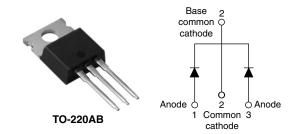


Vishay High Power Products

Schottky Rectifier, 2 x 15 A



PRODUCT SUMMARY				
I _{F(AV)} 2 x 15 A				
V_{R}	25/30 V			

FEATURES

- 150 °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 32CTQ... Schottky rectifier series has been optimized for low reverse leakage at high temperature. 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	30	Α		
V _{RRM}		25/30	V		
I _{FSM}	t _p = 5 μs sine	900	Α		
V _F	15 Apk, T _J = 125 °C	0.40	V		
T _J	Range	- 55 to 150	°C		

VOLTAGE RATINGS				
PARAMETER	SYMBOL	32CTQ025	32CTQ030	UNITS
Maximum DC reverse voltage	V_R	25	30	V
Maximum working peak reverse voltage	V_{RWM}	25	30	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 = 115 °C, rectangular waveform		30	
Maximum peak one cycle non-repetitive surge current I _{ESM}	5 µs sine or 3 µs rect. pulse	Following any rated load condition and with rated	900	Α	
See fig. 7	I _{FSM}	10 ms sine or 6 ms rect. pulse	V _{RRM} applied	250	
Non-repetitive avalanche energy	E _{AS}	$T_J = 25 ^{\circ}\text{C}$, $I_{AS} = 1.20 \text{A}$, $L = 11.10 \text{mH}$		13	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		3	А

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ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop See fig. 1	V _{FM} ⁽¹⁾	15 A	T _J = 25 °C	0.49	V
		30 A		0.58	
		15 A	- T _J = 125 °C	0.40	
		30 A		0.53	
Maximum reverse leakage current	1 (1)	T _J = 25 °C	V _R = Rated V _R	1.75	- mA
See fig. 2	I _{RM} ⁽¹⁾	T _J = 125 °C		97	
Threshold voltage	V _{F(TO)}	$T_J = T_J$ maximum		0.233	V
Forward slope resistance	r _t			9.09	mΩ
Maximum junction capacitance per leg	C _T	$V_R = 5 V_{DC}$ (test signal range 100 kHz to 1 MHz) 25 °C		1300	pF
Typical series inductance per leg	L _S	Measured lead to lead 5 mm from package body		8.0	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 stor temperature range	age	T _J , T _{Stg}		- 55 to 150	°C
Maximum thermal resistand junction to case per leg	ce,	R _{thJC}	DC operation See fig. 4	3.25	°C/W
Typical thermal resistance, case to heatsink		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)
Madding daving		Coop of the TO 200AP	32CTQ025		
Marking device			Case style TO-220AB	32CTQ030	



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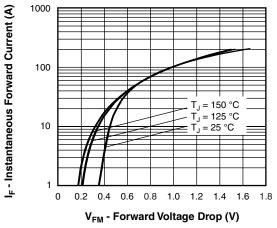


Fig. 1 - Maximum Forward Voltage Drop Characteristics

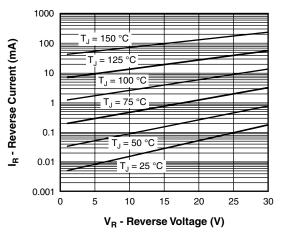


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

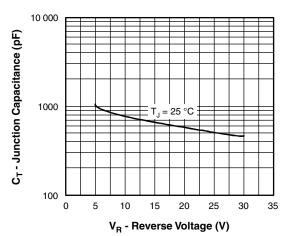


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

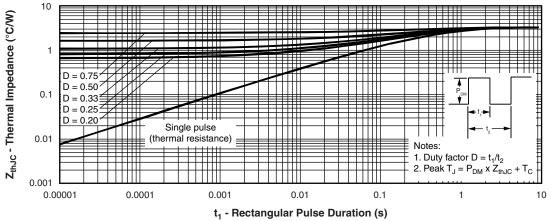


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics

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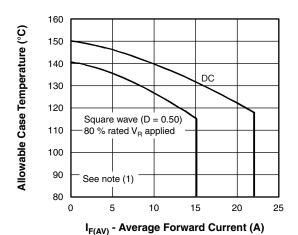


Fig. 5 - Maximum Allowable Case Temperature vs.
Average Forward Current

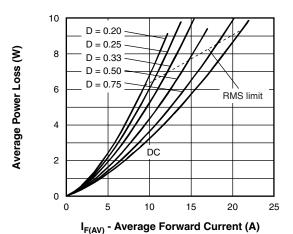


Fig. 6 - Forward Power Loss Characteristics

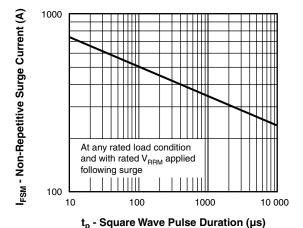


Fig. 7 - Maximum Non-Repetitive Surge Current

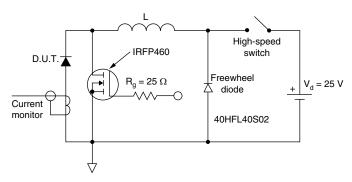


Fig. 8 - Unclamped Inductive Test Circuit

Note

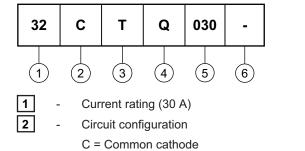
(1) Formula used: $T_C = T_J - (Pd + Pd_{REV}) \times R_{thJC}$; $Pd = Forward power loss = I_{F(AV)} \times V_{FM} at (I_{F(AV)}/D)$ (see fig. 6); $Pd_{REV} = Inverse power loss = V_{R1} \times I_R (1 - D)$; I_R at $V_{R1} = 80$ % rated V_R



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ORDERING INFORMATION TABLE





3 - Package T = TO-220

• PbF = Lead (Pb)-free

Tube standard pack quantity: 50 pieces

LINKS TO RELATED DOCUMENTS					
Dimensions http://www.vishay.com/doc?95222					
Part marking information	http://www.vishay.com/doc?95225				



Vishay

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