



PFC Device Corporation

# PFR40V300PT PFR40V300PT-L

## 40A 300V MOS Schottky Rectifier

### Major ratings and characteristics

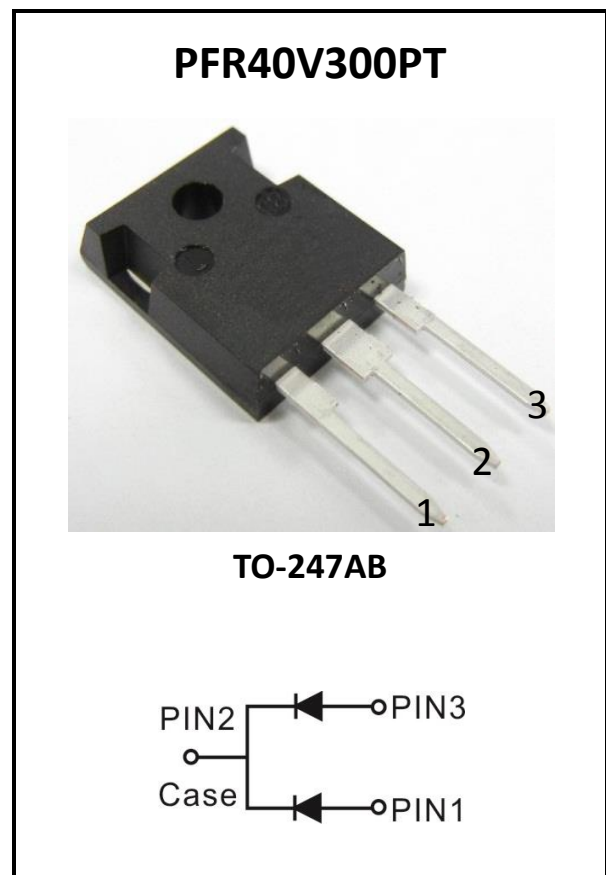
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20 × 2	A
$V_{RRM}$	300	V
$V_F@ 20A, T_j=125^\circ C$	0.73	V, typ.
$T_j$ Operating Junction Temperature	-65 to +175	$^\circ C$

### Features

- Ultra 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 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	$V_{RM}$	300	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)	$I_{RRM}$	0.5	Amps
Typical Thermal Resistance (per leg)	$R\theta_{JC}$	1.5	$^\circ\text{C} / \text{W}$
Maximum Rate of Voltage Change ( at Rated VR )	$dv/dt$	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
Breakdown Voltage	$I_R = 0.5\text{mA}$	$T_J = 25^\circ\text{C}$	$V_B^*$	300 (min.)		V
Instantaneous Forward Voltage	$I_F = 20\text{A}$	$T_J = 25^\circ\text{C}$	$V_F^*$	----	0.89	Volts
		$T_J = 125^\circ\text{C}$		0.73	0.78	
Instantaneous Reverse Current	At $V_{RM}$	$T_J = 25^\circ\text{C}$	$I_R^*$	----	100	$\mu\text{A}$
		$T_J = 125^\circ\text{C}$		----	20	$\text{mA}$

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



## 2. Characteristics Curves

### Ratings and Characteristics Curves

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

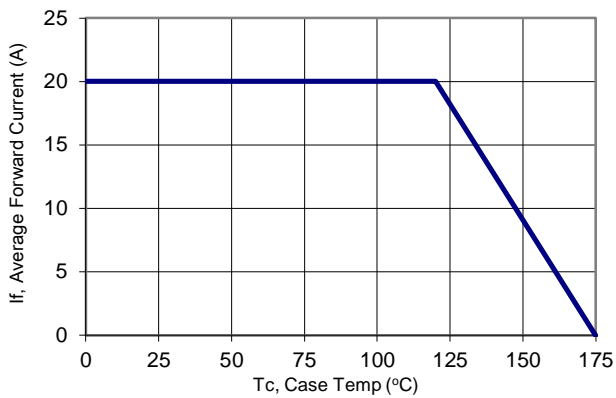


Figure 1: Current Derating, Case

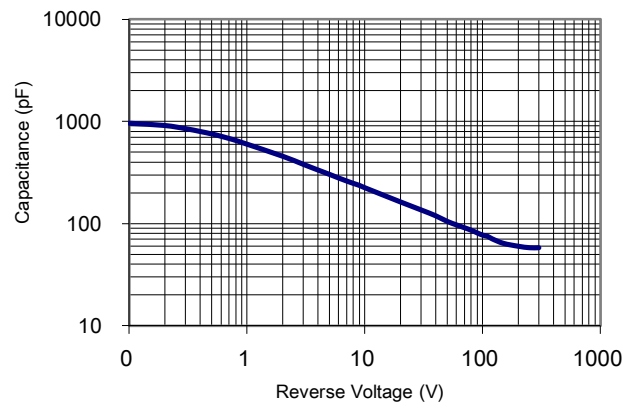


Figure 2: Typical Junction Capacitance

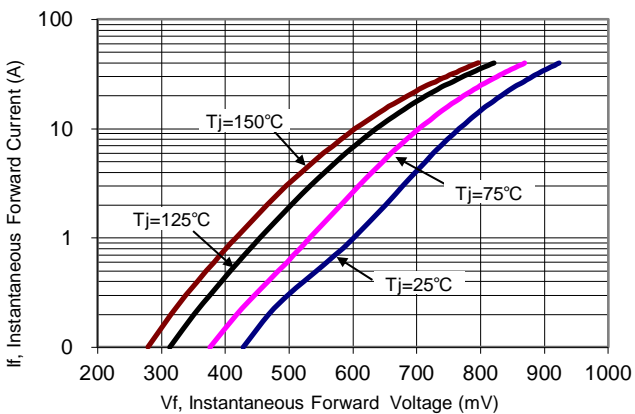


Figure 3: Typical Forward Voltage

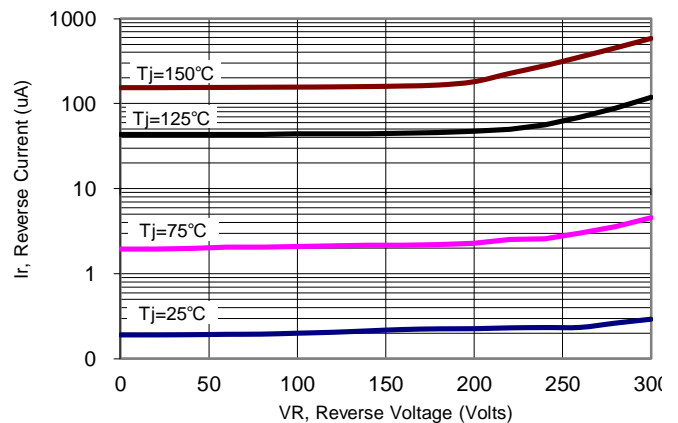


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule



PFR40V300PT = 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

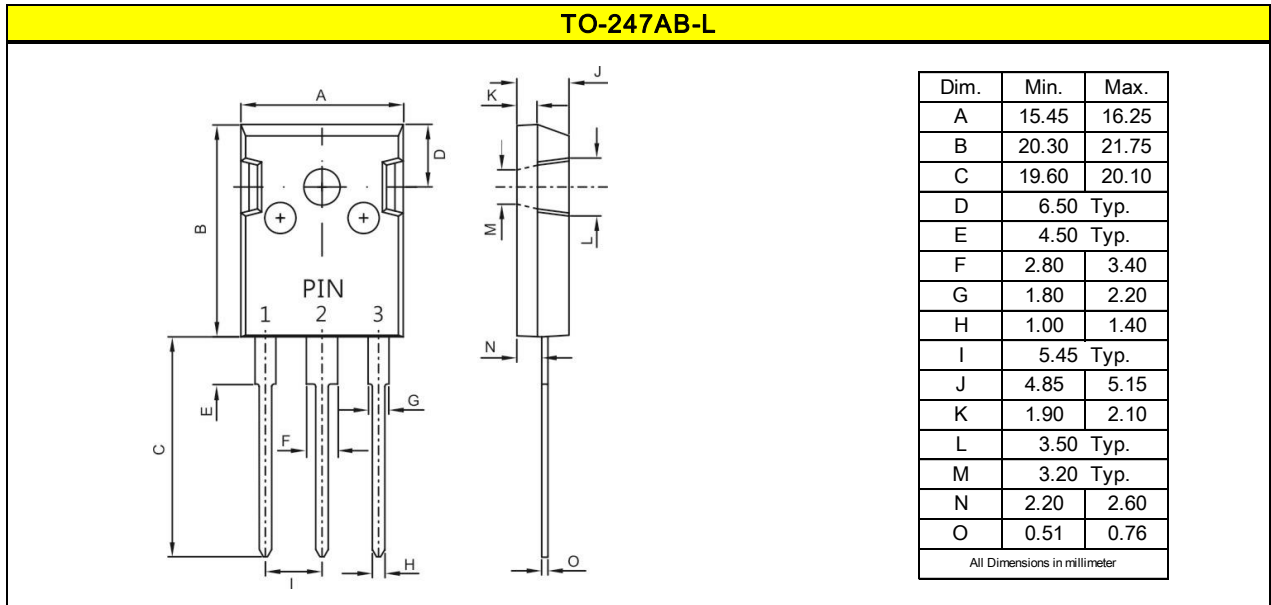
Package Outline Dimensions millimeters

**TO-247AB**

Dim.	Min.	Max.
A	15.20	16.00
B	19.13	20.87
C	13.00	16.00
D	5.50 Typ.	
E	4.00 Typ.	
F	2.80	3.20
G	1.70	2.30
H	0.88	1.52
I	5.45 Typ.	
J	4.66	5.34
K	1.17	1.37
L	4.00 Typ.	
M	3.60 Typ.	
N	2.20	2.60
O	0.42	0.58

All Dimensions in millimeter





### 5. Ordering information

Part Number	Package	Delivery mode
PFR40V300PT	TO-247AB	30 pieces / tube
PFR40V300PT-L	TO-247AB-L(long lead)	30 pieces / tube

Note: For Halogen Free molding compound, add "H" suffix to part number above.

#### Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.16 ounces (4.53grams) - TO-247AB  
0.197 Ounces (5.6grams) – TO-247AB-L (long lead)  
Mounting Torque : 10 in-lbs maximum.



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