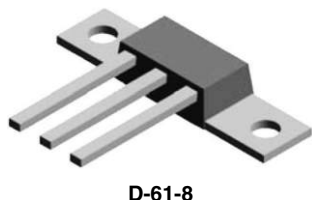
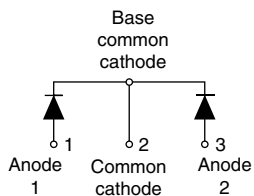


Schottky Rectifier New Generation 3 D-61 Package, 2 x 40 A

88CNQ060A



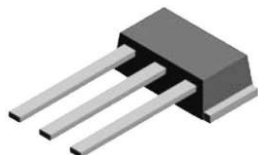
D-61-8



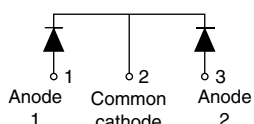
FEATURES

- 150 °C T_J operation
- Center tap module
- 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
- New fully transfer-mold low profile, small footprint, high current package
- Designed and qualified for industrial level

88CNQ060ASM



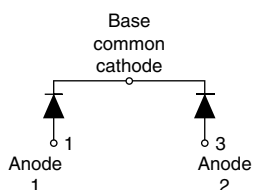
D-61-8-SM



88CNQ060ASL



D-61-8-SL



DESCRIPTION

The center tap Schottky rectifier module has been optimized for very low forward voltage drop with moderate leakage. The proprietary barrier technology allows for reliable operation up to 150 °C junction temperature. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

PRODUCT SUMMARY

$I_{F(AV)}$	2 x 40 A
V_R	60 V
I_{RM}	240 mA at 125 °C

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	80	A
V_{RRM}		60	V
I_{FSM}	$t_p = 5 \mu s$ sine	5000	A
V_F	40 Apk, $T_J = 125 \text{ °C}$ (per leg)	0.56	V
T_J	Range	- 55 to 150	°C

VOLTAGE RATINGS

PARAMETER	SYMBOL	88CNQ060A	UNITS
Maximum DC reverse voltage	V_R	60	V
Maximum working peak reverse voltage	V_{RWM}		

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current See fig. 5	$I_{F(AV)}$	50 % duty cycle at $T_C = 120\text{ }^{\circ}\text{C}$, rectangular waveform, rated V_R		40	A
				80	
Maximum peak one cycle non-repetitive surge current per leg See fig. 7	I_{FSM}	5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated V_R applied	5000	
		10 ms sine or 6 ms rect. pulse		600	
Non-repetitive avalanche energy per leg	E_{AS}	$T_J = 25\text{ }^{\circ}\text{C}$, $I_{AS} = 1\text{ A}$, $L = 0.57\text{ mH}$		75	mJ
Repetitive avalanche current per leg	I_{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T_J maximum $V_A = 1.5 \times V_R$ typical		1.0	A

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg	$V_{FM}^{(1)}$	40 A	$T_J = 25\text{ }^{\circ}\text{C}$	0.58	V
		80 A		0.77	
		40 A	$T_J = 125\text{ }^{\circ}\text{C}$	0.56	
		80 A		0.67	
Typical reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^{\circ}\text{C}$	$V_R = \text{Rated } V_R$	0.64	mA
		$T_J = 125\text{ }^{\circ}\text{C}$		240	
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^{\circ}\text{C}$		5200	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/ μ s

Note(1) Pulse width < 300 μs , duty cycle < 2 %**THERMAL - MECHANICAL SPECIFICATIONS**

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	T _J , T _{Stg}		- 55 to 150	°C
Maximum thermal resistance, _____ per leg junction to case _____ per package	R _{thJC}	DC operation	0.85 0.42	°C/W
Typical thermal resistance, case to heatsink (D-61-8 only)	R _{thCS}	Mounting surface, smooth and greased Device flatness < 5 mils	0.30	
Approximate weight			7.8	g
			0.28	oz.
Mounting torque _____ minimum (D-61-8 only) _____ maximum			40 (35)	kgf · cm (lbf · in)
			58 (50)	
Marking device		Case style D-61-8	88CNQ060A	
		Case style D-61-8-SM	88CNQ060ASM	
		Case style D-61-8-SL	88CNQ060ASL	



Schottky Rectifier New Generation 3 D-61 Package, 2 x 40 A

Vishay High Power Products

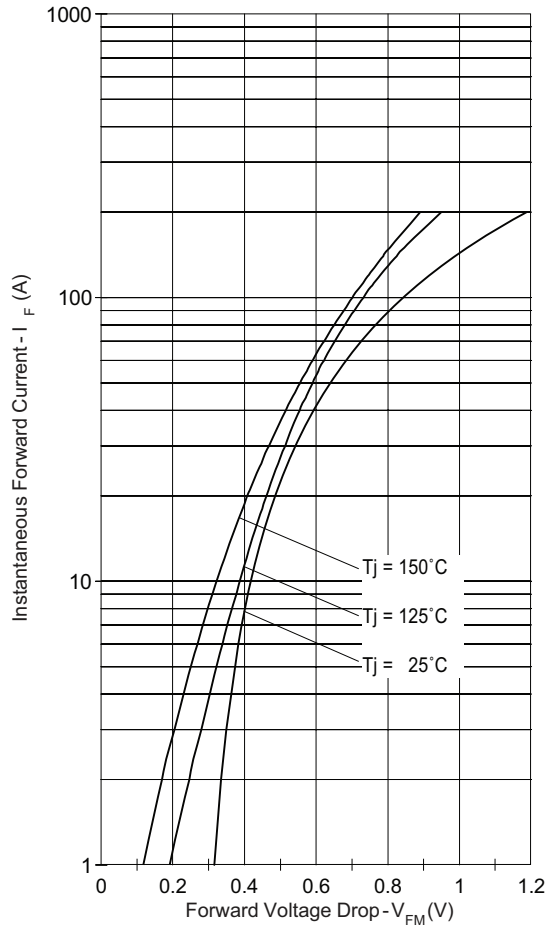


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

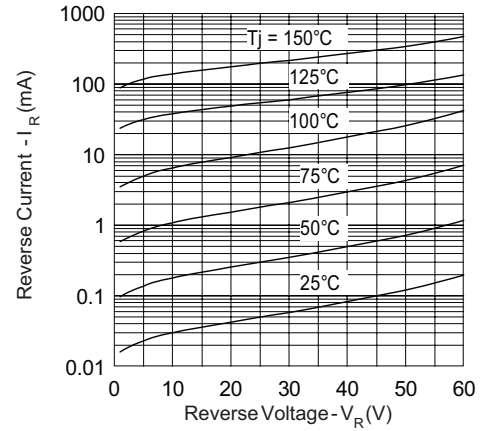


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

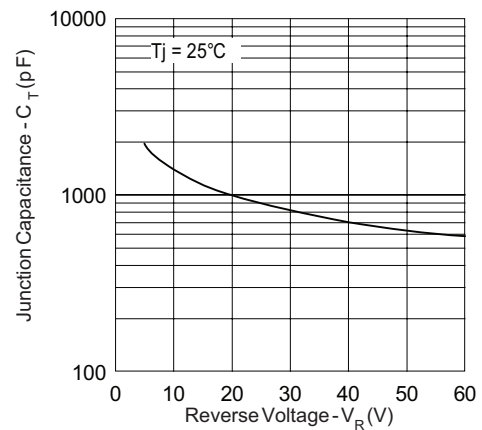


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

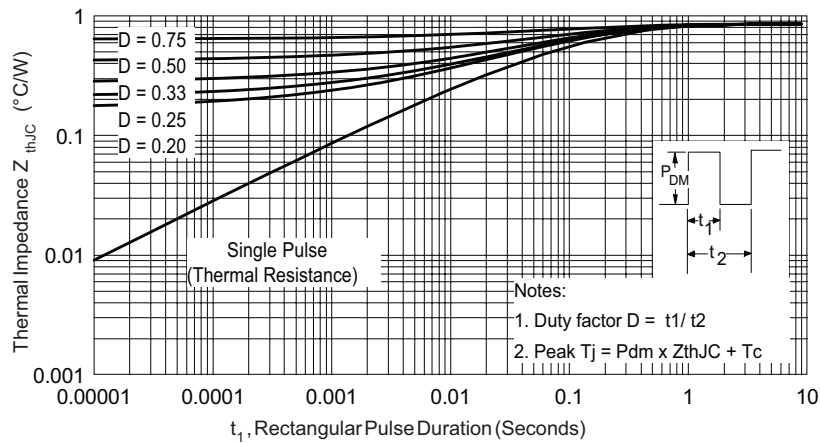


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

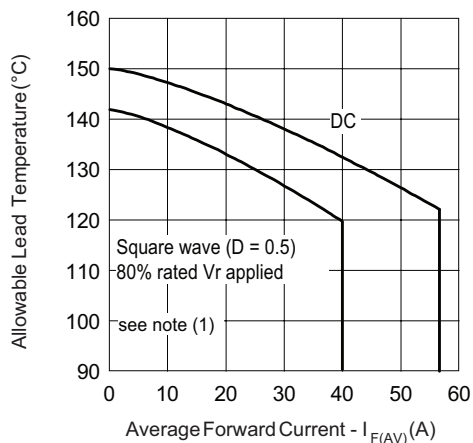


Fig. 5 - Maximum Allowable Lead Temperature vs. Average Forward Current

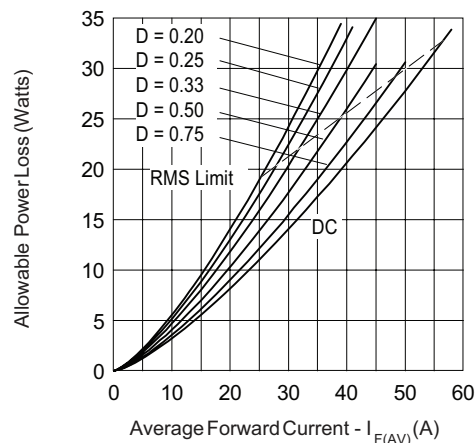


Fig. 6 - Maximum Average Forward Dissipation vs. Average Forward Current

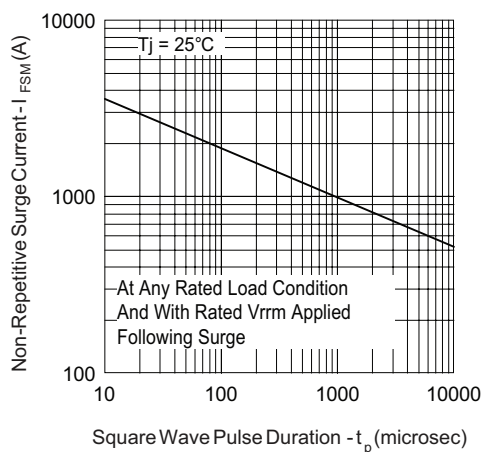


Fig. 7 - Maximum Peak Surge Forward Current vs. Pulse Duration

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 $V_{R1} = 80\%$ rated V_R



Schottky Rectifier
New Generation 3
D-61 Package, 2 x 40 A

Vishay High Power Products

ORDERING INFORMATION TABLE

Device code	88	C	N	Q	060	A	-
	1	2	3	4	5	6	7

- | | | |
|---|---|---|
| 1 | - | Current rating (80 A) |
| 2 | - | Circuit configuration: <ul style="list-style-type: none">• C = Common cathode |
| 3 | - | Package: <ul style="list-style-type: none">• N = D-61 |
| 4 | - | Schottky "Q" series |
| 5 | - | Voltage ratings (060 = 60 V) |
| 6 | - | Package style: <ul style="list-style-type: none">• A = D-61-8• ASM = D-61-8-SM• ASL = D-61-8-SL |
| 7 | - | <ul style="list-style-type: none">• None = Standard production• PbF = Lead (Pb)-free (D-61-8 only) |

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

LINKS TO RELATED DOCUMENTS	
Dimensions	http://www.vishay.com/doc?95354
Part marking information	http://www.vishay.com/doc?95356



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