

DATA SHEET

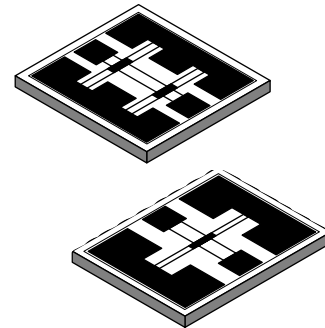
ATN3580 Series: Fixed Attenuator Pads

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

Description

The ATN3580 series of attenuator chips incorporate thin film resistors on high resistivity silicon chips to achieve precision attenuation, tight flatness and high 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. In addition, a wafer probe sample test is performed to 40 GHz to assure meeting the flatness specification. Skyworks' measurements indicate that attenuation typically increases with increasing frequency, as shown in Figure 1.



Absolute Maximum Ratings

Characteristic	Value
Incident power @ 25 °C	1 W
Operating temperature	-55 °C to +175 °C
Storage temperature	-65 °C to +200 °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 specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

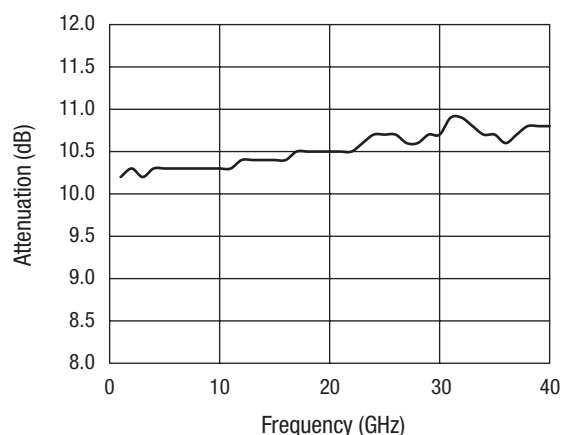
CAUTION: Although this device is designed to be as robust as possible, Electrostatic Discharge (ESD) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without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

Electrical Specifications at 25 °C

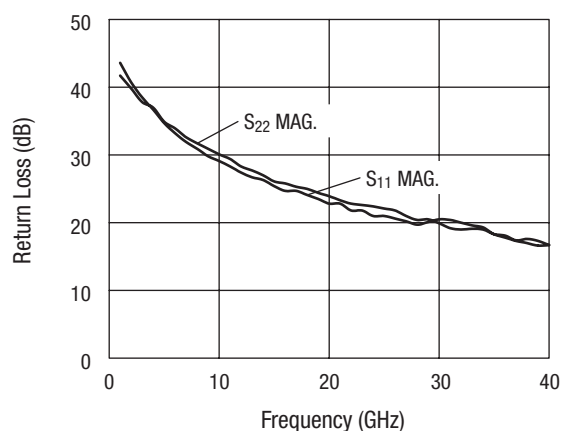
Nominal Attenuation (dB)	Attenuation Tolerance @ DC (dB)	Attenuation Flatness			Outline Drawing	Part Number
		DC–12 GHz (dB)	DC–26.5 GHz (dB)	DC–40 GHz (dB)		
1	± 0.15	± 0.20	± 0.50	± 1.00	516-060	ATN3580-01
2	± 0.15	± 0.20	± 0.50	± 1.00	516-060	ATN3580-02
3	± 0.25	± 0.20	± 0.50	± 1.00	516-060	ATN3580-03
4	± 0.25	± 0.20	± 0.50	± 1.00	516-060	ATN3580-04
5	± 0.25	± 0.20	± 0.50	± 1.00	516-060	ATN3580-05
6	± 0.25	± 0.40	± 0.60	± 1.00	518-060	ATN3580-06
7	± 0.25	± 0.40	± 0.60	± 1.00	518-060	ATN3580-07
8	± 0.35	± 0.40	± 0.60	± 1.00	518-060	ATN3580-08
9	± 0.35	± 0.40	± 0.60	± 1.00	518-060	ATN3580-09
10	± 0.35	± 0.40	± 0.60	± 1.00	518-060	ATN3580-10
12	± 0.50	± 0.40	± 0.60	± 1.00	518-060	ATN3580-12
15	± 0.50	± 0.40	± 0.60	± 1.00	518-060	ATN3580-15
20	± 1.10	± 1.00	± 2.00	± 4.00	518-060	ATN3580-20
30	± 1.60	± 1.00	± 2.00	± 4.00	518-060	ATN3580-30
40	± 1.60	± 1.00	± 2.00	± 4.00	518-060	ATN3580-40

Return Loss	DC–7 GHz (dB) Min.	DC–12 GHz (dB) Min.	DC–26.5 GHz (dB) Min.	DC–40 GHz (dB) Min.
ATN3580 Series	22	20	18	16

Typical Performance Data



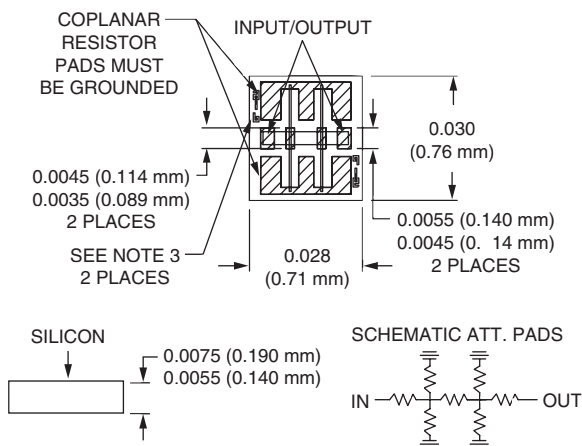
**Figure 1. ATN3580-10
Attenuation vs. Frequency**



**Figure 2. ATN3580-10
Return Loss vs. Frequency**

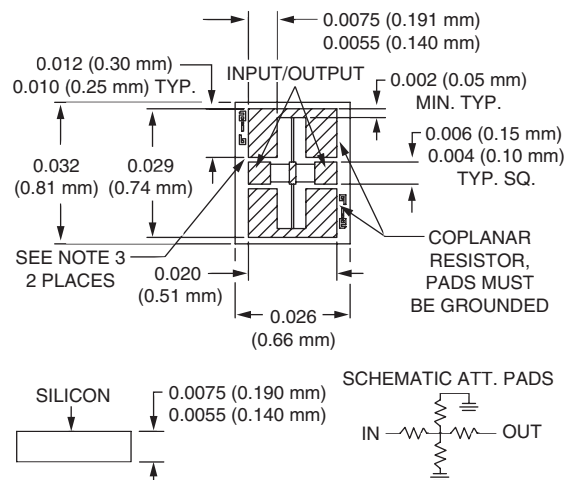
Outline Drawings

518-060



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 0.012 for high attenuation values.
5. Back surface is gold, grounding not required.

516-060



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, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products. These materials 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. Skyworks may make changes to its documentation, products, specifications and product descriptions at any time, without notice. Skyworks makes no commitment to update the information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from future changes to its documentation, products, specifications and product descriptions.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by or under this document. Except as may be provided in Skyworks Terms and Conditions of Sale for such products, Skyworks assumes no liability whatsoever in association with its documentation, products, specifications and product descriptions.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED OR OTHERWISE, RELATING TO SALE AND/OR USE OF SKYWORKS PRODUCTS INCLUDING WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. SKYWORKS FURTHER 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 SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THESE MATERIALS 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. 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.

The following are trademarks of Skyworks Solutions, Inc.: Skyworks®, the Skyworks logo, and Breakthrough Simplicity®. Product names or services listed in this publication are for identification purposes only, and may be trademarks of Skyworks or other third parties. Third-party brands and names are the property of their respective owners. Additional information, posted at www.skyworksinc.com, is incorporated by reference.