



PFC Device Corporation

PFC15V45R

15A 45V MOS Schottky Rectifier

Major ratings and characteristics

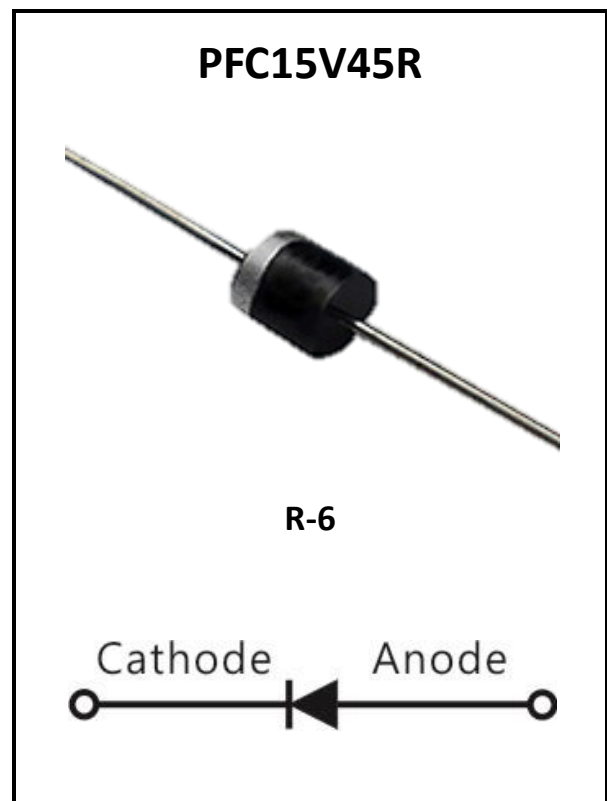
Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	15	A
V_{RRM}	45	V
$V_F@ 15A, T_J=125^\circ C$	0.49	V, typ.
T_J Operating Junction Temperature	-65 to +200	$^\circ C$

Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 200 $^\circ C$ 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}	45	Volts
Working Peak Reverse Voltage		V_{RWM}		
Peak Repetitive Reverse Voltage		V_{RRM}		
Average Rectified Forward Current		I_o	15	Amps
(Rated VR-20Khz Square Wave) - 50% duty cycle				
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	$^{\circ}\text{C} / \text{W}$
		$R\theta_{JC}$	3.5	
Maximum Rate of Voltage Change (at Rated VR)		dv/dt	10000	V/uS
Operating Junction Temperature	$VR \leq 80\% V_{RRM}$	T_J	- 65 to +150	$^{\circ}\text{C}$
	DC Forward mode		≤ 200	
Storage Junction Temperature		T_{STG}	- 65 to +200	

Electrical Characteristics

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

Parameter	Test Conditions		Symbol	Typ.	Max.	Units
Instantaneous Forward Voltage	IF = 15 A	$T_J = 25^{\circ}\text{C}$	VF*	----	0.57	Volts
		$T_J = 125^{\circ}\text{C}$		0.49	0.55	
Instantaneous Reverse Current	At V_{RM}	$T_J = 25^{\circ}\text{C}$	IR*	----	200	μA
		$T_J = 125^{\circ}\text{C}$		----	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

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

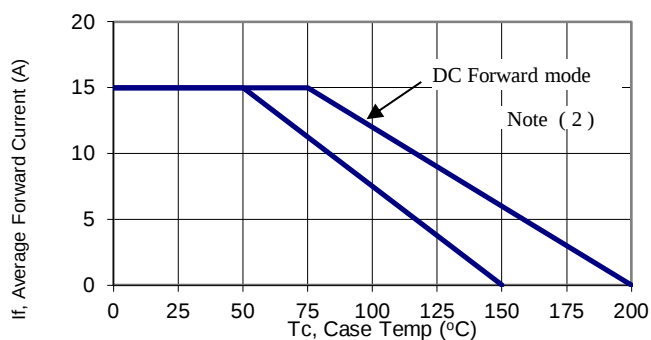


Figure 1: Current Derating, Case

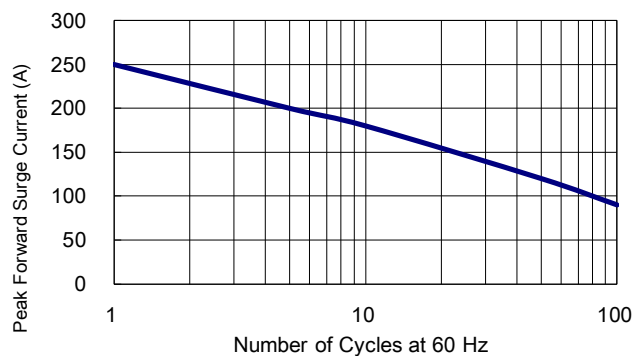


Figure 2: Maximum Repetitive Surge Current

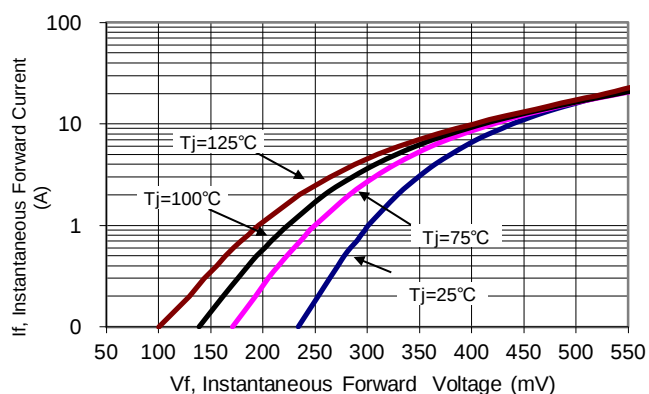


Figure 3: Typical Forward Voltage

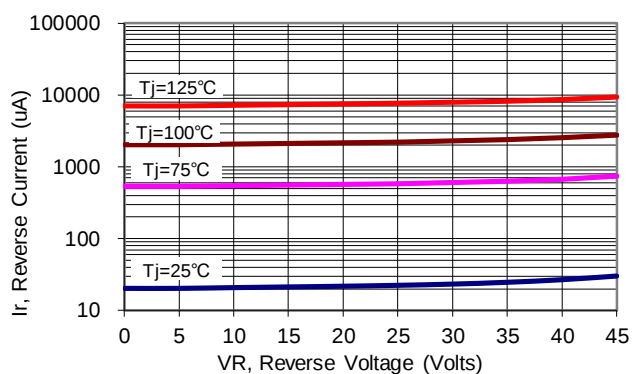


Figure 4: Typical Reverse Current

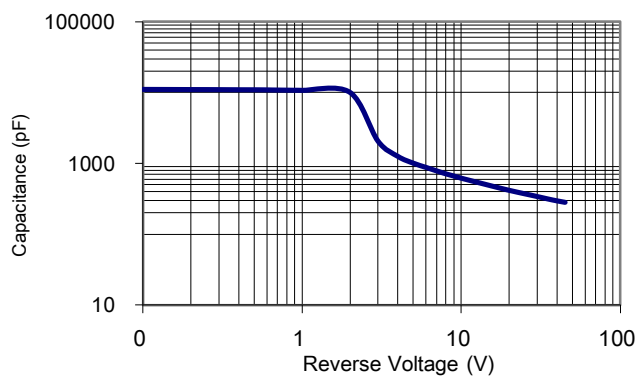
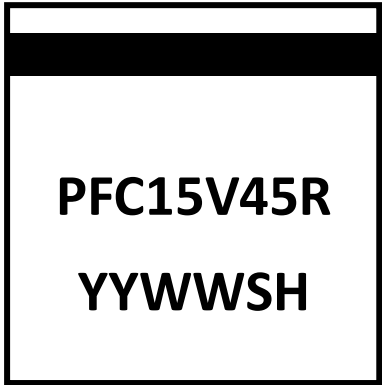


Figure 5: Typical Junction Capacitance



3. Marking information

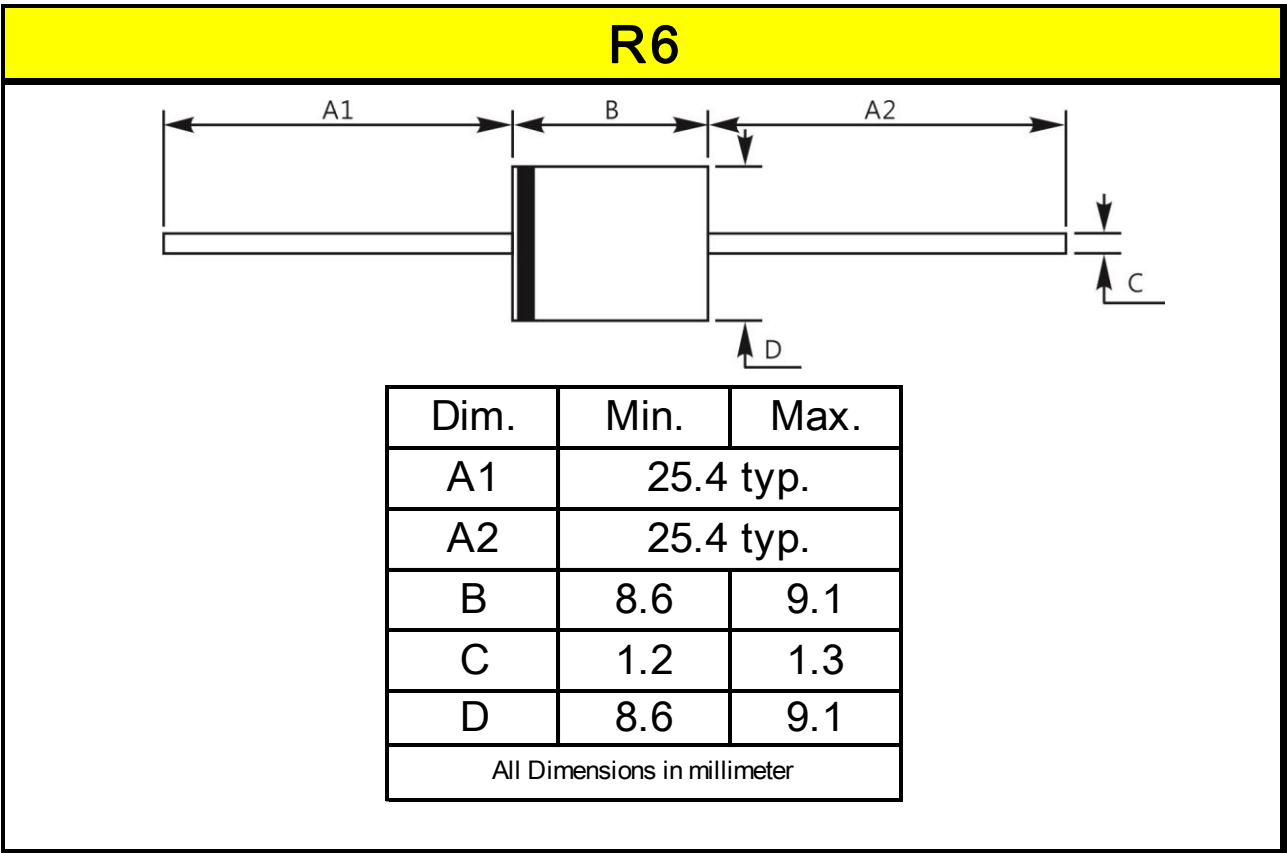
Top Marking Rule



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



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

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