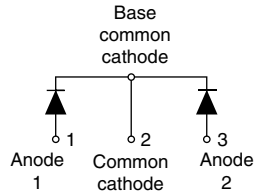
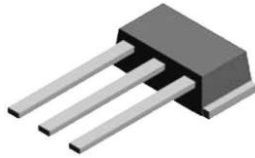
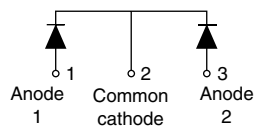
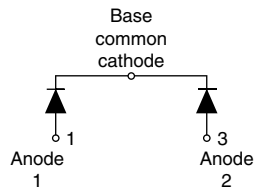


## Schottky Rectifier

### New Generation 3 D-61 Package, 2 x 55 A

**115CNQ015A**

**D-61-8**

**115CNQ015ASM**

**D-61-8-SM**

**115CNQ015ASL**

**D-61-8-SL**

**FEATURES**

- 125 °C  $T_J$  operation ( $V_R < 5$  V)
- Center tap module
- Optimized for OR-ing applications
- Ultralow 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
- New fully transfer-mold low profile, small footprint, high current package
- Designed and qualified for industrial level

**DESCRIPTION**

The 115CNQ015A 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 °C junction temperature. Typical applications are in parallel switching power supplies, converters, reverse battery protection, and redundant power subsystems.

**PRODUCT SUMMARY**

$I_{F(AV)}$	2 x 55 A
$V_R$ at $T_J = 100$ °C	15 V

**MAJOR RATINGS AND CHARACTERISTICS**

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	110	A
$V_{RRM}$		15	V
$I_{FSM}$	$t_p = 5$ $\mu$ s sine	5050	A
$V_F$	55 Apk, $T_J = 75$ °C (per leg)	0.33	V
$T_J$	Range	- 55 to 125	°C

**VOLTAGE RATINGS**

PARAMETER	SYMBOL	TEST CONDITIONS	115CNQ015A	UNITS
Maximum DC reverse voltage	$V_R$	$T_J = 100$ °C	15	V
		$T_J = 125$ °C	5	

ABSOLUTE MAXIMUM RATINGS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current See fig. 5	$I_{F(AV)}$	50 % duty cycle at $T_C = 112\text{ }^\circ\text{C}$ , rectangular waveform		55	A
				per leg	
Maximum peak one cycle non-repetitive surge current per leg See fig. 7	$I_{FSM}$	5 $\mu\text{s}$ sine or 3 $\mu\text{s}$ rect. pulse	Following any rated load condition and with rated $V_{RRM}$ applied	5050	A
		10 ms sine or 6 ms rect. pulse		830	
Non-repetitive avalanche energy per leg	$E_{AS}$	$T_J = 25\text{ }^\circ\text{C}$ , $I_{AS} = 2\text{ A}$ , $L = 4.5\text{ mH}$		54	mJ
Repetitive avalanche current per leg	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{s}$ Frequency limited by $T_J$ maximum $V_A = 3 \times V_R$ typical		2	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	$V_{FM}^{(1)}$	55 A	$T_J = 25\text{ }^\circ\text{C}$	0.37	V
		110 A		0.46	
		55 A	$T_J = 75\text{ }^\circ\text{C}$	0.33	
		110 A		0.43	
Maximum reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^\circ\text{C}$	$V_R = \text{Rated } V_R$	20	mA
		$T_J = 100\text{ }^\circ\text{C}$		1200	
		$T_J = 100\text{ }^\circ\text{C}$	$V_R = 12\text{ V}$	900	
		$T_J = 100\text{ }^\circ\text{C}$	$V_R = 5\text{ V}$	540	
Maximum junction capacitance per leg	$C_T$	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^\circ\text{C}$		5500	pF
Typical series inductance per leg	$L_S$	Measured lead to lead 5 mm from package body		5.5	nH
Maximum voltage rate of change	dV/dt	Rated $V_R$		10 000	V/ $\mu\text{s}$

**Note**

(1) Pulse width < 300  $\mu\text{s}$ , duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction temperature range	$T_J$			- 55 to 125	$^\circ\text{C}$
Maximum storage temperature range	$T_{Stg}$			- 55 to 150	
Maximum thermal resistance, junction to case per leg	$R_{thJC}$	DC operation See fig. 4		0.5	$^\circ\text{C/W}$
Maximum thermal resistance, junction to case per package		DC operation		0.25	
Typical thermal resistance, case to heatsink (D-61-8 only)	$R_{thCS}$	Mounting surface, smooth and greased Device flatness < 5 mills		0.30	
Approximate weight				7.8	g
				0.28	oz.
Mounting torque (D-61-8 only)	minimum			40 (35)	kgf · cm
	maximum			58 (50)	(lbf · in)
Marking device		Case style D-61-8		115CNQ015A	
		Case style D-61-8-SM		115CNQ015ASM	
		Case style D-61-8-SL		115CNQ015ASL	

Schottky Rectifier  
New Generation 3  
D-61 Package, 2 x 55 A

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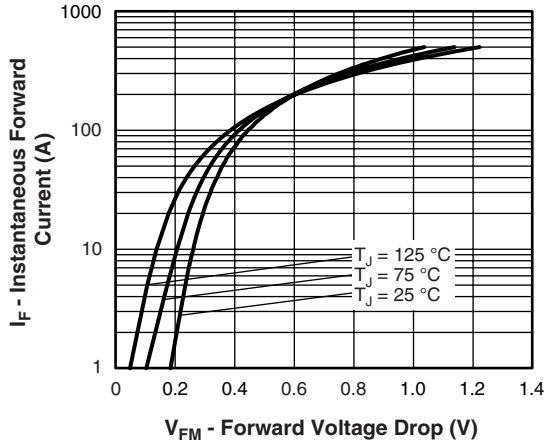


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

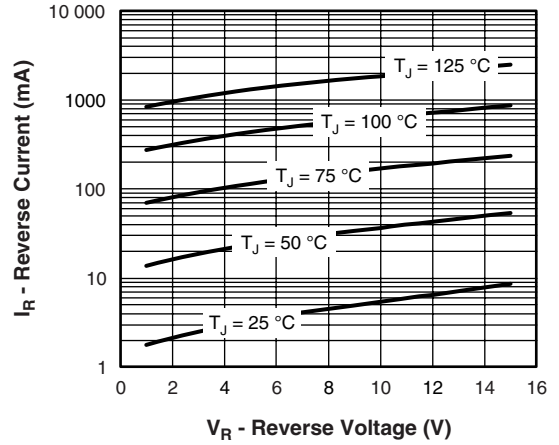


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

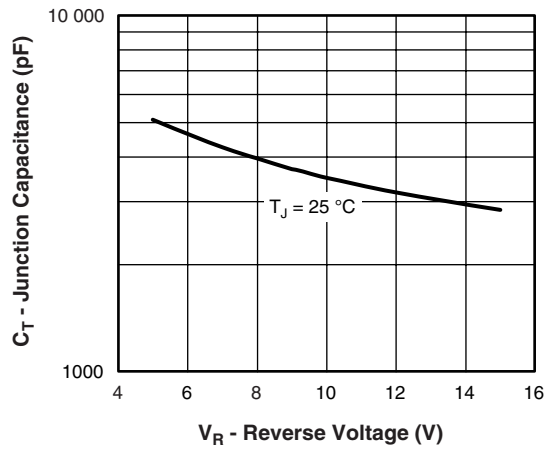


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

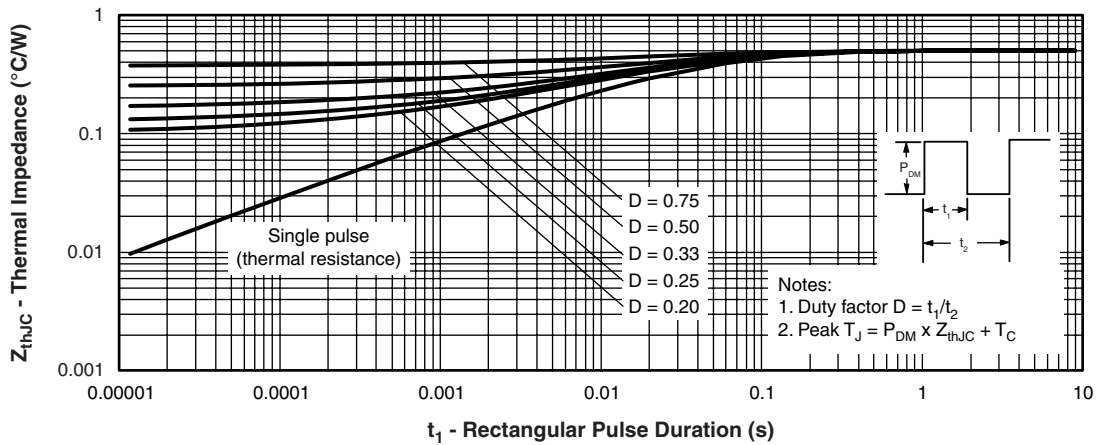


Fig. 4 - Maximum Thermal Impedance  $Z_{thJC}$  Characteristics (Per Leg)

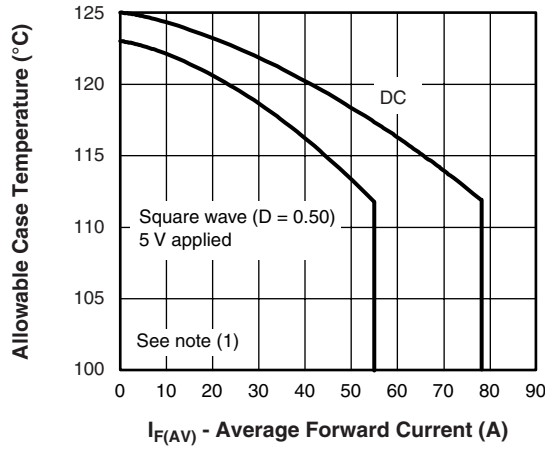


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

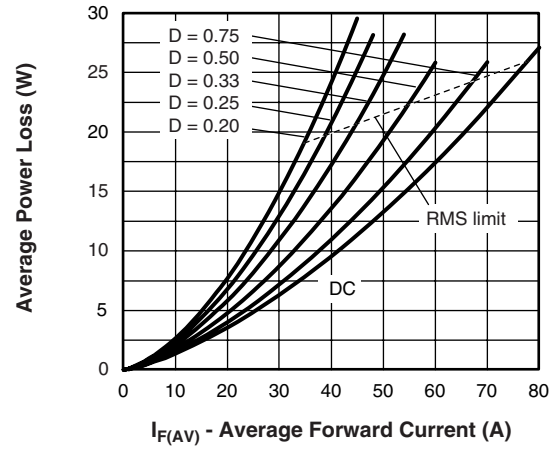


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

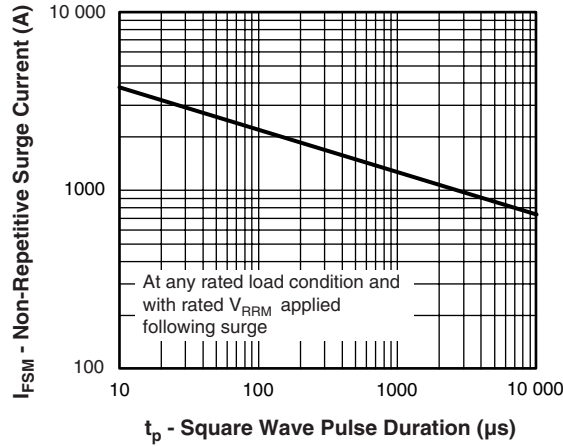


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

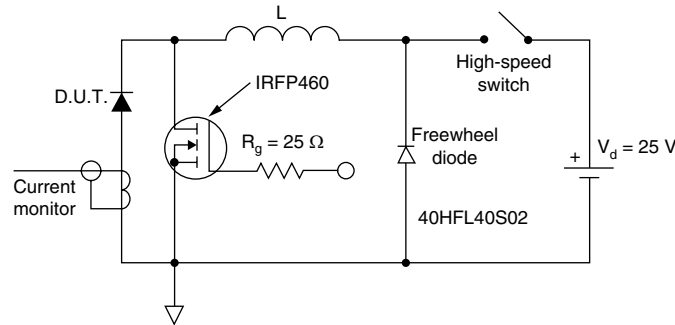


Fig. 8 - Unclamped Inductive Test Circuit

**Note**

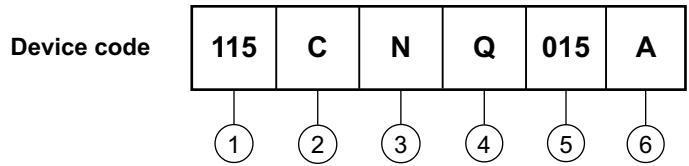
- (1) Formula used:  $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$ ;
- $P_d$  = Forward power loss =  $I_{F(AV)} \times V_{FM}$  at  $(I_{F(AV)}/D)$  (see fig. 6);
- $P_{d_{REV}}$  = Inverse power loss =  $V_{R1} \times I_R (1 - D)$ ;  $I_R$  at  $V_{R1} = 5 V$



Schottky Rectifier  
New Generation 3  
D-61 Package, 2 x 55 A

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**ORDERING INFORMATION TABLE**



- 1** - Current rating (110 A)
- 2** - Circuit configuration:
  - C = Common cathode
- 3** - Package:
  - N = D-61
- 4** - Schottky "Q" series
- 5** - Voltage rating (015 = 15 V)
- 6** - Package style:
  - A = D-61-8
  - ASM = D-61-8-SM
  - ASL = D-61-8-SL

Standard pack quantity: A = 10 pieces; ASM/ASL = 20 pieces

LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95354">http://www.vishay.com/doc?95354</a>
Part marking information	<a href="http://www.vishay.com/doc?95356">http://www.vishay.com/doc?95356</a>



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