

DATA SHEET

SMS7621-092: 0201 Surface-Mount Low-Barrier Silicon Schottky Diode Anti-Parallel Pair

Applications

- Sub-harmonic mixer circuits
- Frequency multiplication

Features

- Low barrier height
- Suitable for use to 26 GHz or higher
- Very low parasitic impedance: $C_p < 0.05$ pF, $L_s < 0.2$ nH
- Low profile, ultra-miniature 0201 surface-mount packages (MSL1, 260 °C per JEDEC J-STD-020)



Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to *Skyworks Definition of Green™*, document number SQ04-0074.



Description

The SMS7621-092 is a silicon, low barrier n-type Schottky diode anti-parallel pair. This diode pair can be used for sub-harmonic mixer circuits and other applications such as frequency multiplication.

The low barrier height produces a very small forward voltage. Together with the very low junction capacitance, the small forward voltage provides this diode pair with very low local oscillator power requirements.

The package and pin configuration are shown in Figure 1.

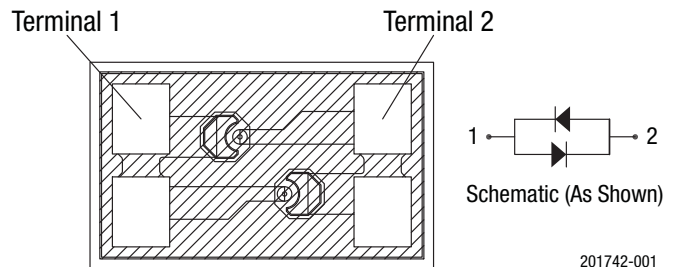


Figure 1. SMS7621-092 Pinout (Bottom View)

Electrical and Mechanical Specifications

The absolute maximum ratings of the SMS7621-092 are provided in Table 1. Electrical specifications are provided in Table 2.

A graph of forward voltage versus forward bias current is shown in Figure 2.

Table 1. SMS7621-092 Absolute Maximum Ratings (Per Junction)¹

Parameter	Symbol	Minimum	Maximum	Units
Forward current	I _F		50	mA
Dissipated power @ 25 °C	P _d		75	mW
Storage temperature	T _{STG}	-65	+200	°C
Operating temperature	T _A	-65	+150	°C
Electrostatic discharge: Human Body Model (HBM), Class 0	ESD		<250	V

¹ Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

ESD HANDLING: Although this device is designed to be as robust as possible, electrostatic discharge (ESD) can damage this device. This device must be protected at all times from ESD when handling or transporting. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD handling precautions should be used at all times.

Table 2. SMS7621-092 Electrical Specifications¹
(T_s = +25 °C Per Junction, Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min	Typical	Max	Units
Breakdown voltage ²	V _B	I _R = 10 μA	2			V
Total capacitance	C _T	V _R = 0 V, f = 1 MHz		0.3		pF
Forward voltage	V _F	I _F = 1 mA	260	290	320	mV
Total resistance	R _T	I _F = 5 mA		15	18	Ω

¹ Performance is guaranteed only under the conditions listed in this table.

² It is not possible to nondestructively measure the reverse breakdown voltage of a diode in an anti-parallel pair configuration. This parameter guaranteed by design only.

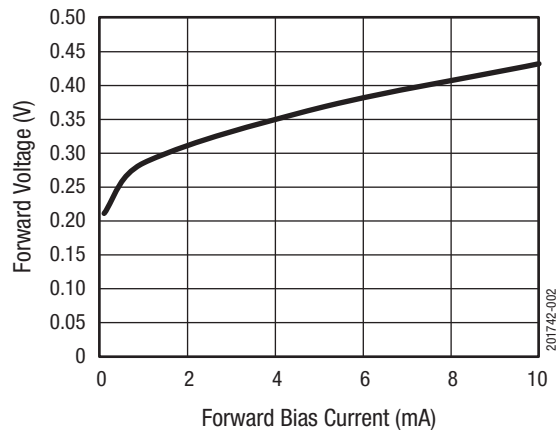


Figure 2. Forward Voltage vs Forward Current
(T_s = 25 °C)

Package Dimensions

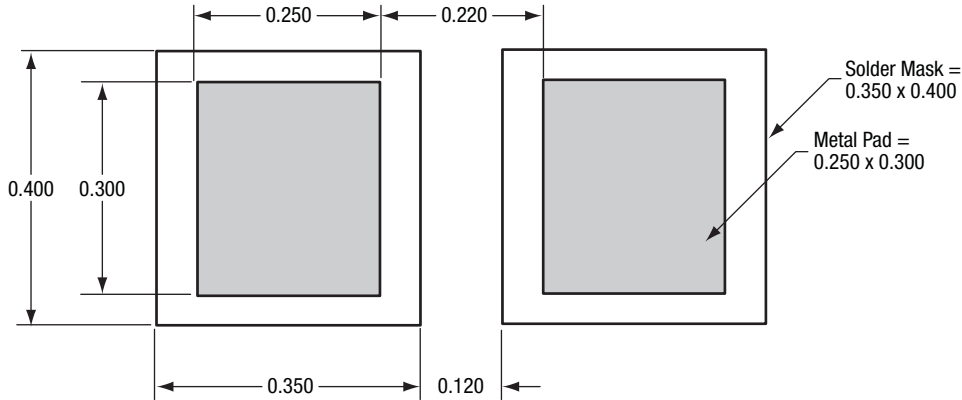
The PCB layout footprint for the SMS7621-092 is provided in Figure 3. A suggested stencil aperture drawing is shown in Figure 4. Package dimensions for the SMS7621-092 are shown in Figure 5. Tape and reel dimensions are provided in Figure 6.

Package and Handling Information

Instructions on the shipping container label regarding exposure to moisture after the container seal is broken must be followed. Otherwise, problems related to moisture absorption may occur when the part is subjected to high temperature during solder assembly.

The SMS7621-092 is rated to Moisture Sensitivity Level 1 (MSL1) at 260 °C. It can be used for lead or lead-free soldering. For additional information, refer to the Skyworks Application Note, *Solder Reflow Information*, document number 200164.

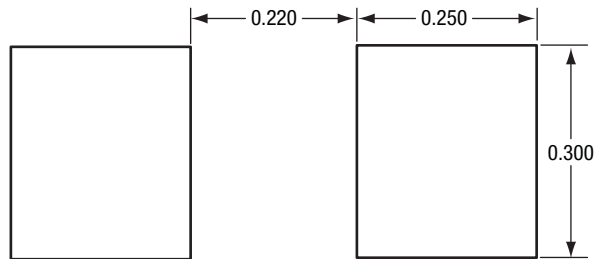
Care must be taken when attaching this product, whether it is done manually or in a production solder reflow environment. Production quantities of this product are shipped in a standard tape and reel format.



All measurements in millimeters

201742-003

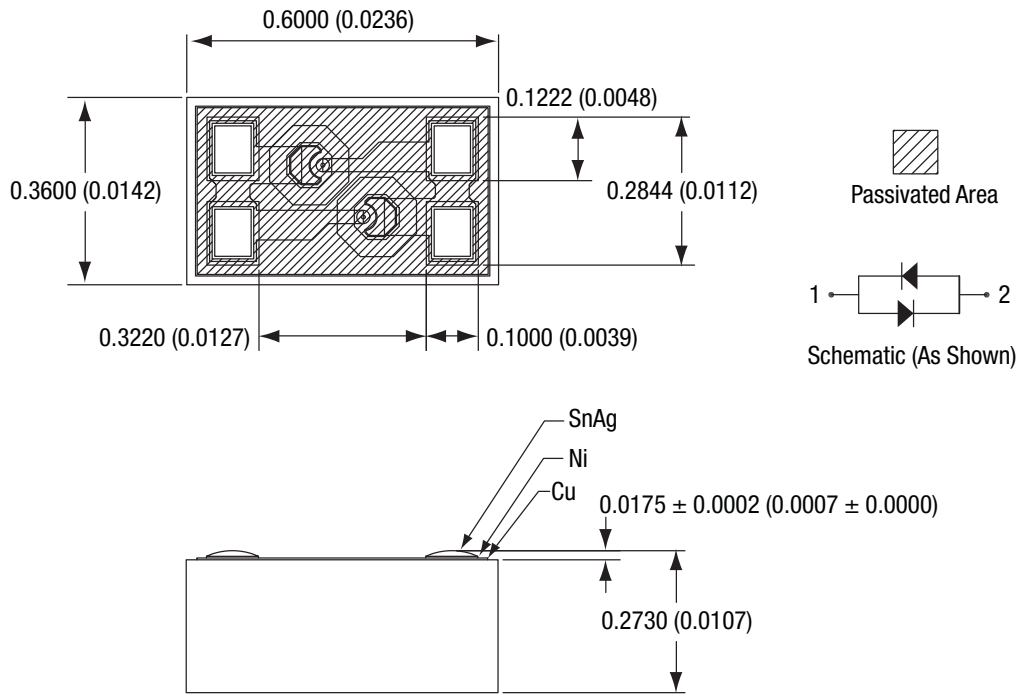
Figure 3. SMS7621-092 PCB Layout Footprint



All measurements in millimeters

201742-004

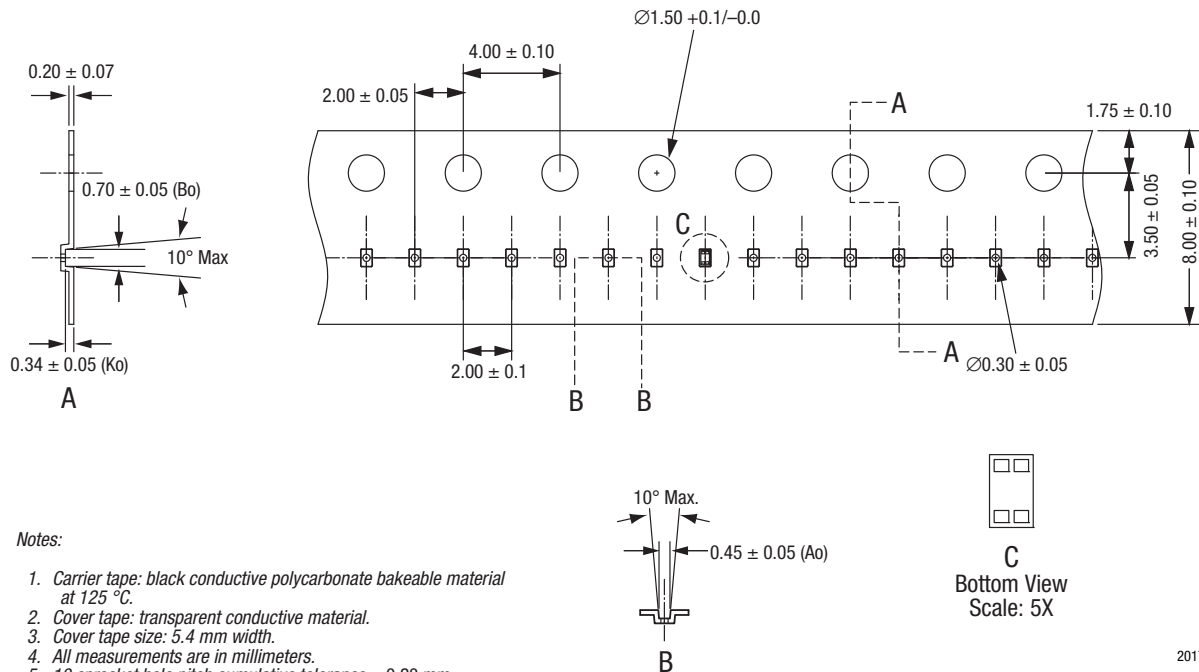
Figure 4. SMS7621-092 Suggested Stencil Aperture



All measurements in millimeters (inches shown in parentheses).
Unless otherwise specified, all dimensions are ± 0.025 mm (± 0.001 in.).

201742-005

Figure 5. SMS7621-092 Package Dimensions



Notes:

1. Carrier tape: black conductive polycarbonate bakeable material at 125 °C.
2. Cover tape: transparent conductive material.
3. Cover tape size: 5.4 mm width.
4. All measurements are in millimeters.
5. 10 sprocket hole pitch cumulative tolerance: ± 0.20 mm.

201742-006

Figure 6. SMS7621-092 Tape and Reel Dimensions

Ordering Information

Model Name	Manufacturing Part Number
SMS7621-092: Surface-Mount Low-Barrier Schottky Diode Anti-Parallel Pair	SMS7621-092

Copyright © 2012, 2016 Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of stated published specifications or parameters.

Skyworks and the Skyworks symbol are trademarks or registered trademarks of Skyworks Solutions, Inc., in the United States and other countries. Third-party brands and names are for identification purposes only, and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А