



PFC Device Corporation

PFR40V45CT
PFR40V45CTF
PFR40V45CTI
PFR40V45CTB

40A 45V MOS Schottky Rectifier

Major ratings and characteristics

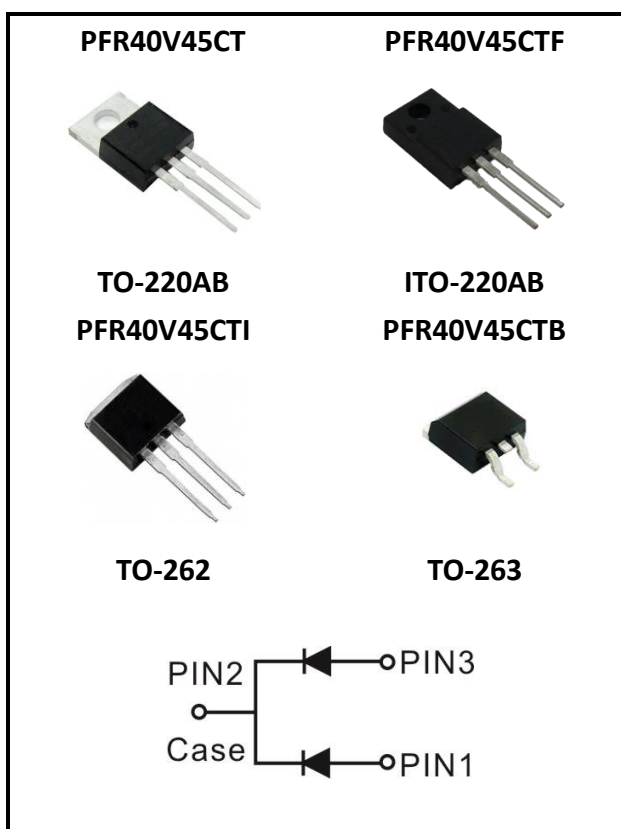
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20×2	A
V_{RRM}	45	V
$V_F@ 20A, T_J=125^\circ C$	0.44	V, typ.
T_J Operating Junction Temperature	-65 to +150	$^\circ C$

Features

- Ultra-Low Forward Voltage 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 ultra-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}	45	Volts
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current Per device	I_o	40	Amps
(Rated VR-20Khz Square Wave) - 50% duty cycle			
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	350	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}	
Maximum Rate of Voltage Change (at Rated V_R)		dv/dt	
Operating Junction Temperature		T_J	
Storage Junction Temperature	T_{STG}	- 65 to +150	$^{\circ}\text{C}$

Electrical Characteristics - (per leg)

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 20 A	$T_J = 25^{\circ}\text{C}$	VF*	----	0.5	Volts
		$T_J = 125^{\circ}\text{C}$		0.44	0.46	
Instantaneous Reverse Current	At V_{RM}	$T_J = 25^{\circ}\text{C}$	IR*	----	500	μA
		$T_J = 125^{\circ}\text{C}$		----	100	mA

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



2. Characteristics Curves

Ratings and Characteristics Curves

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

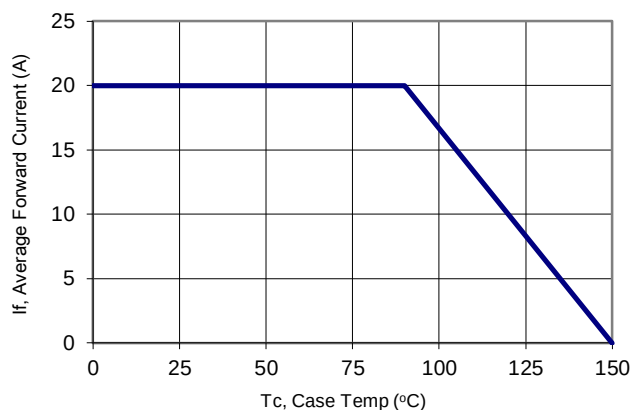


Figure 1: Current Derating, Case

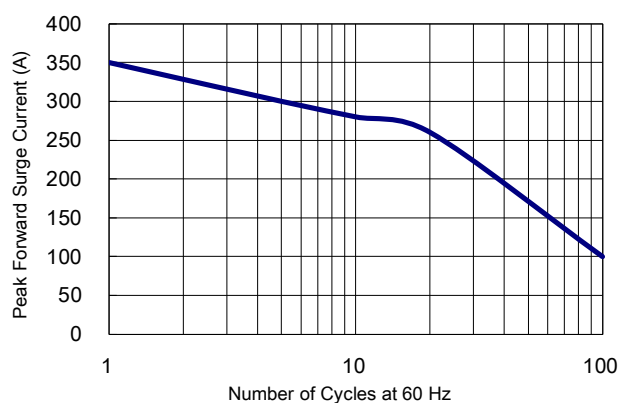


Figure 2: Maximum Repetitive Surge Current

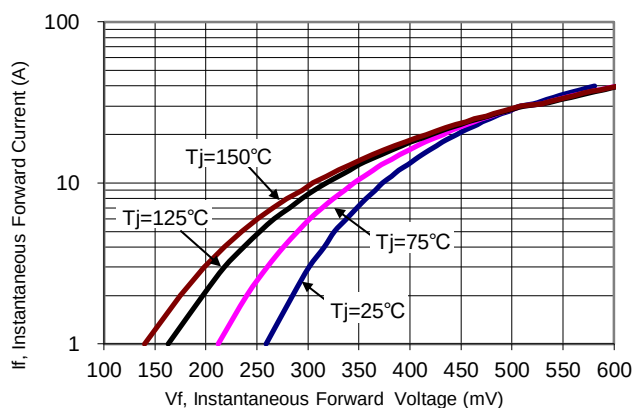


Figure 3: Typical Forward Voltage

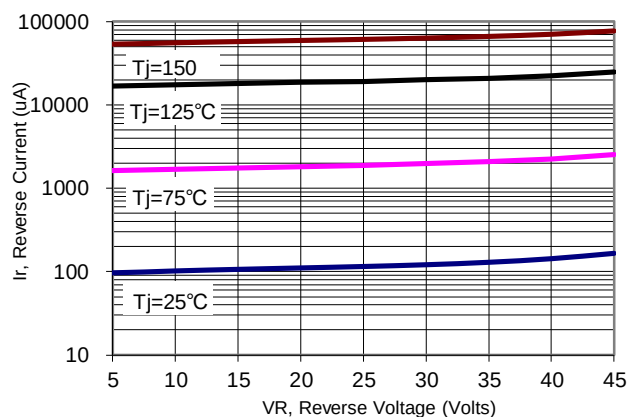


Figure 4: Typical Reverse Current

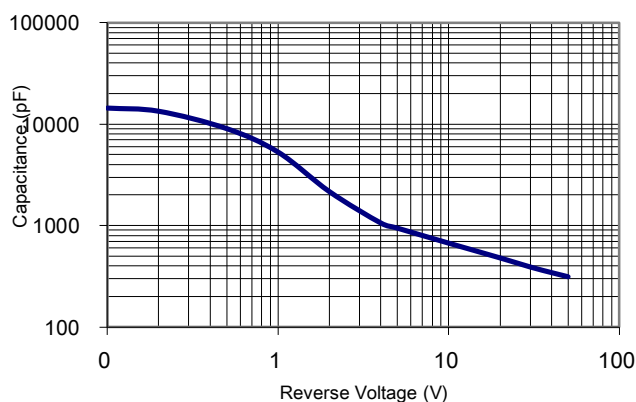


Figure 5: Typical Junction Capacitance



3. Marking information

Top Marking Rule

PFC PFR
40V45CT
YYWW ABSH

PFR40V45CT = 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
40V45CTF
YYWW ABSH

PFR40V45CTF = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
AB = Assembly code
S = Series Number
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PFC PFR
40V45CTI
YYWW ABSH

PFR40V45CTI = Product Type Marking Code
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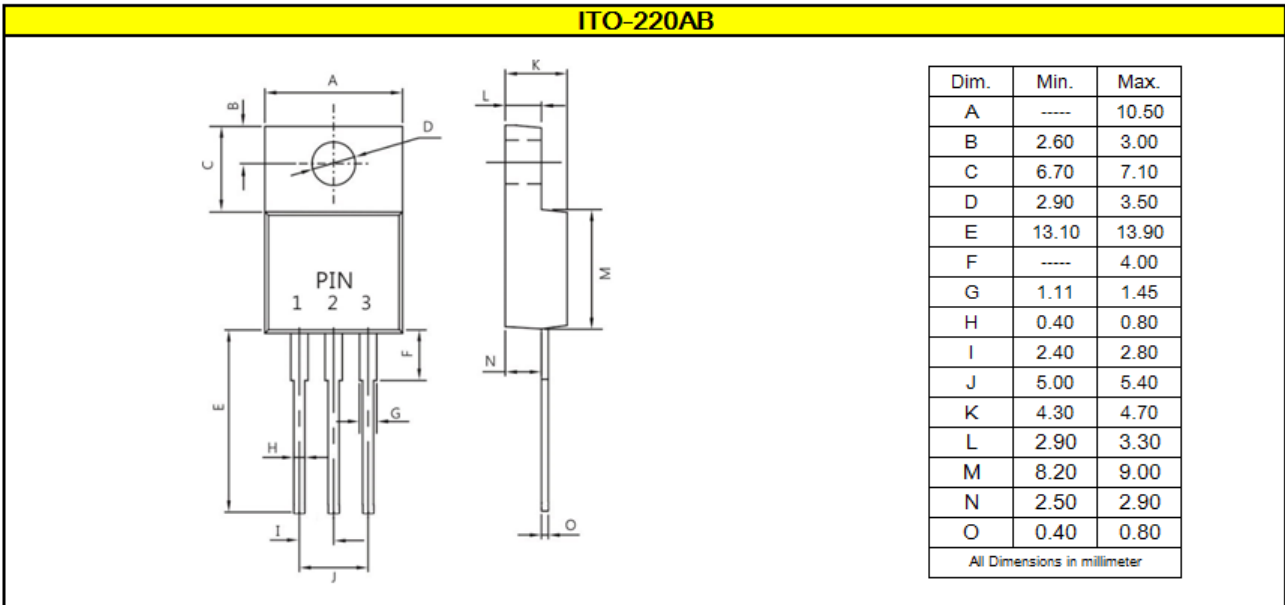
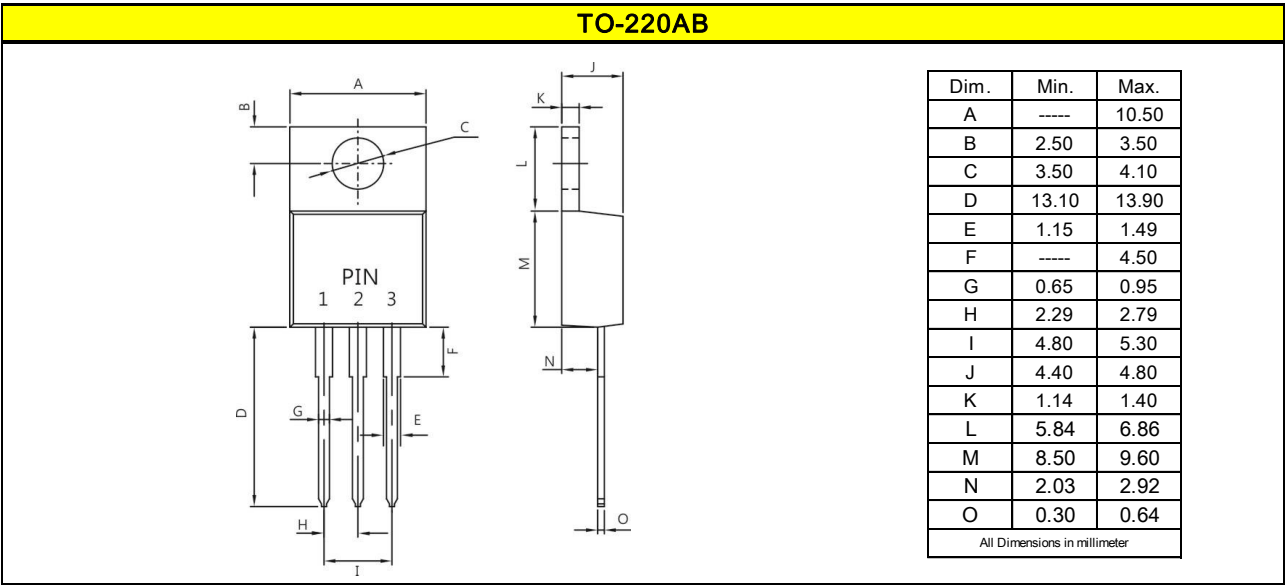
PFC PFR
40V45CTB
YYWW ABSH

PFR40V45CTB = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
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S = Series Number
H = Halogen Free (N/A = common molding compound)

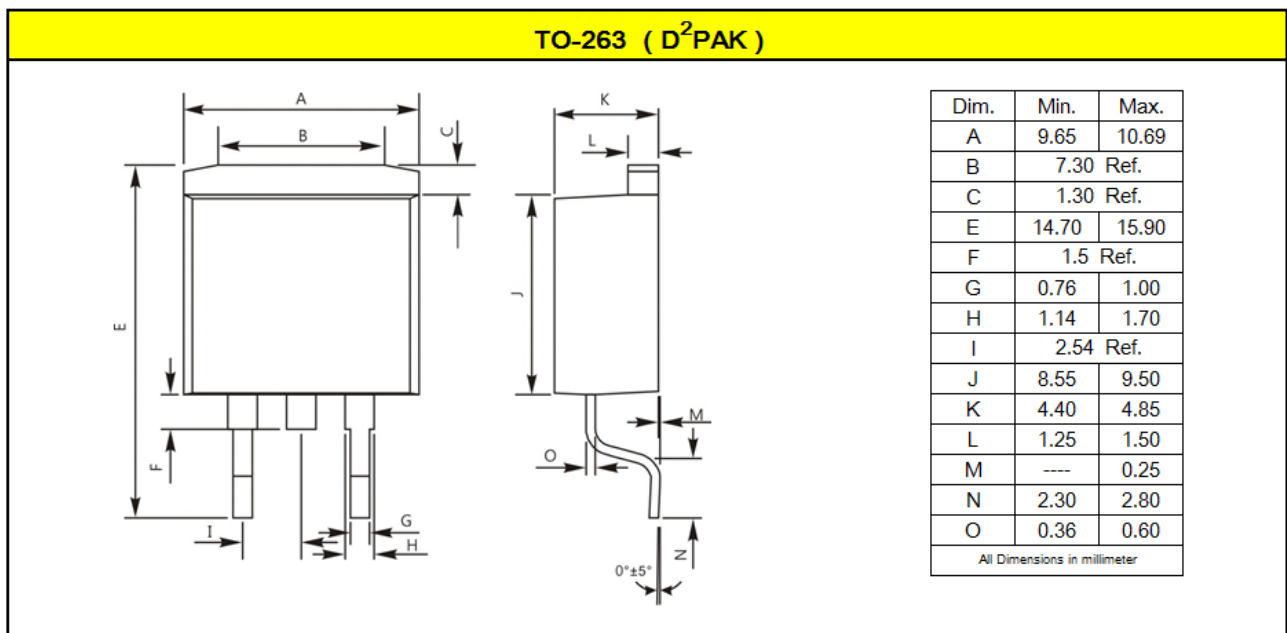
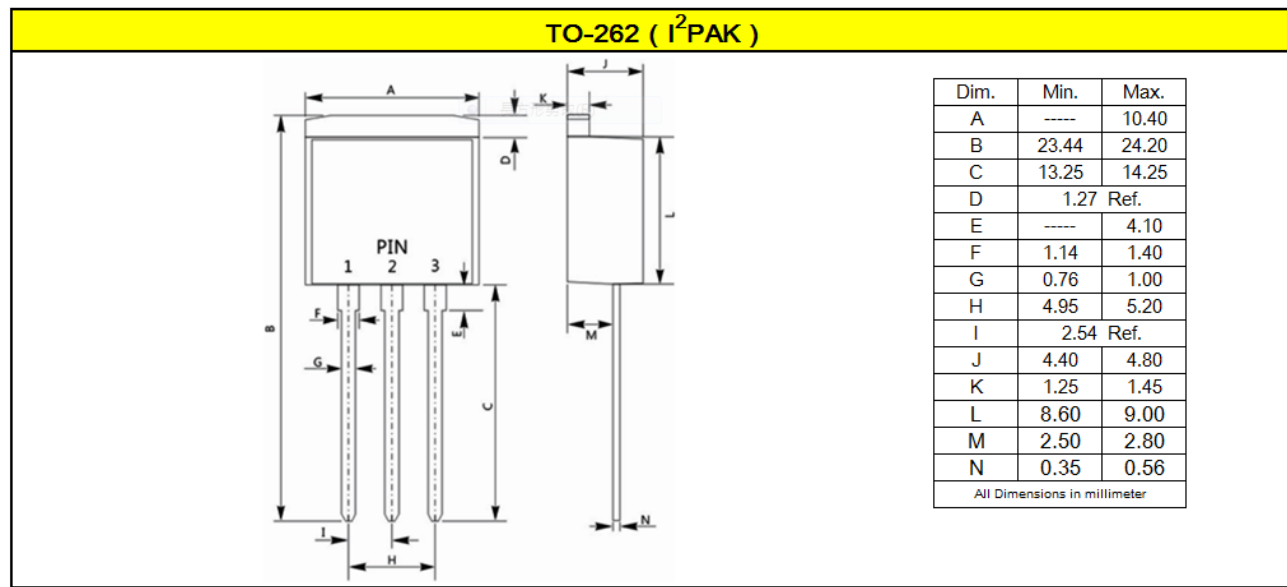


4. Package information

Package Outline Dimensions millimeters



Package Outline Dimensions millimeters



5. Ordering information

Part Number	Package	Delivery mode
PFR40V45CT	TO-220AB	50 pieces / tube
PFR40V45CTF	ITO-220AB	50 pieces / tube
PFR40V45CTI	TO-262	50 pieces / tube
PFR40V45CTB	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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