

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	$^\circ C$

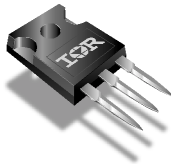
Description/Features

The 65PQ015 Schottky rectifier module has been optimized for ultra low forward voltage drop specifically for the OR-ing of parallel power supplies. The proprietary barrier technology allows for reliable operation up to 125 °C junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

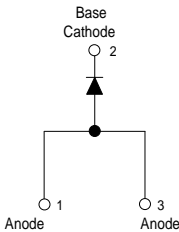
- TO-247 package
- 125°C T_J operation ($V_R < 5V$)
- Single diode configuration
- Optimized for OR-ing applications
- Ultra low forward voltage drop
- Guard ring for enhanced ruggedness and long term reliability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance

Case Styles

65PQ015



TO-247AC



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°C, rectangular waveform	
I _{FSM} Max. Peak One Cycle Non-Repetitive Surge Current	1500	A	5μs Sine or 3μs 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 °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 x 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)	10000	V/ μs		

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

Thermal-Mechanical Specifications

Parameters			65PQ015	Units	Conditions
T _J	Max. Junction Temperature Range		-55to 125	°C	
T _{stg}	Max. Storage Temperature Range		-55to 150	°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

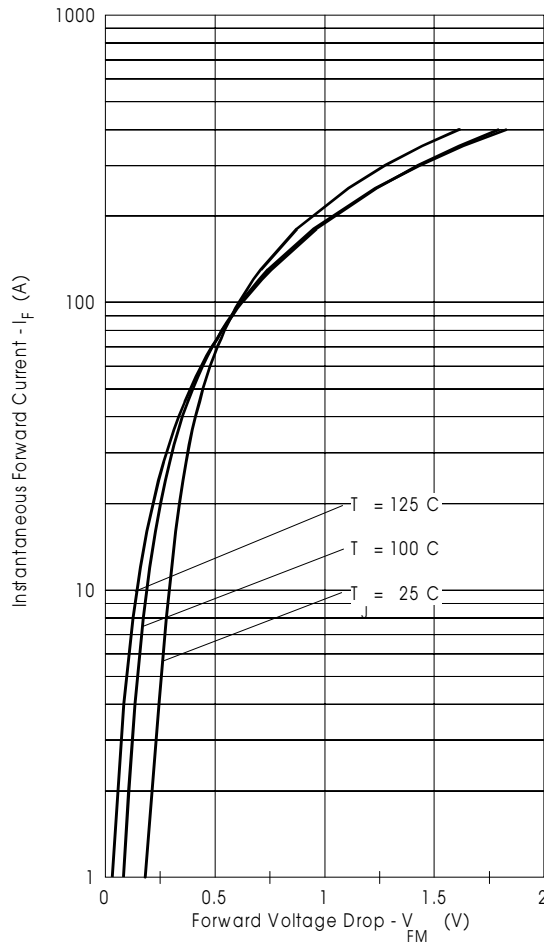


Fig. 1 - Maximum Forward Voltage Drop Characteristics

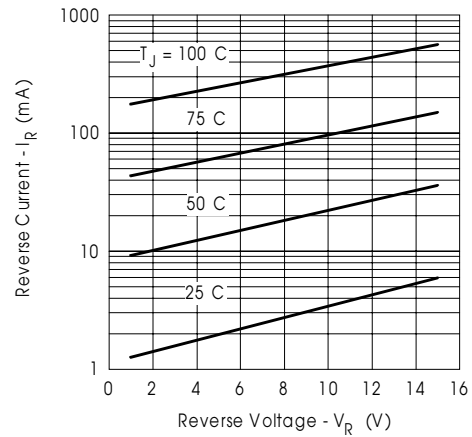


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

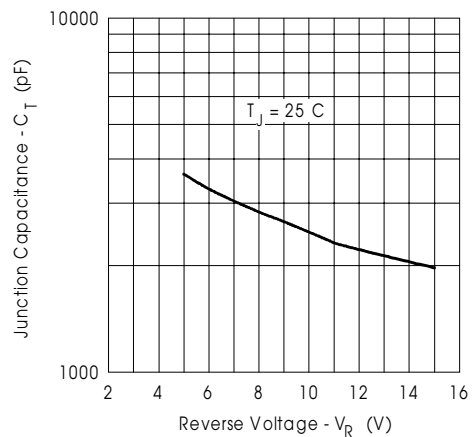


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

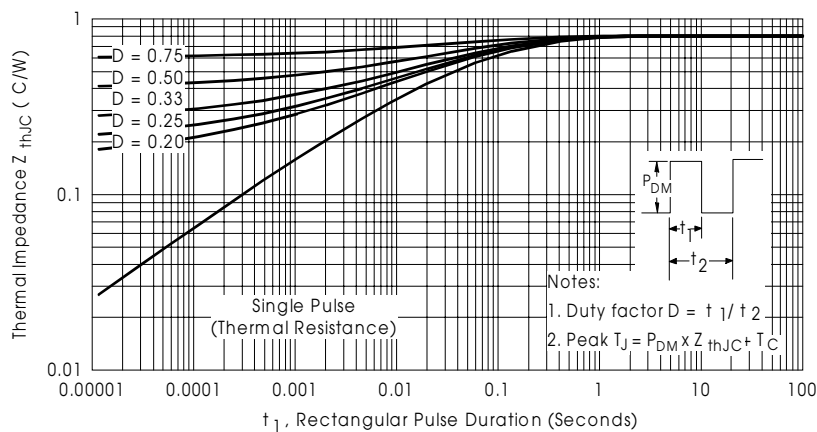


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

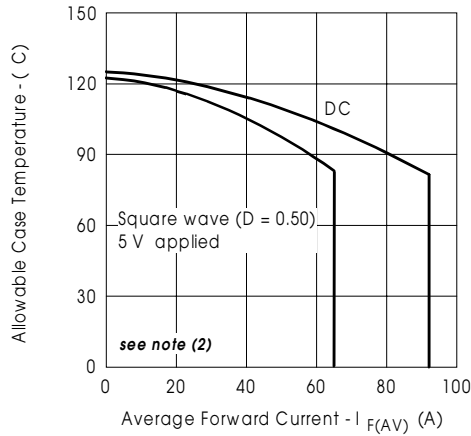


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

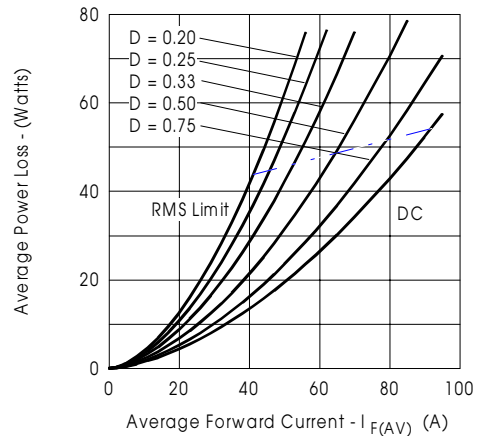


Fig. 6 - Forward Power Loss Characteristics

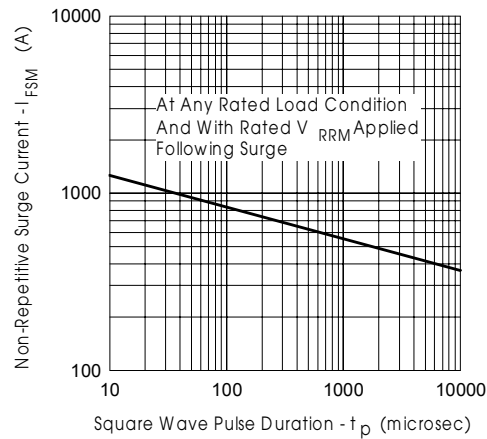


Fig. 7 - Maximum Non-Repetitive Surge Current

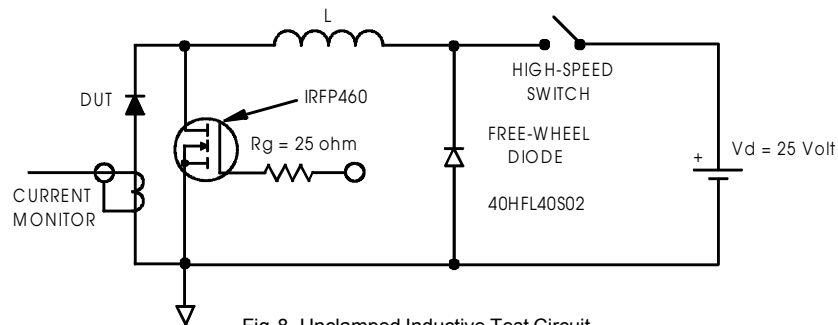


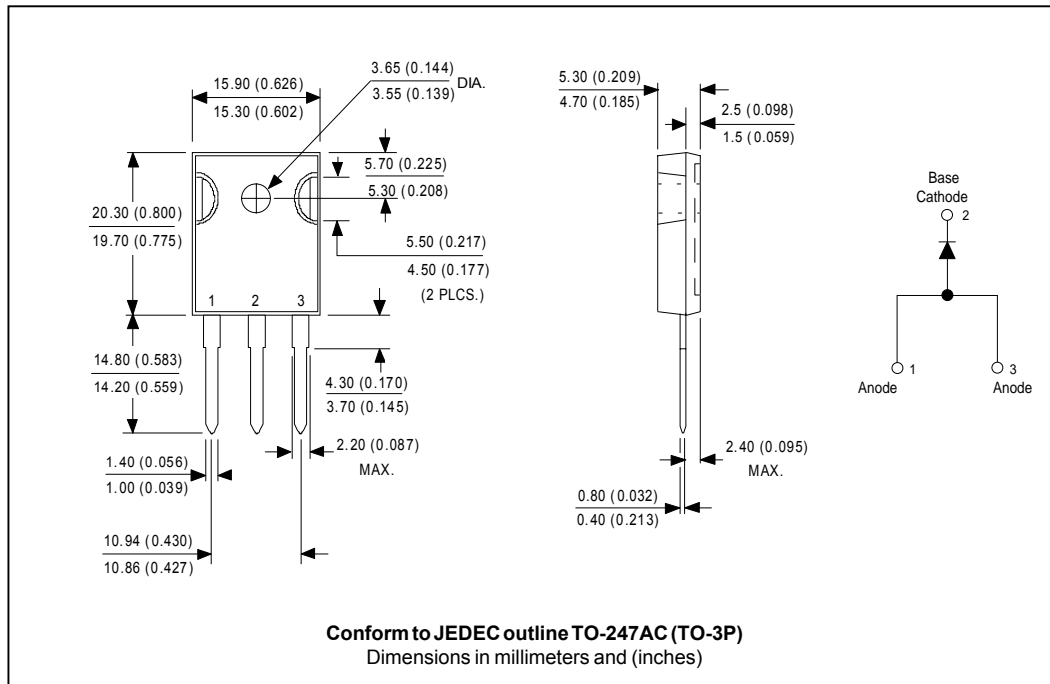
Fig. 8 - Unclamped Inductive Test Circuit

(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 = $V_{R1} \times I_R (1 - D)$; $I_R @ V_{R1} = 5 V$

Outline Table



Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level.
Qualification Standards can be found on IR's Web site.