PFC15V45R

PFC Device Corporation

15A 45V MOS Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	15	A
V_{RRM}	45	V
V_F@ 15A , Tj=125 °C	0.49	V, typ.
T_J Operating Junction Temperature	-65 to +200	°C

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Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 200°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 °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 (Rated VR-20Khz Square Wave) - 50% duty cycle	I_o	15	Amps
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	250	Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	2	Amps
Typical Thermal Resistance (Note 1)	$R\theta_{JA}$	50	°C / W
	$R\theta_{JC}$	3.5	
Maximum Rate of Voltage Change (at Rated VR)	dv/dt	10000	V/uS
Operating Junction Temperature — VR ≦ 80% V_{RRM}	T_J	- 65 to +150	°C
Operating Junction Temperature — DC Forward mode		≦ 200	
Storage Junction Temperature	T_{STG}	- 65 to +200	

Electrical Characteristics (T_A = 25 °C unless otherwise specified)

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 15 A	T_J = 25 °C	VF*	----	0.57	Volts
		T_J = 125 °C		0.49	0.55	
Instantaneous Reverse Current	At V_{RM}	T_J = 25 °C	IR*	----	200	uA
		T_J = 125 °C		----	75	mA

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

Note:

(1) Without heatsink, free air; units mounted on PCB with 2 mm x 2 mm copper pad areas at 9.5 mm lead length

(2) Leads clipped at 3 mm lead length from plastic body on 7.0 cm x 2.2 cm x 1.9 cm x 2 heatsink

2. Characteristics Curves

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

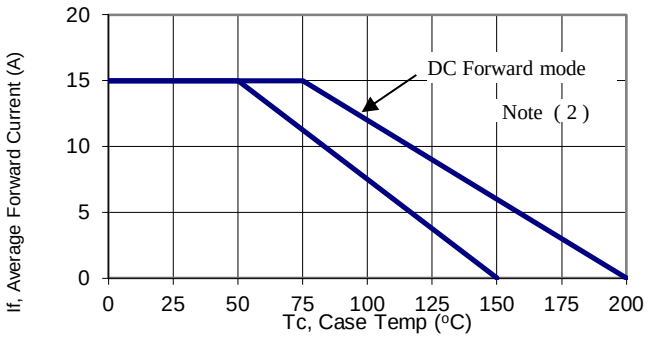


Figure 1: Current Derating, Case

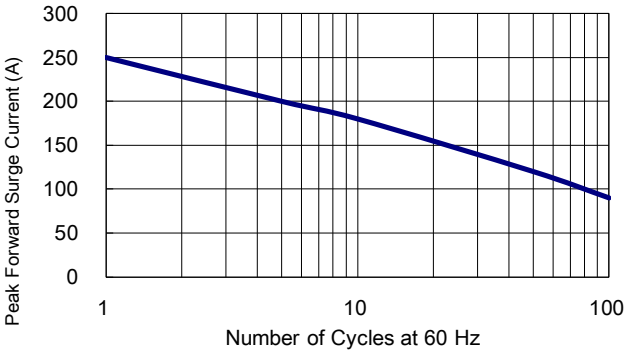


Figure 2: Maximum Repetitive Surge Current

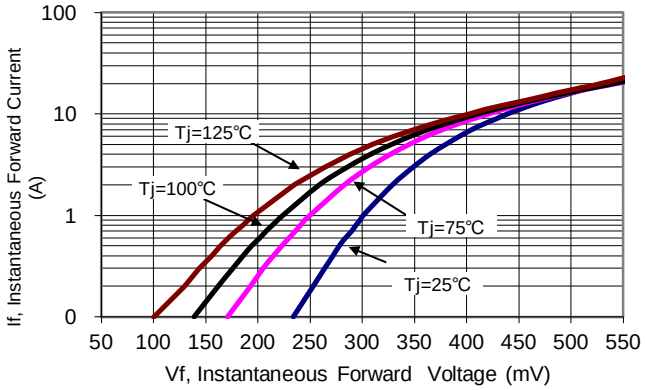


Figure 3: Typical Forward Voltage

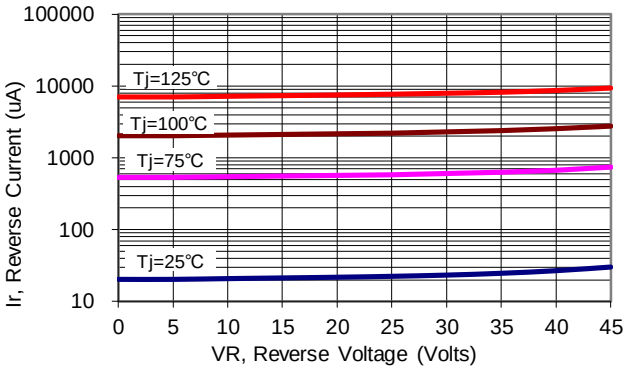


Figure 4: Typical Reverse Current

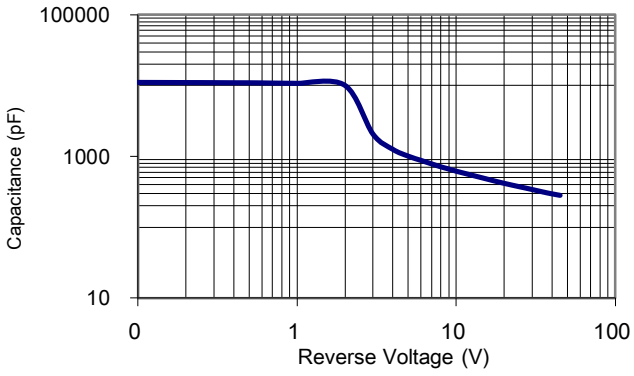
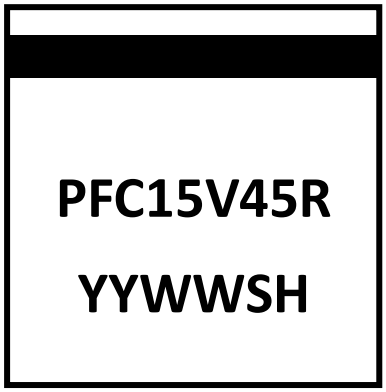


Figure 5: Typical Junction Capacitance

3. Marking information

Top Marking Rule



PFC15V45R = Product Type Marking Code
YYWW = Date Code
YY = Last two digits of year
WW = Week code
S = Series Number
H = Halogen Free (N/A = common molding compound)

4. Package information

Package Outline Dimensions millimeters

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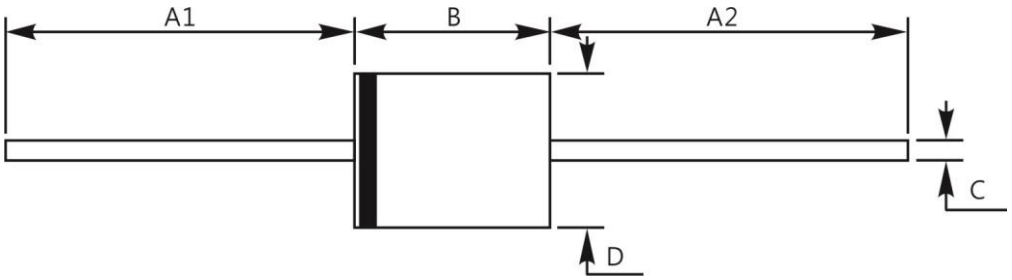

Dim.	Min.	Max.
A1	25.4 typ.	
A2	25.4 typ.	
B	8.6	9.1
C	1.2	1.3
D	8.6	9.1
All Dimensions in millimeter		

5. Ordering information

Part Number	Package	Delivery mode
PFC15V45R	R6	500 pieces / ammo-pack
PFC15V45RH		

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 (2.1grams) – R-6