

DATA SHEET

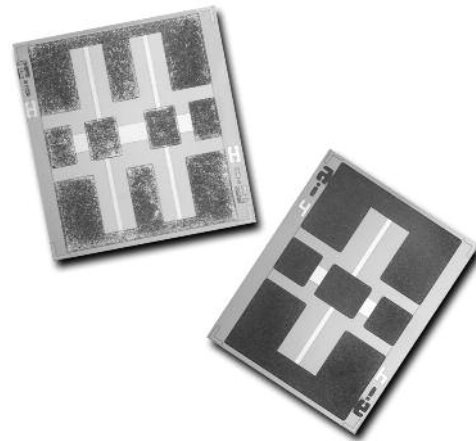
# ATN3580 Series: Fixed Attenuator Pads

## 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.

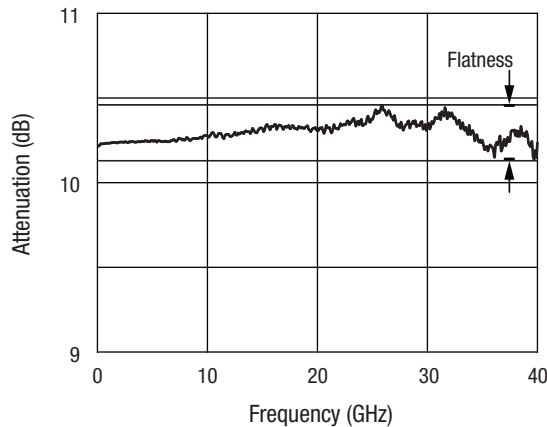
**Electrical Specifications at 25 °C**

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

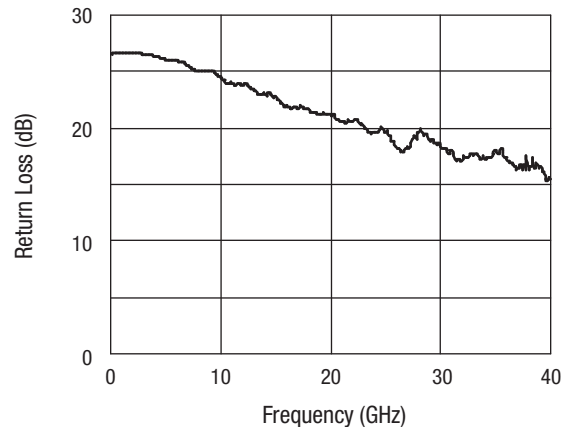
**Minimum Return Loss S<sub>11</sub>**

	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**



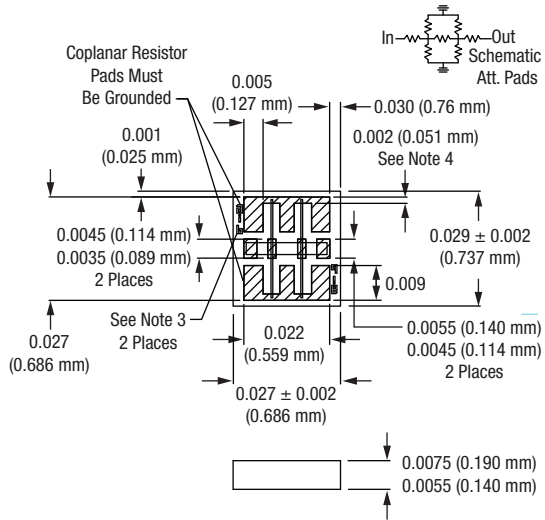
**Figure 1. ATN3580-10  
Typical Attenuation vs. Frequency**



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

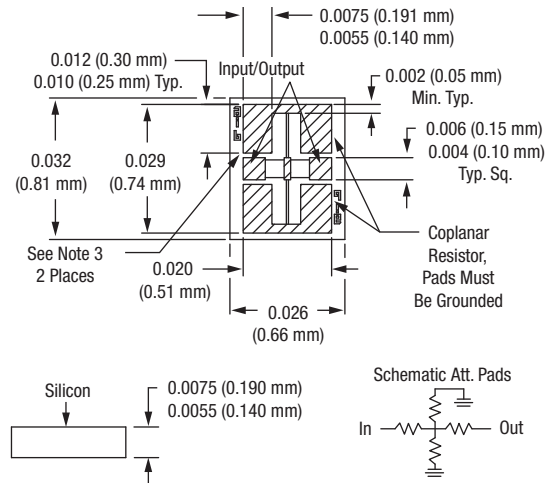
## Outline Drawings

### 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.

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