

TO-247AC

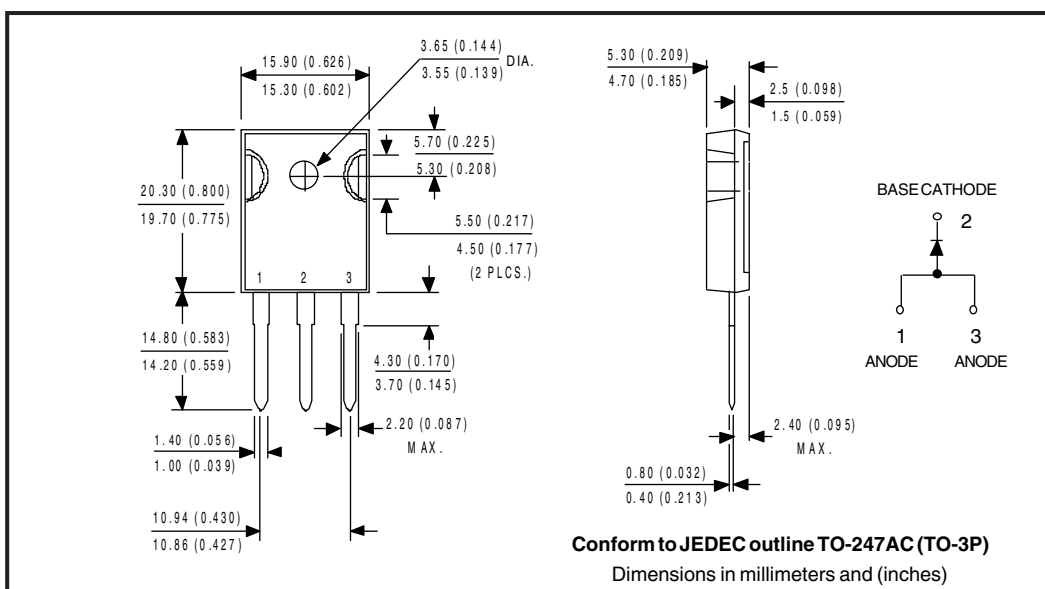
Major Ratings and Characteristics

Characteristics	65PQ015	Units
$I_{F(AV)}$ Rectangular waveform	65	A
V_{RRM}	15	V
I_{FSM} @ $t_p = 5 \mu s$ sine	1500	A
V_F @ 65Apk, $T_J = 125^\circ C$	0,46	V
T_J range	-55 to 125	$^\circ C$

Description/Features

The 65PQ015 Schottky rectifier has been optimized for Ultra low forward voltage drop. This device has been specifically designed to be the best solution as OR-ing diode in fault tolerant power supplies equipment.

- TO-247 package
- High efficiency
- Ultra low forward voltage drop
- Optimized for OR-ing application of 3V, 5V



65PQ015

PD-20998 rev. A 11/99

International
IOR Rectifier

Voltage Ratings

Part number	65PQ015
V_R Max. DC Reverse Voltage (V) @ $T_J = 100^\circ\text{C}$	15
V_R Max. DC Reverse Voltage (V) @ $T_J = 125^\circ\text{C}$	5

Absolute Maximum Ratings

Parameters	60PQ015	Units	Conditions		
$I_{F(AV)}$ Max. Average Forward Current	65	A	50% duty cycle @ $T_C = 83^{\circ}\text{C}$, rectangular waveform		
I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current	1500	A	5 μs Sine or 3 μs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied	
	400		10ms Sine or 6ms Rect. pulse		
E_{AS} Non-Repetitive Avalanche Energy	9	mJ	$T_J = 25^{\circ}\text{C}$, $I_{AS} = 2$ Amps, $L = 4.5$ mH		
I_{AR} Repetitive Avalanche Current	2	A	Current decaying linearly to zero in 1 μsec Frequency limited by T_J max. $V_A = 1.5 \times V_R$ typical		

Electrical Specifications

Parameters		65PQ015	Units	Conditions	
V _{FM} Forward Voltage Drop (1)		0,50	V	@ 65A	T _J = 25 °C
		0,71	V	@ 130A	
		0,46	V	@ 65A	T _J = 125 °C
		0,76	V	@ 130A	
I _{RM} Reverse Leakage Current (1)		18	mA	T _J = 25 °C	V _R = rated V _R
		870	mA	T _J = 100 °C	
		1.2	A	T _J = 125 °C	V _R = 5V
V _{F(TO)} Threshold Voltage		0,137	mV	T _J = T _J max.	
r _t Forward Slope Resistance		4,9	mΩ		
C _T Max. Junction Capacitance		4300	pF	V _R = 5V _{DC} , (test signal range 100Khz to 1Mhz) 25°C	
L _S Typical Series Inductance		8	nH	Measured lead to lead 5mm from package body	
dv/dt Max. Voltage Rate of Change (Rated V _R)		10,000	V/ μs		

(1) Pulse Width < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications

Parameters		65PQ015	Units	Conditions
T _J	Max. Junction Temperature Range	-55to125	°C	
T _{stg}	Max. Storage Temperature Range	-55to150	°C	
R _{thJC}	Max. Thermal Resistance Junction to Case	0.8	°C/W	DC operation
R _{thCS}	Typical Thermal Resistance, Case to Heatsink	0.3	°C/W	Mounting surface, smooth and greased
wt	Approximate Weight	6(0.21)	g(oz.)	
T	Mounting Torque	Min. 6(5)	Kg-cm (lbf-in)	Non-lubricated threads
		Max. 12(10)		
Case Style		TO-247AC(TO-3P)		JEDEC

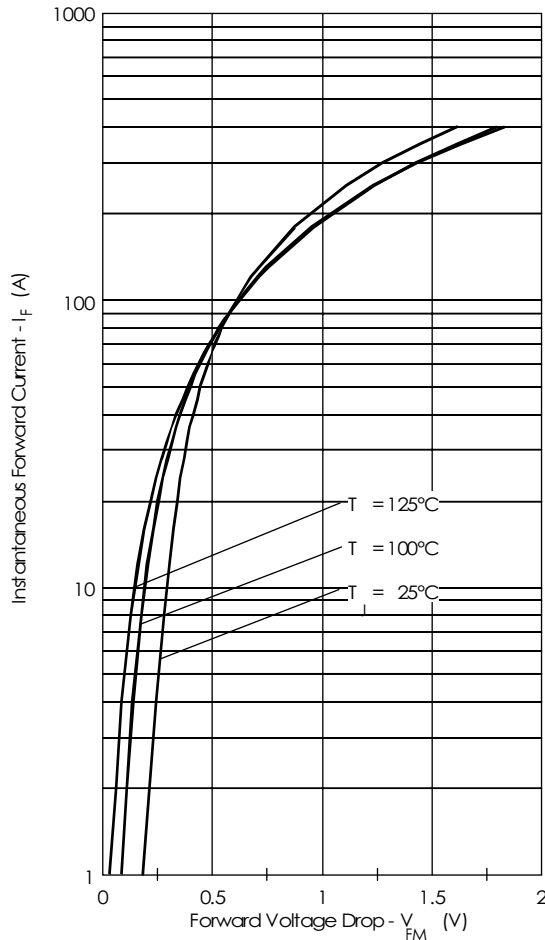


Fig. 1 - Maximum Forward Voltage Drop Characteristics

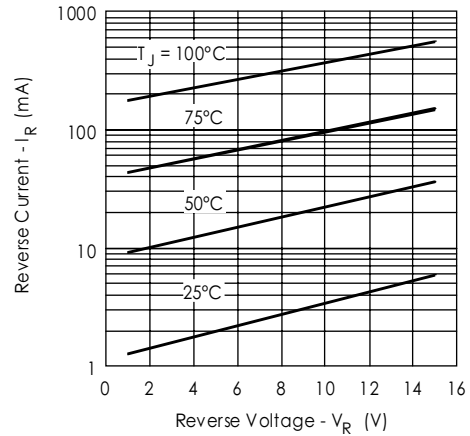


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

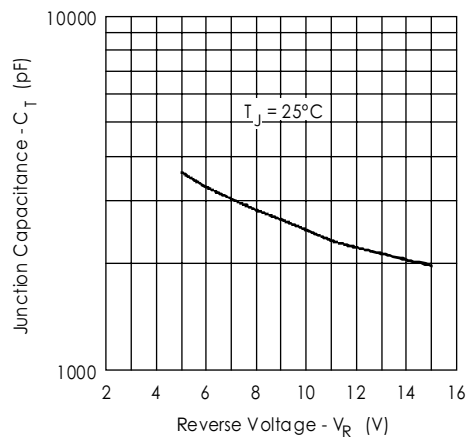


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

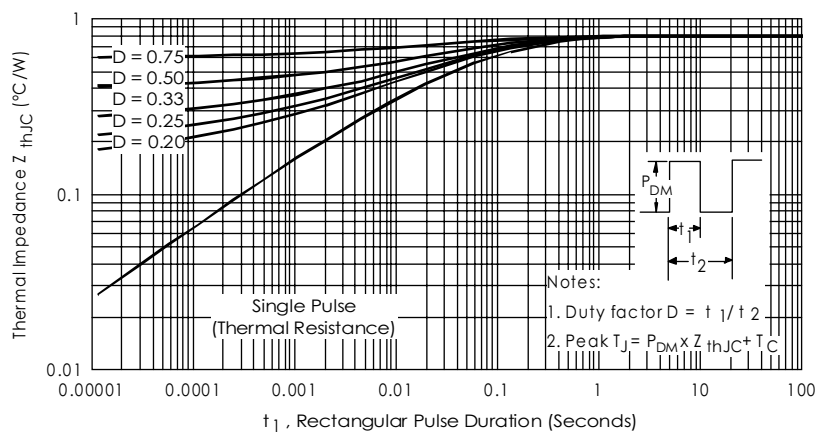


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

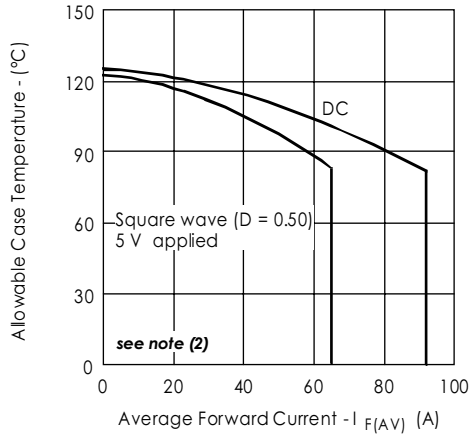


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

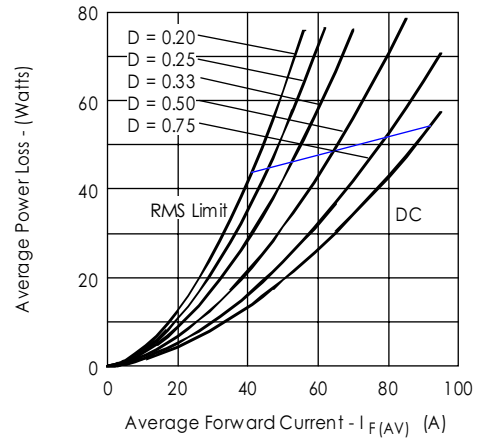


Fig. 6 - Forward Power Loss Characteristics

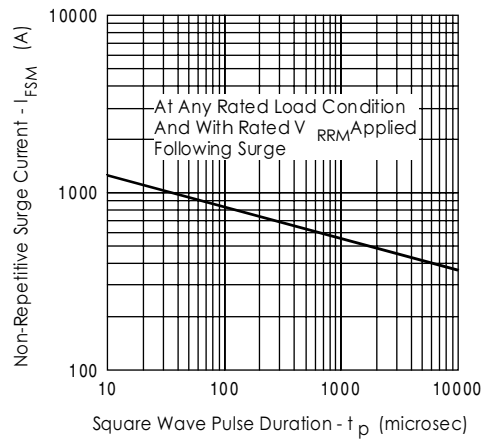


Fig. 7 - Maximum Non-Repetitive Surge Current

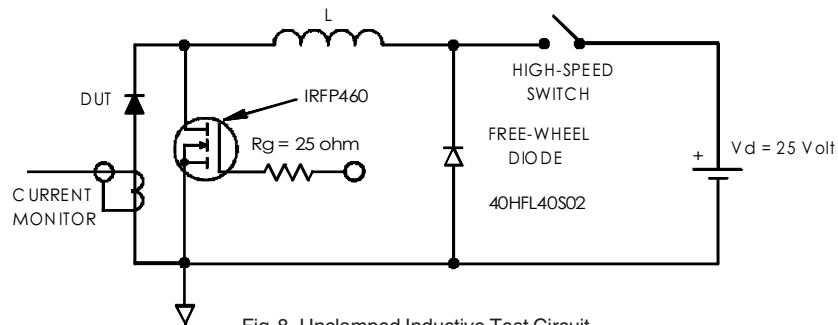


Fig. 8 - Unclamped Inductive Test Circuit

(2) Formula used: $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$;

P_d = Forward Power Loss = $I_{F(AV)} \times V_{FM}$ @ $(I_{F(AV)} / D)$ (see Fig. 6);

$P_{d_{REV}}$ = Inverse Power Loss = $V_{R1} \times I_R (1 - D)$; I_R @ $V_{R1} = 5$ V

