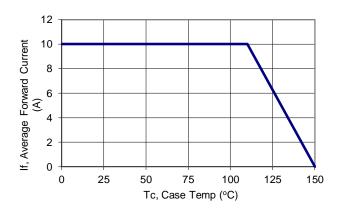
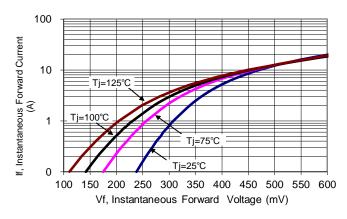
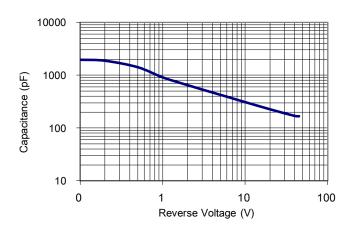


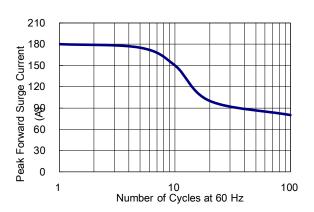
Figure 1: Current Derating, Case



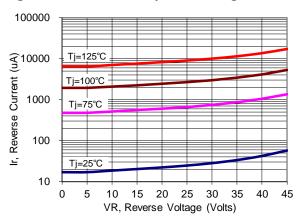
**Figure 3: Typical Forward Voltage** 



**Figure 5: Typical Junction Capacitance** 



**Figure 2: Maximum Repetitive Surge Current** 



**Figure 4: Typical Reverse Current** 

### 3. Marking information

**Top Marking Rule** 

PFC PFR 20L45CT YYWW ABSH PFR20L45CT = 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 PFR 20L45CTF YYWW ABSH PFR20L45CTF = Product Type Marking Code

YYWW = Date Code

YY = Last two digits of year

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H = Halogen Free (N/A = common molding compound)

PFC PFR 20L45CTI YYWW ABSH PFR20L45CTI = Product Type Marking Code

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PFC PFR 20L45CTB YYWW ABSH PFR20L45CTB = 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)

# 5. Ordering information

Part Number	Package	Delivery mode
PFR20L45CT	TO-220AB	50 pieces / tube
PFR20L45CTF	ITO-220AB	50 pieces / tube
PFR20L45CTI	TO-262	50 pieces / tube
PFR20L45CTB	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.