

International
IOR Rectifier

10MQ060NPbF

SCHOTTKY RECTIFIER

2.1 Amp

$$I_{F(AV)} = 2.1\text{Amp}$$

$$V_R = 60\text{V}$$

Major Ratings and Characteristics

Characteristics	Value	Units
I_F DC	2.1	A
V_{RRM}	60	V
I_{FSM} @ $t_p = 5\mu\text{s}$ sine	40	A
V_F @ 1.5A pk, $T_J = 125^\circ\text{C}$	0.63	V
T_J range	-55 to 150	$^\circ\text{C}$

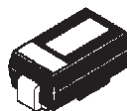
Description/ Features

The 10MQ060NPbF surface mount Schottky rectifier has been designed for applications requiring low forward drop and very small foot prints on PC boards. Typical applications are in disk drives, switching power supplies, converters, free-wheeling diodes, battery charging, and reverse battery protection.

- Small foot print, surface mountable
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Lead-Free ("PbF" suffix)

Case Styles

10MQ060NPbF



SMA



Voltage Ratings

Part number	10MQ060NPbF
V_R Max. DC Reverse Voltage (V)	60
V_{RWM} Max. Working Peak Reverse Voltage (V)	

Absolute Maximum Ratings

Parameters	10MQ	Units	Conditions	
I _{F(AV)} Max. Average Forward Current * See Fig. 4	1.5	A	50% duty cycle @ T _L = 120 °C, rectangular wave form. On PC board 9mm ² island(.013mm thick copper pad area)	
I _{FSM} Max. Peak One Cycle Non-Repetitive Surge Current * See Fig. 6	40	A	5μs Sine or 3μs Rect. pulse	Following any rated load condition and with rated V _{RRM} applied
	10		10ms Sine or 6ms Rect. pulse	
E _{AS} Non-Repetitive Avalanche Energy	2.0	mJ	T _J = 25 °C, I _{AS} = 1A, L = 4mH	
I _{AR} Repetitive Avalanche Current	1.0	A		

Electrical Specifications

Parameters		10MQ	Units	Conditions	
V _{FM}	Max. Forward Voltage Drop (1) * See Fig. 1	0.63	V	@ 1A	T _J = 25 °C
		0.71	V	@ 1.5A	
		0.57	V	@ 1A	T _J = 125 °C
		0.63	V	@ 1.5A	
I _{RM}	Max. Reverse Leakage Current (1) * See Fig. 2	0.5	mA	T _J = 25 °C	V _R = rated V _R
		7.5	mA	T _J = 125 °C	
V _{F(TO)}	Threshold Voltage	0.45	V	T _J = T _J max.	
r _t	Forward Slope Resistance	86.8	mΩ		
C _T	Typical Junction Capacitance	31	pF	V _R = 10V _{DC} , T _J = 25°C, test signal = 1Mhz	
L _S	Typical Series Inductance	2.0	nH	Measured lead to lead 5mm from package body	
dv/dt	Max. Voltage Rate of Change	10000	V/μs	(Rated V _R)	

(1) Pulse Width < 300 μs , Duty Cycle < 2%

Thermal-Mechanical Specifications

Parameters	10MQ	Units	Conditions
T_J Max. Junction Temperature Range (*)	-55 to 150	$^\circ\text{C}$	
T_{stg} Max. Storage Temperature Range	-55 to 150	$^\circ\text{C}$	
R_{thJA} Max. Thermal Resistance Junction to Ambient	80	$^\circ\text{C/W}$	DC operation
wt Approximate Weight	0.07(0.002)	g(oz.)	
Case Style	SMA		Similar D-64
Device Marking	IR1H		

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

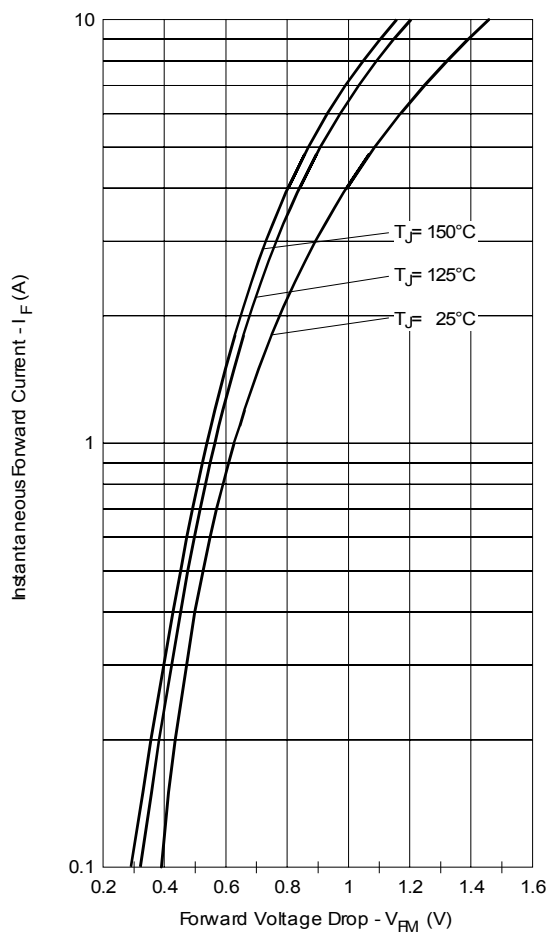


Fig. 1 - Maximum Forward Voltage Drop Characteristics

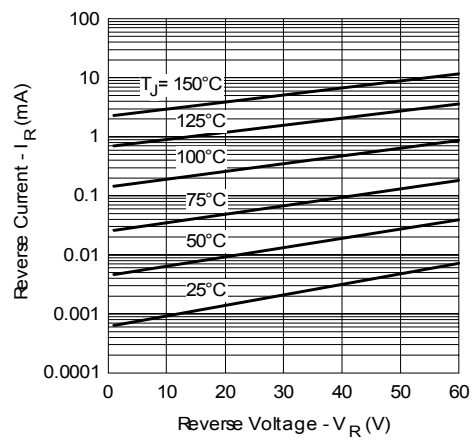


Fig. 2 - Typical Peak Reverse Current Vs. Reverse Voltage

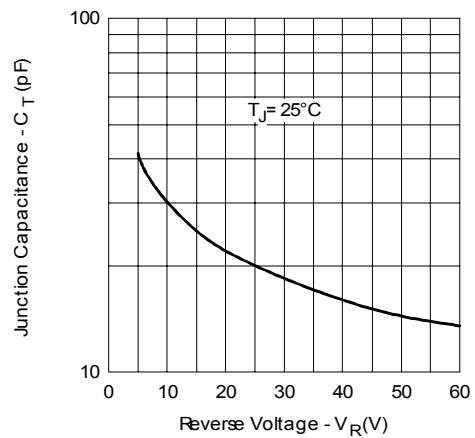


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage

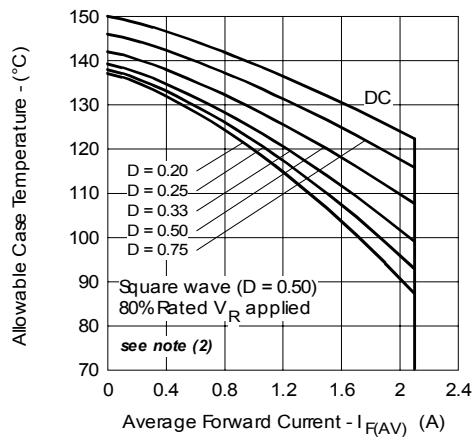


Fig. 4 - Maximum Average Forward Current Vs. Allowable Lead Temperature

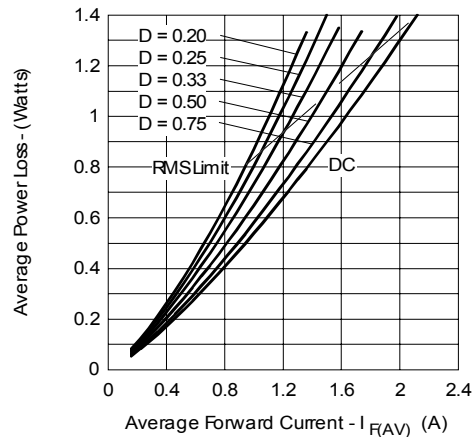


Fig. 5 - Maximum Average Forward Dissipation Vs. Average Forward Current

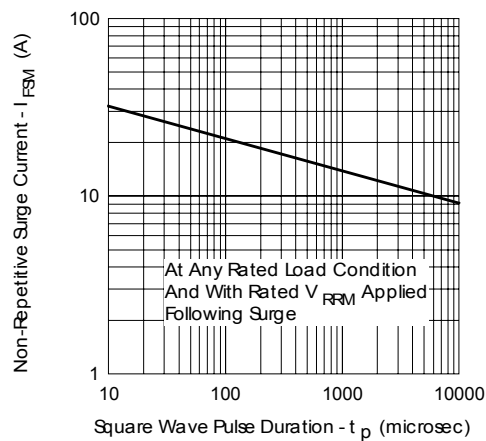


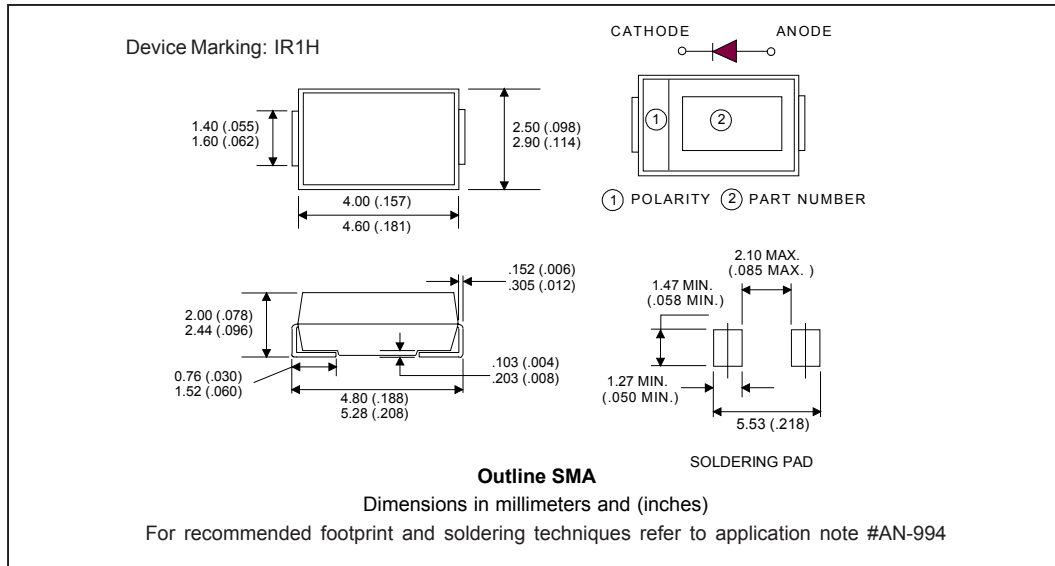
Fig. 6 - Maximum Peak Surge Forward Current Vs. Pulse Duration

(2) Formula used: $T_C = T_J - (P_d + P_{d_{REV}}) \times R_{thJC}$;

P_d = Forward Power Loss = $I_{F(AV)} \times V_{FM} @ (I_{F(AV)} / D)$ (see Fig. 6);

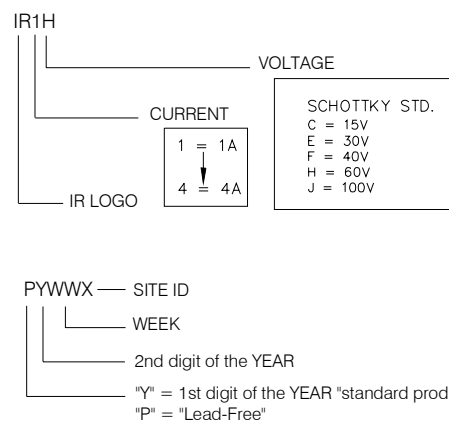
$P_{d_{REV}}$ = Inverse Power Loss = $V_{R1} \times I_R (1 - D)$; $I_R @ V_{R1} = 80\%$ rated V_R

Outline Table

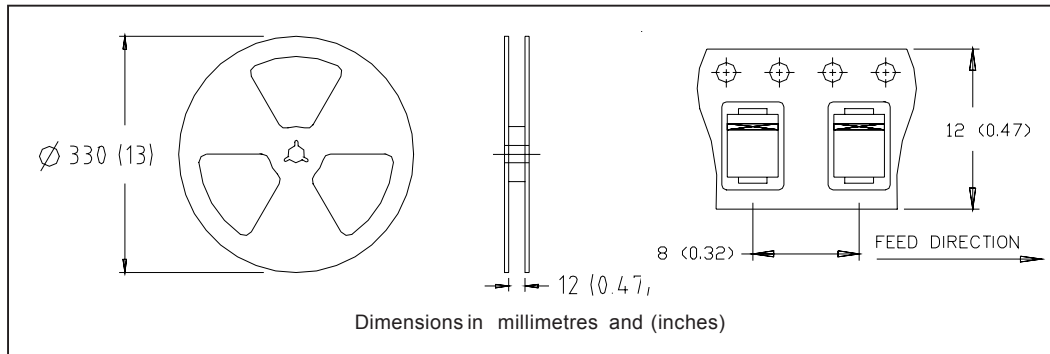


Marking & Identification

Each device has 2 rows for identification. The first row designates the device as manufactured by International Rectifier, indicated by the letters "IR", and the Part Number (indicates the current, the voltage rating and Schottky Generation). The second row indicates the year, the week of manufacturing and the Site ID.



Tape & Reel Information



Ordering Information Table

Device Code						
10	M	Q	060	N	TR	PbF
①	②	③	④	⑤	⑥	⑦
1	- Current Rating					
2	- M = SMA					
3	- Q = Schottky Q Series					
4	- Voltage Rating (060 = 60V)					
5	- N = New SMA					
6	- • none = Box (1000 pieces) • TR = Tape & Reel (7500 pieces)					
7	- • none = Standard Production • PbF = Lead-Free					

Data and specifications subject to change without notice.
This product has been designed and qualified for Industrial Level and Lead-Free.
Qualification Standards can be found on IR's Web site.

International
IOR Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7309
06/04



Notice

The products described herein were acquired by Vishay Intertechnology, Inc., as part of its acquisition of International Rectifier's Power Control Systems (PCS) business, which closed in April 2007. Specifications of the products displayed herein are pending review by Vishay and are subject to the terms and conditions shown below.

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru

www.lifeelectronics.ru