

DATA SHEET

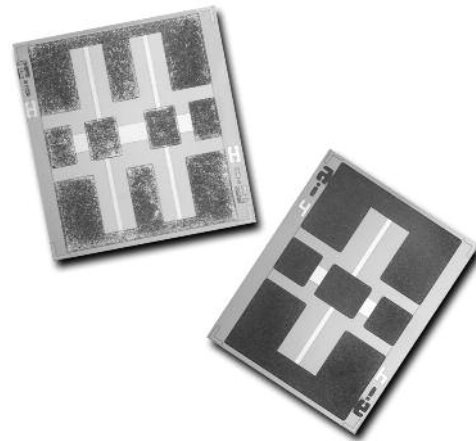
ATN3580 Series: Fixed Attenuator Pads

Applications

- Attenuators

Features

- Specified flat response to 40 GHz
- Return loss > 16 dB to 40 GHz
- Available at 1–10, 12, 15, 20, 30 and 40 dB
- Power handling to 1 W CW
- Rugged thin-film silicon chips
- Lead (Pb)-free, RoHS-compliant, and Green™



Description

The ATN3580 series of attenuator chips incorporates thin-film resistors on high-resistivity silicon to achieve precision attenuation, tight flatness and excellent return loss to 40 GHz. The design uses a balanced TEE resistive structure to assure broad bandwidth performance. The thin-film technology offers improved power-handling capability in comparison to the traditional thick-film printed attenuator. All ATN3580 attenuator chips are specified for their attenuation at DC. A wafer probe sample test is performed to 40 GHz to assure the flatness specification.

NEW



Skyworks Green™ products are RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, are halogen free according to IEC-61249-2-21, and contain <1,000 ppm antimony trioxide in polymeric materials.

Absolute Maximum Ratings

| Characteristic | Value |
|------------------------|-------------------|
| Incident power @ 25 °C | 1 W |
| Operating temperature | -55 °C to +150 °C |
| Storage temperature | -65 °C to +150 °C |

Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum Ratings. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

CAUTION: Although these devices are designed to be robust, ESD (Electrostatic Discharge) can cause permanent damage. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

Electrical Specifications at 25 °C

| Nominal Attenuation (dB) | DC Tolerance (dB) | Attenuator Flatness | | | Outline Drawing | Part Number |
|--------------------------|-------------------|---------------------|-------------------|-----------------|-----------------|-------------|
| | | 0.1–12 GHz (dB) | 0.1–26.5 GHz (dB) | 0.1–40 GHz (dB) | | |
| 1 | ±0.15 | 0.2 | 0.4 | 0.6 | 516-060 | ATN3580-01 |
| 2 | ±0.15 | 0.2 | 0.4 | 0.6 | 516-060 | ATN3580-02 |
| 3 | ±0.25 | 0.2 | 0.4 | 0.6 | 516-060 | ATN3580-03 |
| 4 | ±0.25 | 0.2 | 0.4 | 0.6 | 516-060 | ATN3580-04 |
| 5 | ±0.25 | 0.3 | 0.5 | 0.8 | 516-060 | ATN3580-05 |
| 6 | ±0.25 | 0.3 | 0.5 | 0.8 | 518-060 | ATN3580-06 |
| 7 | ±0.25 | 0.3 | 0.5 | 0.8 | 518-060 | ATN3580-07 |
| 8 | ±0.35 | 0.3 | 0.5 | 0.8 | 518-060 | ATN3580-08 |
| 9 | ±0.35 | 0.3 | 0.5 | 0.8 | 518-060 | ATN3580-09 |
| 10 | ±0.35 | 0.4 | 0.6 | 1 | 518-060 | ATN3580-10 |
| 12 | ±0.50 | 0.4 | 0.6 | 1 | 518-060 | ATN3580-12 |
| 15 | ±0.50 | 0.4 | 0.6 | 1 | 518-060 | ATN3580-15 |
| 20 | ±1.10 | 0.4 | 0.6 | 1 | 518-060 | ATN3580-20 |
| 30 | ±1.60 | 0.6 | 1 | 2 | 518-060 | ATN3580-30 |
| 40 | ±1.60 | 1 | 2 | 4 | 518-060 | ATN3580-40 |

Minimum Return Loss S₁₁

| | 0.1–7 GHz (dB) | 0.1–12 GHz (dB) | 0.1–26.5 GHz (dB) | 0.1–40 GHz (dB) |
|----------------|----------------|-----------------|-------------------|-----------------|
| ATN3580 Series | 25 | 23 | 18 | 15 |

Typical Performance Data

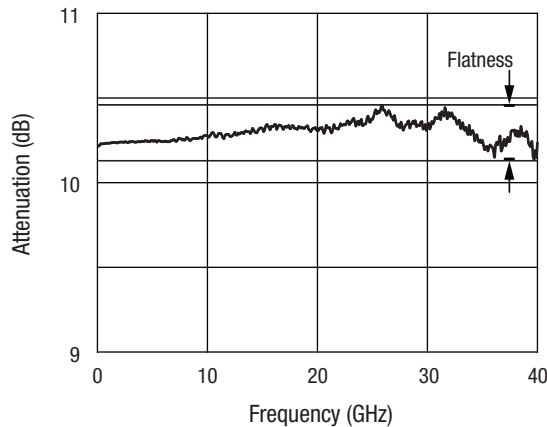


Figure 1. ATN3580-10
Typical Attenuation vs. Frequency

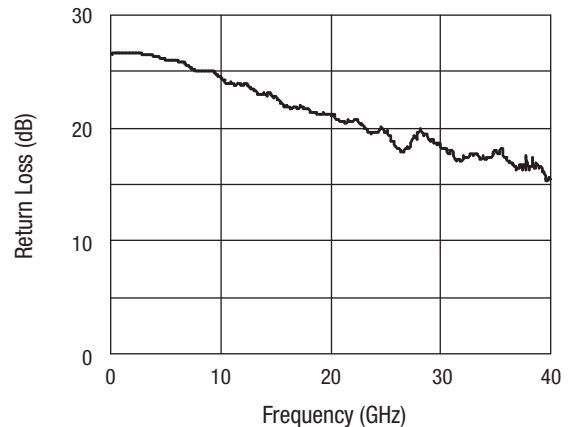
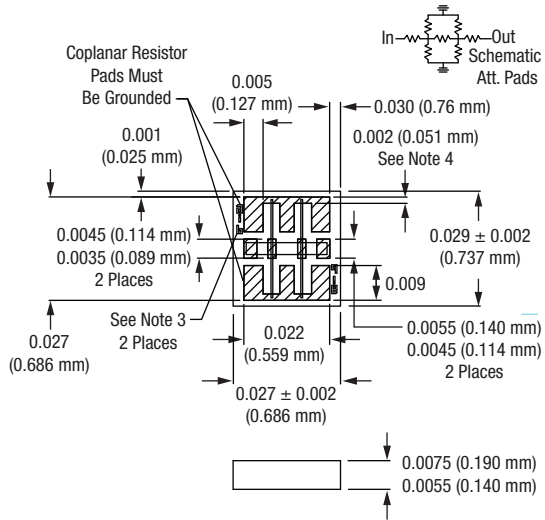


Figure 2. ATN3580-10
Typical Input Return Loss vs. Frequency

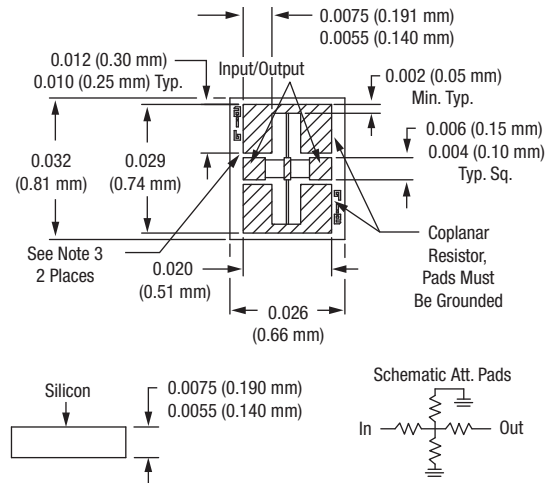
Outline Drawings

518-060 (ATN3580-04)



1. Cross hatching = gold contact areas.
2. Dimensions not specified in this drawing vary per attenuation value.
3. Indicates attenuation value.
4. This DIM. can be as high as 0.012 for high attenuation values.

516-060 (ATN3580-04)



1. Cross hatching = gold contact areas.
2. Dimensions not specified in this drawing vary per attenuation value.
3. Indicates attenuation value.
4. Back surface is gold, grounding not required.

Copyright © 2002, 2003, 2004, 2005, 2006, 2007, 2008, 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, the Skyworks symbol, and "Breakthrough Simplicity" 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.