DATA SHEET

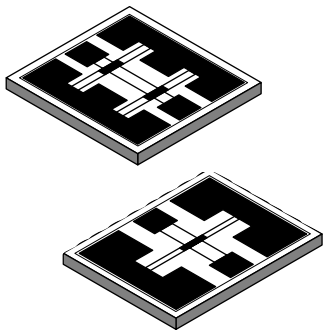
ATN3580 Series: Fixed Attenuator Pads

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

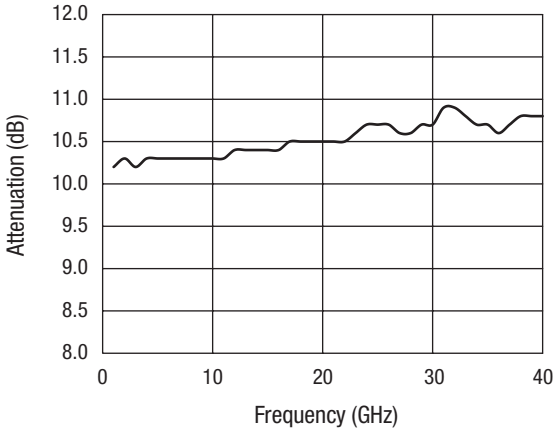


Figure 1. ATN3580-10
Attenuation vs. Frequency

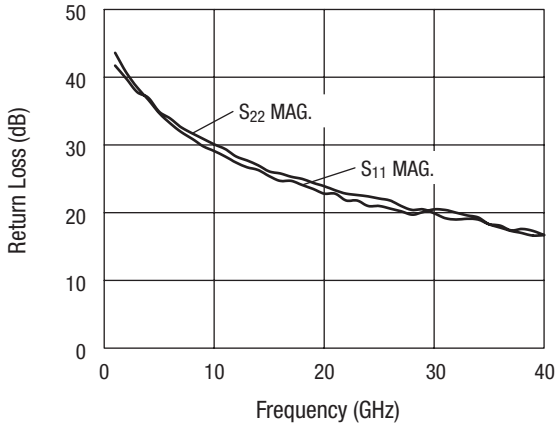
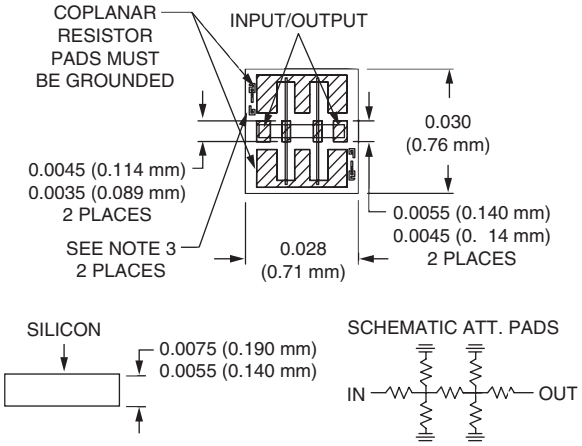


Figure 2. ATN3580-10
Return Loss vs. Frequency

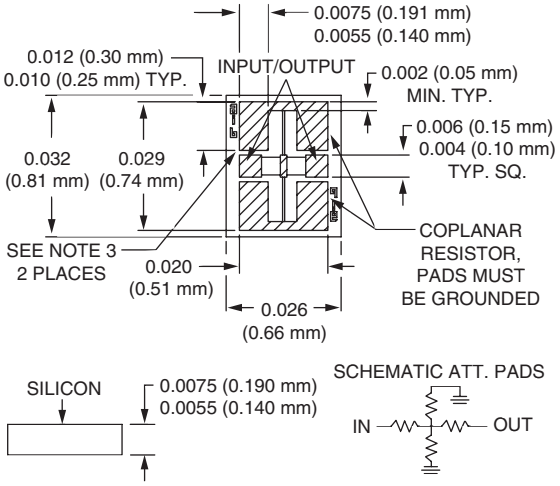
Outline Drawings

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

516-060



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