

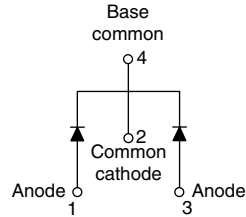
## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .

## Schottky Rectifier, 2 x 1 A


**SOT-223**


### FEATURES

- Small foot print, surface mountable
- Low profile
- Very low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Common cathode
- Designed and qualified for industrial level

### DESCRIPTION

The 20CJQ100 surface mount Schottky rectifier series has been designed for applications requiring very low forward drop and very small foot prints. Typical applications are in portables, switching power supplies, converters, automotive system, freewheeling diodes, battery charging, and reverse battery protection.

### PRODUCT SUMMARY

$I_{F(AV)}$	2 x 1 A
$V_R$	100 V

### MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	2	A
$V_{RRM}$		100	V
$I_{FSM}$	$t_p = 5 \mu s$ sine	380	A
$V_F$	1 Apk, $T_J = 125^\circ C$ (per leg)	0.67	V
$T_J$	Range	- 55 to 175	$^\circ C$

### VOLTAGE RATINGS

PARAMETER	SYMBOL	20CJQ100	UNITS
DC reverse voltage	$V_R$	100	V
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 $T_C = 129^\circ C$ , rectangular waveform	1	A
			2	
Maximum peak one cycle non-repetitive surge current per leg See fig. 7	$I_{FSM}$	5 $\mu s$ sine or 3 $\mu s$ rect. pulse	380	
		10 ms sine or 6 ms rect. pulse	22	
Non-repetitive avalanche energy per leg	$E_{AS}$	$T_J = 25^\circ C$ , $I_{AS} = 1 A$ , $L = 2 mH$	1	mJ
Repetitive avalanche current per leg	$I_{AR}$	Current decaying linearly to zero in 1 $\mu s$ Frequency limited by $T_J$ maximum $V_A = 1.5 \times V_R$ typical	1	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop per leg See fig. 1	$V_{FM}^{(1)}$	1 A	$T_J = 25\text{ }^\circ\text{C}$	0.79	V
		2 A		0.89	
		1 A	$T_J = 125\text{ }^\circ\text{C}$	0.67	
		2 A		0.76	
Maximum reverse leakage current per leg See fig. 2	$I_{RM}^{(1)}$	$T_J = 25\text{ }^\circ\text{C}$	$V_R = \text{Rated } V_R$	0.1	mA
		$T_J = 125\text{ }^\circ\text{C}$		10	
Typical junction capacitance per leg	$C_T$	$V_R = 5 V_{DC}$ (test signal range 100 kHz to 1 MHz) $25\text{ }^\circ\text{C}$		45	pF
Typical series inductance per leg	$L_S$	Measured lead to lead 5 mm from package body		6	nH
Maximum voltage rate of change	$dV/dt$	Rated $V_R$		10 000	V/ $\mu$ s

**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	$T_J^{(1)}, T_{Stg}$			- 55 to 175	$^\circ\text{C}$
Maximum thermal resistance, junction to ambient	$R_{thJL}$	DC operation		25	$^\circ\text{C/W}$
Maximum thermal resistance, junction to lead	$R_{thJA}$		65		
Approximate weight				0.13	g
				0.0045	oz.
Marking device		Case style SOT-223		2CJQJ	

**Note**(1)  $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{thJA}}$  thermal runaway condition for a diode on its own heatsink

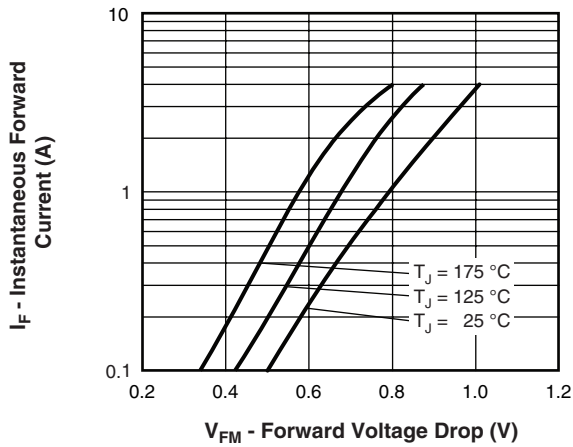


Fig. 1 - Maximum Forward Voltage Drop Characteristics

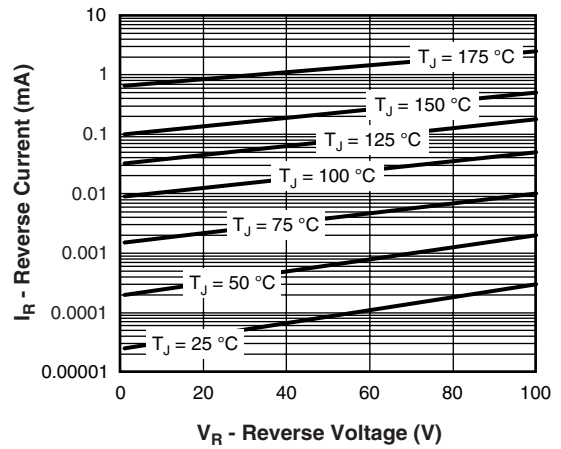


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage

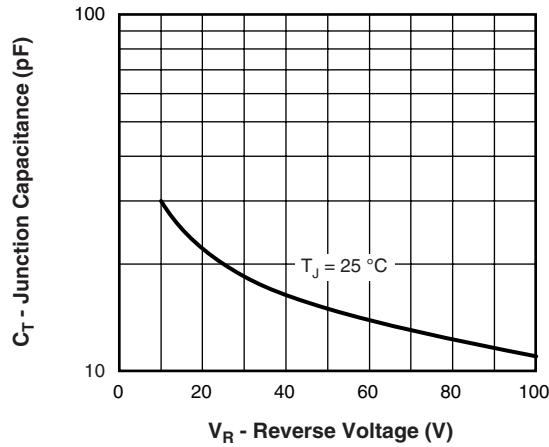


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage

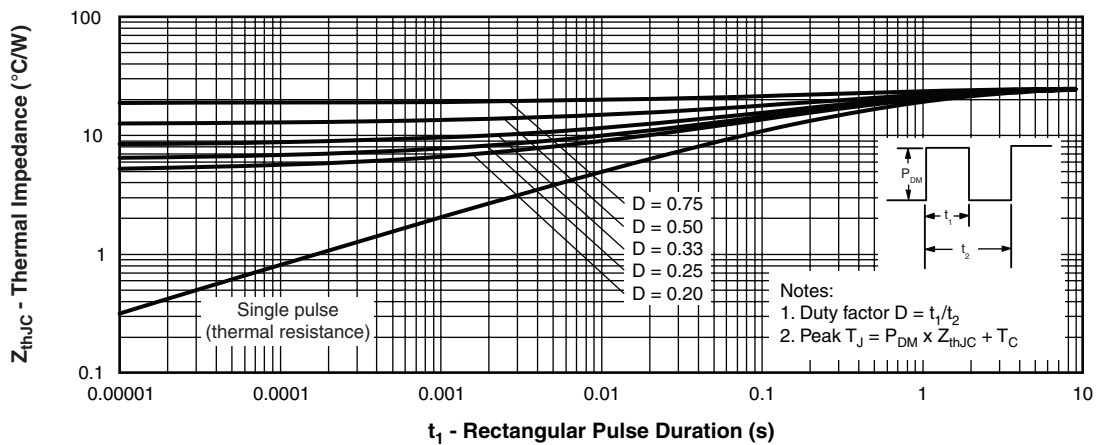


Fig. 4 - Maximum Thermal Impedance  $Z_{thJC}$  Characteristics

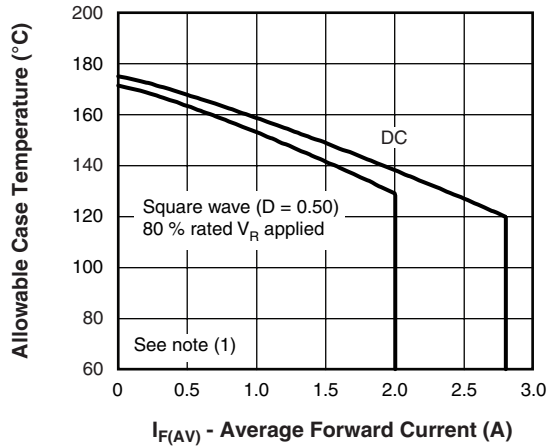


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current

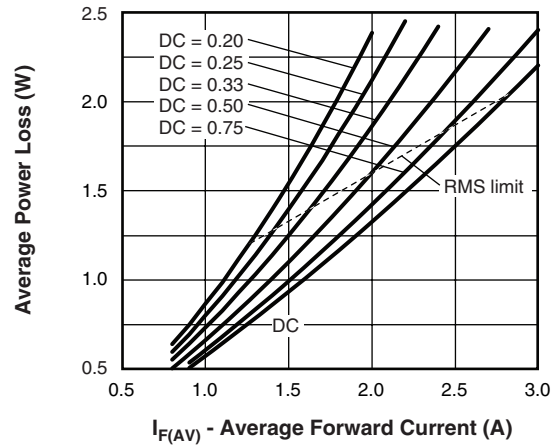


Fig. 6 - Forward Power Loss Characteristics

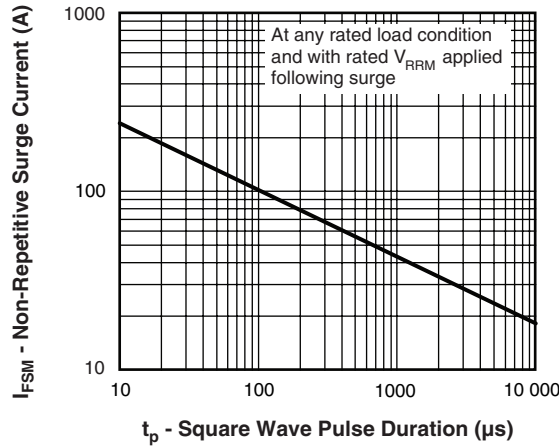


Fig. 7 - Maximum Non-Repetitive Surge Current (Per Leg)

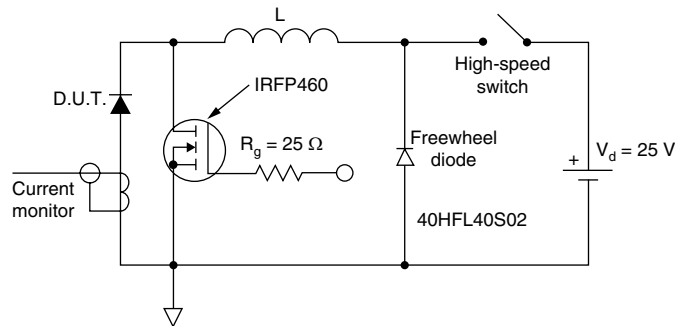


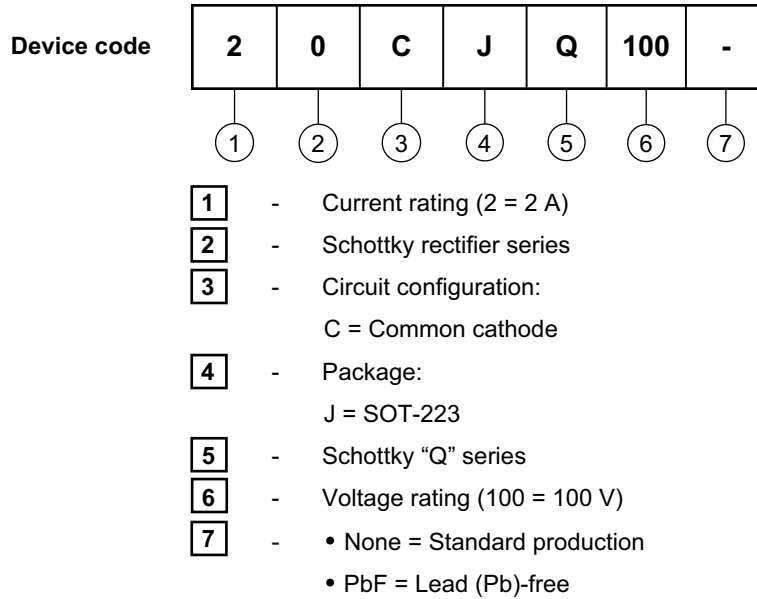
Fig. 8 - Unclamped Inductive Test Circuit

**Note**

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



**ORDERING INFORMATION TABLE**



LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95022">http://www.vishay.com/doc?95022</a>
Part marking information	<a href="http://www.vishay.com/doc?95031">http://www.vishay.com/doc?95031</a>
Packaging information	<a href="http://www.vishay.com/doc?95035">http://www.vishay.com/doc?95035</a>



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.