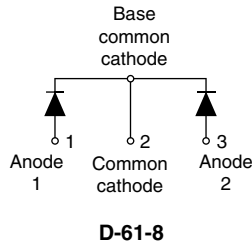


Schottky Rectifier

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


FEATURES

- 150 °C T_J operation
- Center tap module
- Very low forward voltage drop
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability
- New fully transfer-mould low profile, small footprint, high current package
- Through-hole versions are currently available for use in lead (Pb)-free applications ("PbF" suffix)
- Designed and qualified for industrial level


RoHS*
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	2 x 40 A
V_R	35 to 45 V

DESCRIPTION

The center tap Schottky rectifier module series 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.

MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	80	A
V_{RRM}	Range	35 to 45	V
I_{FSM}	$t_p = 5 \mu s$ sine	5800	A
V_F	40 Apk, $T_J = 125^\circ C$ (per leg)	0.47	V
T_J	Range	- 55 to 150	°C

VOLTAGE RATINGS

PARAMETER	SYMBOL	80CNQ035APbF	80CNQ040APbF	80CNQ045APbF	UNITS
Maximum DC reverse voltage	V_R	35	40	45	V
Maximum working peak reverse voltage	V_{RWM}				

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current per leg See fig. 5 per device	$I_{F(AV)}$	50 % duty cycle at $T_C = 114^\circ C$, rectangular waveform	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	5800	
		10 ms sine or 6 ms rect. pulse		
Non-repetitive avalanche energy per leg	E_{AS}	$T_J = 25^\circ C$, $I_{AS} = 8 A$, $L = 1.7 mH$	54	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	8	A

* Pb containing terminations are not RoHS compliant, exemptions may apply

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	$V_{FM}^{(1)}$	40 A	$T_J = 25\text{ }^\circ\text{C}$	0.52	V
		80 A		0.66	
		40 A	$T_J = 125\text{ }^\circ\text{C}$	0.47	
		80 A		0.61	
Maximum reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^\circ\text{C}$	$V_R = \text{Rated } V_R$	5	mA
		$T_J = 125\text{ }^\circ\text{C}$		250	
Threshold voltage	$V_{F(TO)}$	$T_J = T_J \text{ maximum}$		0.26	V
Forward slope resistance	r_t			3.93	$\text{m}\Omega$
Maximum junction capacitance per leg	C_T	$V_R = 5\text{ }V_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^\circ\text{C}$		2600	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/ μs

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	$^\circ\text{C}$
Maximum thermal resistance, $\frac{\quad}{\quad}$ per leg junction to case $\frac{\quad}{\quad}$ per package	R_{thJC}	DC operation	See fig. 4	0.85	$^\circ\text{C}/\text{W}$
		DC operation		0.42	
Typical thermal resistance, case to heatsink	R_{thCS}	Mounting surface, smooth and greased Device flatness < 5 mils		0.30	
Approximate weight				7.8	g
				0.28	oz.
Mounting torque	minimum			40 (35)	kgf · cm
	maximum			58 (50)	(lbf · in)
Marking device		Case style D-61		80CNQ035A	
				80CNQ040A	
				80CNQ045A	



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

Vishay High Power Products

ORDERING INFORMATION TABLE

Device code	80	C	N	Q	045	A	PbF
	①	②	③	④	⑤	⑥	⑦

1	-	Current rating (80 A)	
2	-	Circuit configuration: C = Common cathode	
3	-	Package: N = D-61	
4	-	Schottky "Q" series	
5	-	Voltage ratings	035 = 35 V 040 = 40 V 045 = 45 V
6	-	A = D-61-8 package style	
7	-	• None = Standard production • PbF = Lead (Pb)-free	

Standard pack quantity: A = 10 pieces

D-61

DIMENSIONS in millimeters (inches)

