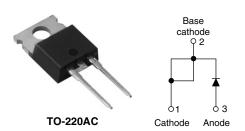


Vishay High Power Products

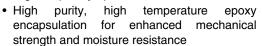
Schottky Rectifier, 8 A



PRODUCT SUMMARY			
I _{F(AV)} 8 A			
V_{R}	100 V		

FEATURES

- 175 °C T_J operation
- Low forward voltage drop
- · High frequency operation





RoHS*

- Guard ring for enhanced ruggedness and long term reliability
- Lead (Pb)-free ("PbF" suffix)
- · Designed and qualified for industrial level

DESCRIPTION

The 8TQ...GPbF 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	VALUES	UNITS	
I _{F(AV)}	Rectangular waveform	8	Α	
V _{RRM}		100	V	
I _{FSM}	t _p = 5 μs sine	850	Α	
V _F	8 Apk, T _J = 125 °C	0.58	V	
T _J	Range	- 55 to 175	°C	

VOLTAGE RATINGS				
PARAMETER	SYMBOL	8TQ100GPbF	UNITS	
Maximum DC reverse voltage V _R		100	V	
Maximum working peak reverse voltage	V_{RWM}	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	
Maximum peak one cycle non-repetitive surge current	lsou	5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated	850	Α
See fig. 7	IFSM	10 ms sine or 6 ms rect. pulse	V _{RRM} applied	230	
Non-repetitive avalanche energy	E _{AS}	$T_J = 25 ^{\circ}\text{C}, \ I_{AS} = 0.50 \text{A}, \ L = 60 \text{mH}$		7.50	mJ
Repetitive avalanche current	I _{AR}	Current decaying linearly to zero in 1 μ s Frequency limited by T_J maximum $V_A = 1.5$ x V_R typical		0.50	А

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

8TQ100GPbF

Vishay High Power Products Schottky Rectifier, 8 A



ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop V See fig. 1	V _{FM} ⁽¹⁾	8 A	T _J = 25 °C	0.72	V
		16 A		88.0	
	V FM (1)	8 A	- T _J = 125 °C	0.58	
		16 A		0.69	
Maximum reverse leakage curent	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	nΗ
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 ran	ge	T _J , T _{Stg}		- 55 to 175	°C
Maximum thermal resista junction 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 \cdot in)
Marking device			Case style TO-220AC	8TQ100G	



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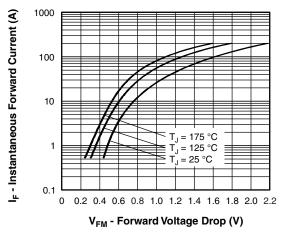


Fig. 1 - Maximum Forward Voltage Drop Characteristics

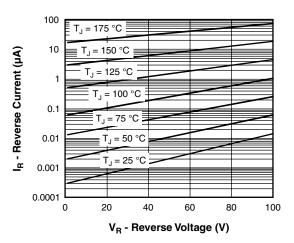


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

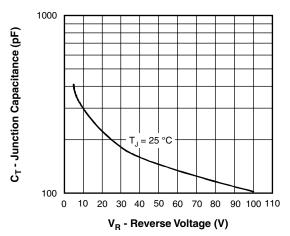


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

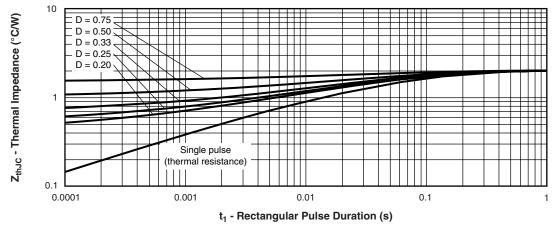


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

Vishay High Power Products Schottky Rectifier, 8 A



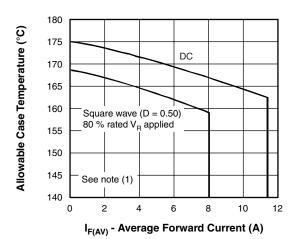


Fig. 5 - Maximum Allowable Case Temperature vs.
Average Forward Current

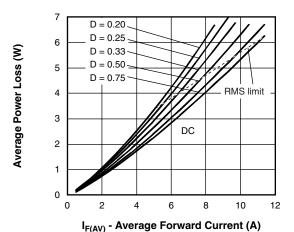


Fig. 6 - Forward Power Loss Characteristics

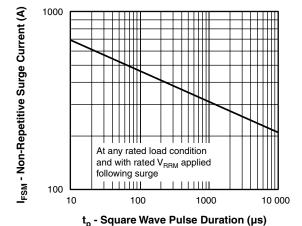


Fig. 7 - Maximum Non-Repetitive Surge Current

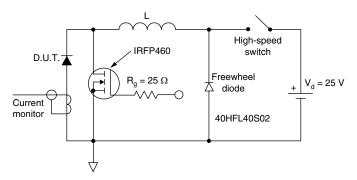


Fig. 8 - Unclamped Inductive Test Circuit

Note

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

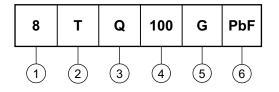


Schottky Rectifier, 8 A

Vishay High Power Products

ORDERING INFORMATION TABLE

Device code



1 - Current rating (8 = 8 A)

2 - T = TO-220

3 - Q = Schottky "Q" series

4 - Voltage rating (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?95221			
Part marking information	http://www.vishay.com/doc?95224		
SPICE model	http://www.vishay.com/doc?95291		

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