



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



$$I_{F(AV)} = 40\text{Amp}$$
$$V_R = 15\text{V}$$

Major Ratings and Characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular waveform	40	A
$V_{RRM}$	15	V
$I_{FSM}$ @tp = 5 $\mu$ s sine	700	A
$V_F$ @ 19 Apk, $T_J = 125^\circ\text{C}$ (per leg, Typical)	0.25	V
$T_J$	-55 to 125	$^\circ\text{C}$

Description/ Features

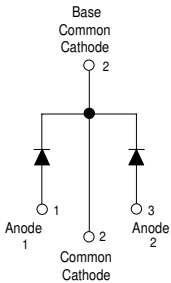
The 40L15CWPbF center tap Schottky rectifier module has been optimized for ultra low forward voltage drop specifically for the OR-ing of parallel power supplies. The proprietary barrier technology allows for reliable operation up to 125  $^\circ\text{C}$  junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

- 125 $^\circ\text{C}$   $T_J$  operation ( $V_R < 5\text{V}$ )
- Center tap module
- Optimized for OR-ing applications
- Ultra low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Lead-Free ("PbF" suffix)

Case Styles



TO-247AC



## 40L15CWPbF

Bulletin PD-20793 rev. A 11/06

International  
IOR Rectifier

### Voltage Ratings

Part number	40L15CWPbF
$V_R$ Max. DC Reverse Voltage (V) @ $T_J = 100^\circ\text{C}$	15
$V_{RWM}$ Max. Working Peak Reverse Voltage (V) @ $T_J = 100^\circ\text{C}$	

### Absolute Maximum Ratings

Parameters	40L15CW	Units	Conditions
$I_{F(AV)}$ Max. Average Forward (Per Leg) Current * See Fig. 5 (Per Device)	20 40	A	50% duty cycle @ $T_C = 86^\circ\text{C}$ , rectangular wave form
$I_{FSM}$ Max. Peak One Cycle Non-Repetitive Surge Current (Per Leg) * See Fig. 7	700 330	A	5 $\mu\text{s}$ Sine or 3 $\mu\text{s}$ Rect. pulse 10ms Sine or 6ms Rect. pulse Following any rated load condition and with rated $V_{RWM}$ applied
$E_{AS}$ Non-Repetitive Avalanche Energy (Per Leg)	10	mJ	$T_J = 25^\circ\text{C}$ , $I_{AS} = 2\text{ Amps}$ , $L = 5\text{ mH}$
$I_{AR}$ Repetitive Avalanche Current (Per Leg)	2	A	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 1.5 \times V_R$ typical

### Electrical Specifications

Parameters	40L15CW	Units	Conditions
$V_{FM}$ Forward Voltage Drop (Per Leg) * See Fig. 1 (1)	Typ. Max.		
	- 0.41	V	@ 19A $T_J = 25^\circ\text{C}$
	- 0.52	V	@ 40A $T_J = 25^\circ\text{C}$
	0.25 0.33	V	@ 19A $T_J = 125^\circ\text{C}$
$I_{RM}$ Reverse Leakage Current (Per Leg) * See Fig. 2 (1)	- 10	mA	$T_J = 25^\circ\text{C}$
	- 600	mA	$T_J = 100^\circ\text{C}$ $V_R = \text{rated } V_R$
$V_{F(TO)}$ Threshold Voltage	0.182	V	$T_J = T_J \text{ max.}$
$r_t$ Forward Slope Resistance	7.6	m $\Omega$	
$C_T$ Max. Junction Capacitance (Per Leg)	- 2000	pF	$V_R = 5V_{DC}$ (test signal range 100Khz to 1Mhz) $25^\circ\text{C}$
$L_S$ Typical Series Inductance (Per Leg)	8 -	nH	Measured lead to lead 5mm from package body
dv/dt Max. Voltage Rate of Change	10000	V/ $\mu\text{s}$	(Rated $V_R$ )

(1) Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

### Thermal-Mechanical Specifications

Parameters	40L15CW	Units	Conditions
$T_J$ Max. Junction Temperature Range	-55 to 125	$^\circ\text{C}$	
$T_{stg}$ Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
$R_{thJC}$ Max. Thermal Resistance Junction to Case (Per Leg)	1.4	$^\circ\text{C/W}$	DC operation * See Fig. 4
$R_{thJC}$ Max. Thermal Resistance Junction to Case (Per Package)	0.7	$^\circ\text{C/W}$	DC operation
$R_{thCS}$ Typical Thermal Resistance, Case to Heatsink	0.24	$^\circ\text{C/W}$	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	
Marking Device	40L15CW		

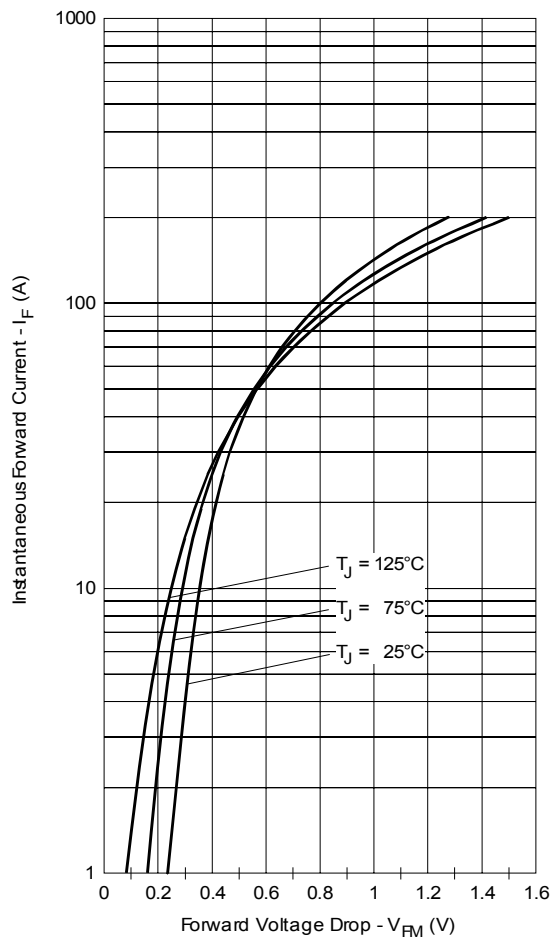


Fig. 1 - Maximum Forward Voltage Drop Characteristics

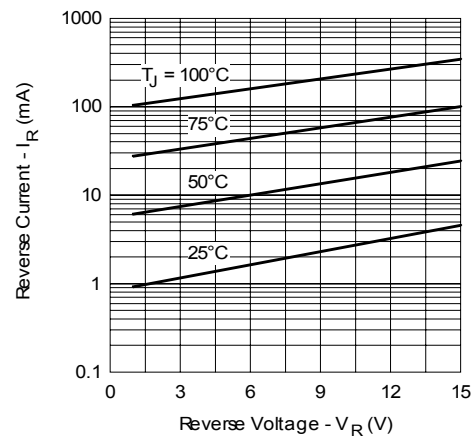


Fig. 2 - Typical Values of Reverse Current Vs. Reverse Voltage

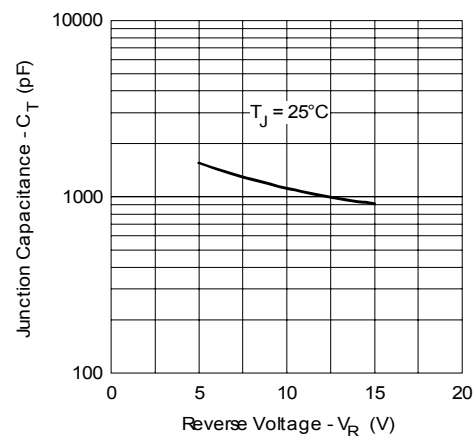


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

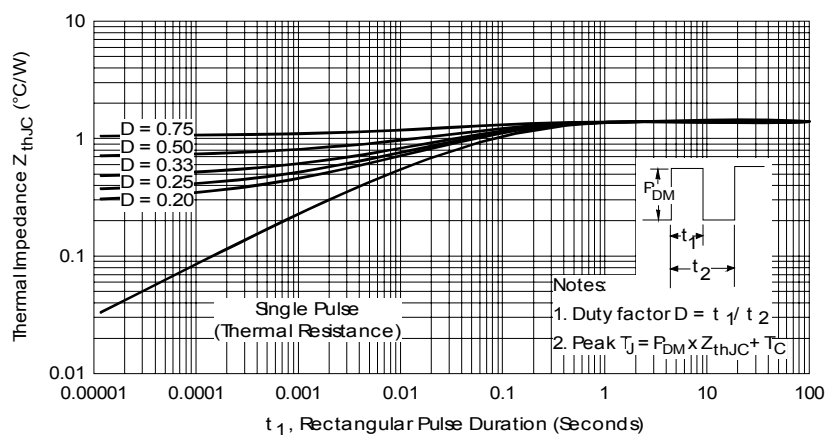


Fig. 4 - Maximum Thermal Impedance  $Z_{thJC}$  Characteristics

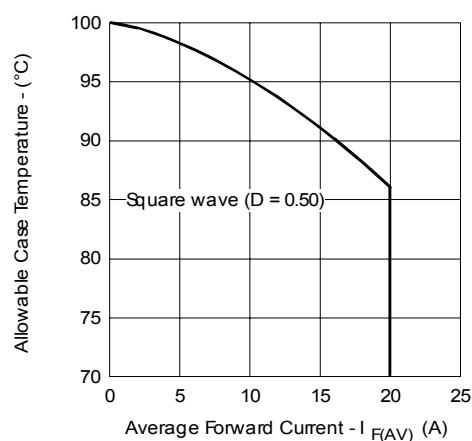


Fig. 5 - Maximum Allowable Case Temperature Vs. Average Forward Current

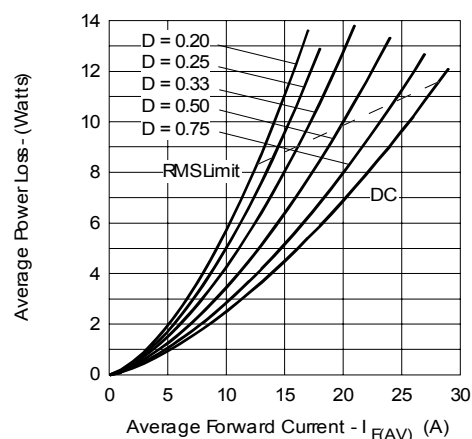


Fig. 6 - Forward Power Loss Characteristics

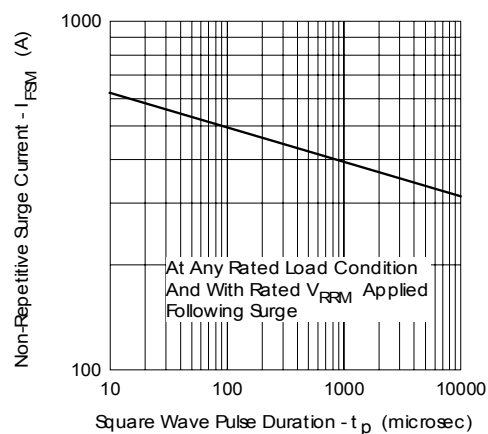


Fig. 7 - Maximum Non-Repetitive Surge Current

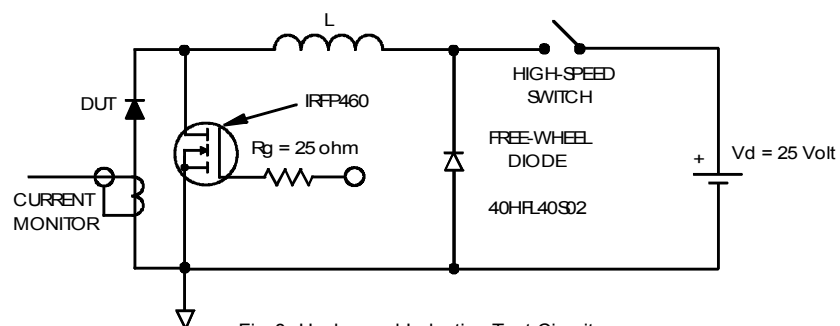
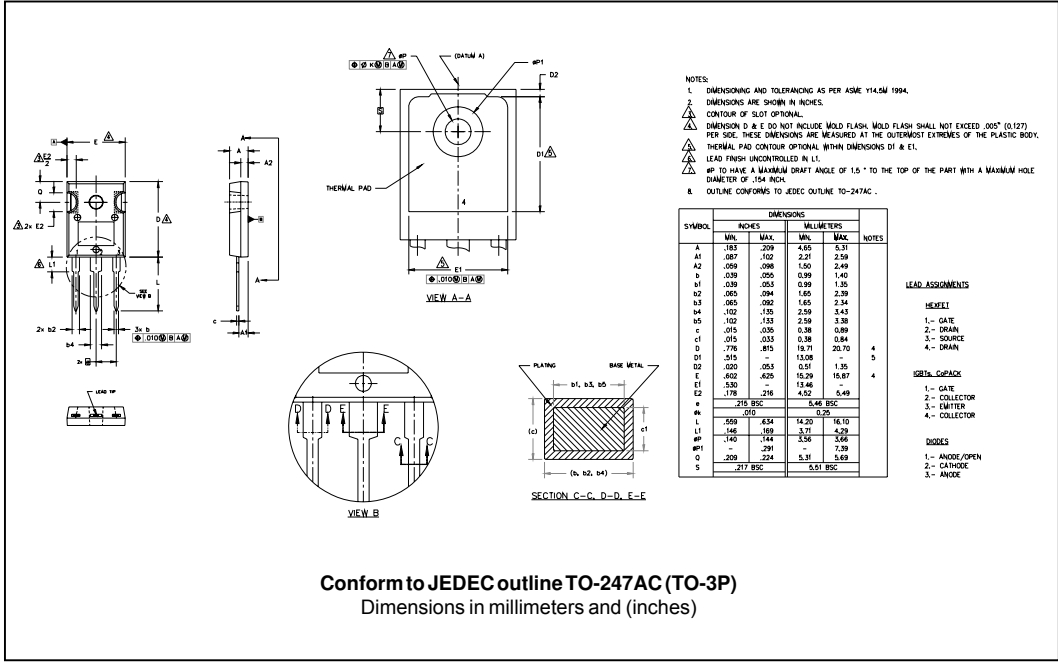
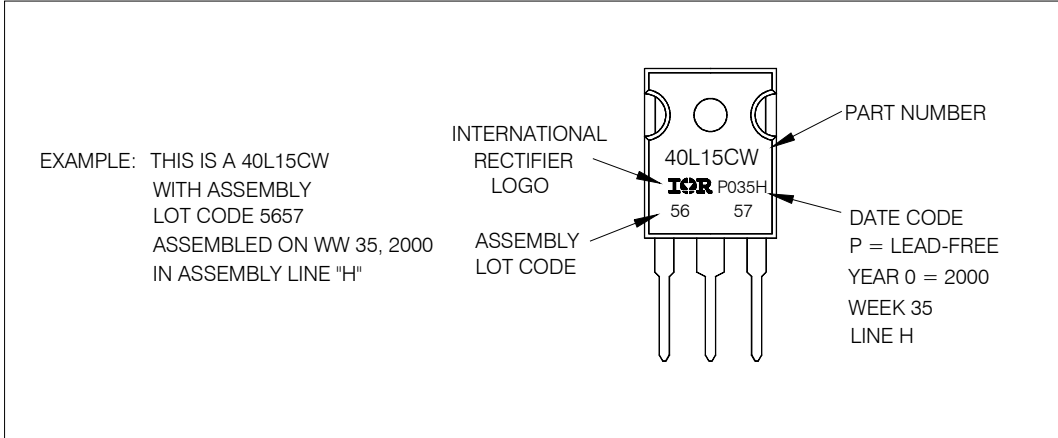


Fig. 8 - Unclamped Inductive Test Circuit

Outline Table



Marking Information



## Ordering Information Table

## Device Code

40	L	15	C	W	PbF
1	2	3	4	5	6

<b>1</b>	-	Current Rating (40 = 40A)
<b>2</b>	-	Schottky "L" Series
<b>3</b>	-	Voltage Code (15 = 15V)
<b>4</b>	-	Circuit Configuration
		C = Common Cathode
<b>5</b>	-	Package
		W = TO-247
<b>6</b>	-	<ul style="list-style-type: none"> <li>• none = Standard Production</li> <li>• PbF = Lead-Free</li> </ul>

Tube Standard Pack Quantity : 25 pieces

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

International  
**IOR** Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105  
TAC Fax: (310) 252-7309  
11/06



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