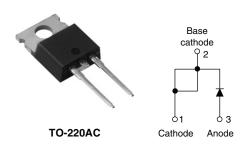




Schottky Rectifier, 8 A



PRODUCT SUMMARY				
I _{F(AV)}	8 A			
V _R	80/100 V			

FEATURES

- 175 °C T_J operation
- · 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
- Designed and qualified for industrial level

DESCRIPTION

The 8TQ...G Schottky rectifier series has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 175 °C junction temperature. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

MAJOR RATINGS AND CHARACTERISTICS					
SYMBOL	CHARACTERISTICS	CHARACTERISTICS VALUES U			
I _{F(AV)}	Rectangular waveform	8	A		
V _{RRM}	Range	80/100	V		
I _{FSM}	$t_p = 5 \mu s sine$	850	A		
V _F	8 Apk, T _J = 125 °C	0.58	V		
T _J	Range	- 55 to 175	°C		

VOLTAGE RATINGS				
PARAMETER	SYMBOL	8TQ080G	8TQ100G	UNITS
Maximum DC reverse voltage	V_R	80	100	V
Maximum working peak reverse voltage	V_{RWM}	00	100	V

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 = 157 °C, rectangular waveform		8	А
Maximum peak one cycle non-repetitive surge current	1	5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated V _{RRM} applied	850	Α
See fig. 7	I _{FSM}	10 ms sine or 6 ms rect. pulse		230	А
Non-repetitive avalanche energy	E _{AS}	T _J = 25 °C, I _{AS} = 0.50 A, L = 60 mH		7.50	mJ
Repetitive avalanche current	I _{AR}	Current decaying linearly to zero in 1 μ s Frequency limited by T_J maximum $V_A = 1.5 \text{ x } V_B$ typical		0.50	Α

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ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
	V _{FM} ⁽¹⁾	8 A	T _J = 25 °C	0.72	V
Maximum forward voltage drop		16 A		0.88	
See fig. 1		8 A	- T _J = 125 °C	0.58	
		16 A		0.69	
Maximum reverse leakage current	I _{RM} ⁽¹⁾	T _J = 25 °C	V _R = Rated V _R	0.28	mA
See fig. 2	'RM \''	T _J = 125 °C		7	IIIA
Maximum junction capacitance	C _T	$V_R = 5 V_{DC}$ (test signal range 100 kHz to 1 MHz) 25 °C		500	pF
Typical series inductance	L _S	Measured lead to lead 5 mm from package body		8	nH
Maximum voltage rate of change	dV/dt	Rated V _R		10 000	V/µs

Note

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

THERMAL - MECHANICAL SPECIFICATIONS					
PARAMETER		SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum junction and storage temperature range	ge	T _J , T _{Stg}		- 55 to 175	°C
Maximum thermal resistation to case	ance,	R_{thJC}	DC operation See fig. 4	2.0	°C/W
Typical thermal resistant case to heatsink	ce,	R _{thCS}	Mounting surface, smooth and greased	0.50	C/VV
Approximate weight				2	g
Approximate weight				0.07	oz.
Mounting torque	minimum			6 (5)	kgf ⋅ cm
Mounting torque -	maximum			12 (10)	(lbf · in)
Marking device			Coop at the TO 200AC	8TQ080G	
			Case style TO-220AC	8TQ100G	



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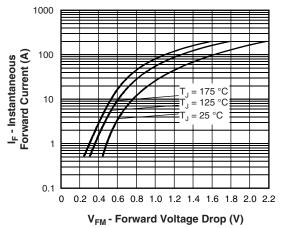


Fig. 1 - Maximum Forward Voltage Drop Characteristics

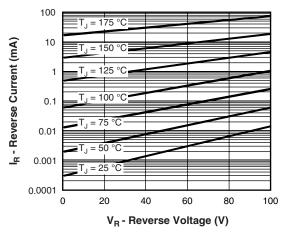


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

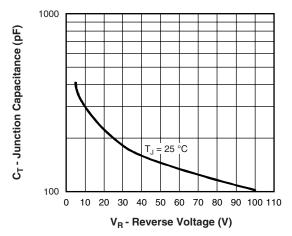


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

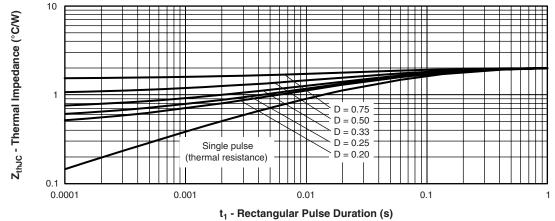


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

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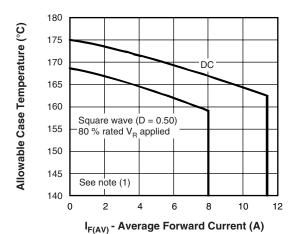


Fig. 5 - Maximum Allowable Case Temperature vs.

Average Forward Current

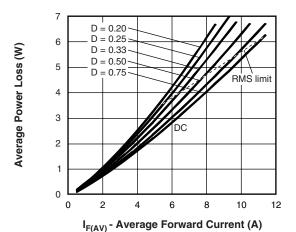


Fig. 6 - Forward Power Loss Characteristics

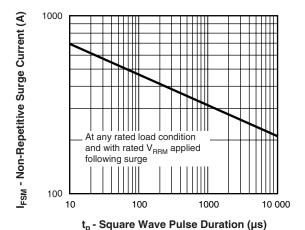


Fig. 7 - Maximum Non-Repetitive Surge Current

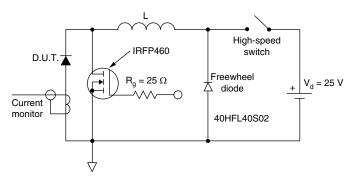


Fig. 8 - Unclamped Inductive Test Circuit

Note

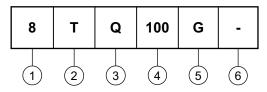
(1) Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$; $Pd = Forward power loss = I_{F(AV)} \times V_{FM} at (I_{F(AV)}/D)$ (see fig. 6); $Pd_{REV} = Inverse power loss = V_{R1} \times I_R (1 - D)$; I_R at $V_{R1} = 80$ % rated V_R



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ORDERING INFORMATION TABLE





1 - Current rating (8 A)

2 - T = TO-220

Schottky "Q" series

4 - Voltage ratings — 080 = 80 V 100 = 100 V

5 - G = Schottky generation

None = Standard production

• PbF = Lead (Pb)-free

Tube standard pack quantity: 50 pieces

LINKS TO RELATED DOCUMENTS				
Dimensions	http://www.vishay.com/doc?95046			
Part marking information	http://www.vishay.com/doc?95054			
Packaging information	http://www.vishay.com/doc?95032			
SPICE models	http://www.vishay.com/doc?95291			



Vishay

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