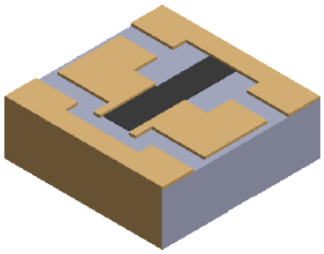
SemiGen
RF PRODUCTS | SERVICES | SOLUTIONS

SFAP Attenuator Series

Description



SemiGen RF/microwave fixed attenuator pads feature precise resistor films and superior metallization resulting in superior performance and consistency. Our advanced thin-film technology allows our parts to have full side wraps for SMT installation and a complete grounding backside for ease in attachment, as no ground bonding is required. Wire bondable top side contacts for RF in/out make these ideal for standard RF/microwave assembly techniques.

The SFAP series has been designed in 1dB increments to allow users to design in a specific value of choice. Additionally, they are available as commercial or screened to MIL-PRF-38534 Class H&K.

Features

- Suitable for epoxy die attach
- Oxide-nitride passivated
- Power Handling 2W CW
- Flat Response from DC to 40 GHz
- Return Loss >18dB
- Temp Stable TCR <100 PPM
- Available up screened MIL-PRF-38534 Class H&K

Applications

These attenuator pads are the perfect solution for a wide range of applications including microwave radio, military subsystems, fiber optics, scientific instruments and sensor applications through 40 GHz.

Absolute Maximum Ratings[1,2]

Parameter	Absolute Maximum
RF Incident Power	+33dBm
Operating Temperature	-55°C to +150°C
Storage Temperature	-65°C to +200°C
Moisture Sensitivity Rating	MSL 1

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. SemiGen does not recommend sustained operation near these survivability limits.

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Moisture Sensitivity

SemiGen attenuators are MSL 1.

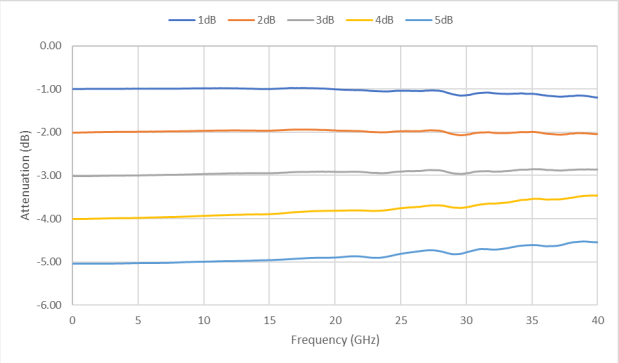
SFAP Series Electrical Specifications

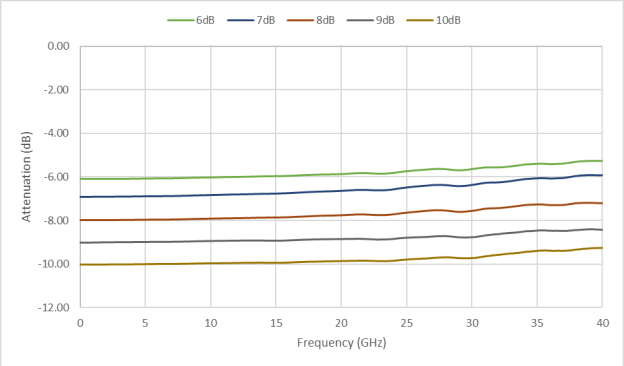
Ta = +25ºC, Z_0 = 50Ω

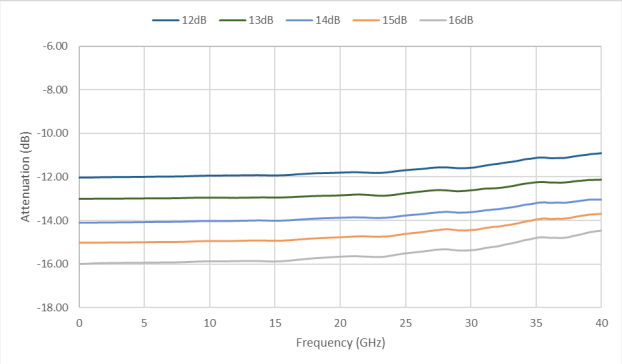
Part Number	Attenuation (dB)	Attenuation Flatness[1]				Return Loss	
		DC Tolerance (dB)	DC-20GHz (dB)	20-30GHz (dB)	30-40GHz (dB)	DC-14GHz Min (dB)	14-40GHz Typ. (dB)
SFAP-0dB	0	+0.20	+0.20	+0.40	+0.40	18.0	16.0
SFAP-1dB	1	±0.20	±0.20	±0.40	±0.40	18.0	16.0
SFAP-2dB	2	±0.20	±0.20	±0.40	±0.40	18.0	16.0
SFAP-3dB	3	±0.20	±0.20	±0.40	±0.40	18.0	16.0
SFAP-4dB	4	±0.20	±0.20	±0.40	±0.40	18.0	16.0
SFAP-5dB	5	±0.20	±0.20	±0.40	±0.40	18.0	16.0
SFAP-6dB	6	±0.20	±0.25	±0.40	±0.40	18.0	16.0
SFAP-7dB	7	±0.20	±0.25	±0.40	±0.40	18.0	16.0
SFAP-8dB	8	±0.20	±0.25	±0.40	±0.40	18.0	16.0
SFAP-9dB	9	±0.20	±0.25	±0.40	±0.40	18.0	16.0
SFAP-10dB	10	±0.20	±0.25	±0.40	±0.40	18.0	16.0
SFAP-11dB	11	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-12dB	12	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-13dB	13	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-14dB	14	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-15dB	15	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-16dB	16	±0.20	±0.30	±0.40	±0.40	18.0	16.0
SFAP-17dB	17	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-18dB	18	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-19dB	19	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-20dB	20	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-21dB	21	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-22dB	22	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-23dB	23	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-24dB	24	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-25dB	25	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-26dB	26	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-27dB	27	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-28dB	28	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-29dB	29	±0.20	±0.40	±0.60	±0.60	18.0	16.0
SFAP-30dB	30	±0.20	±0.40	±0.60	±0.60	18.0	16.0

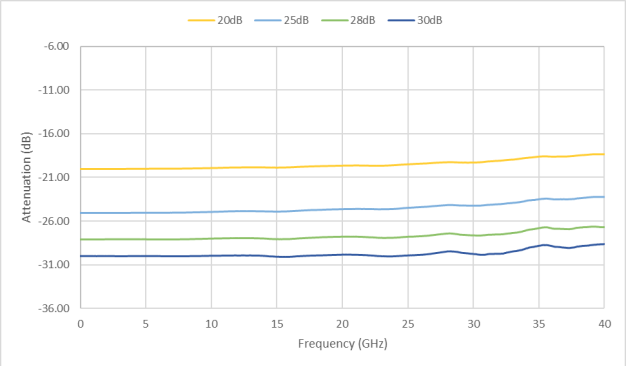
1 Specified flatness is the mean attenuator for the given frequency range.

Typical Attenuation Characteristics

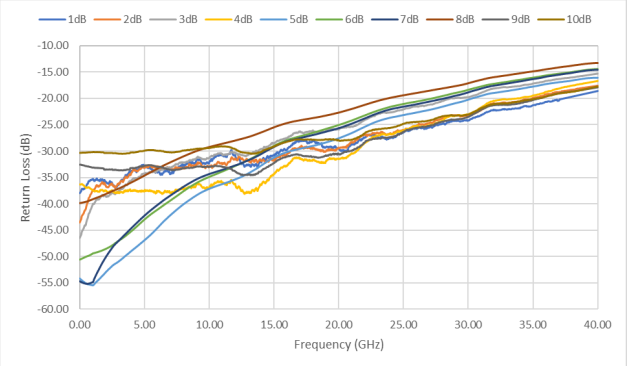


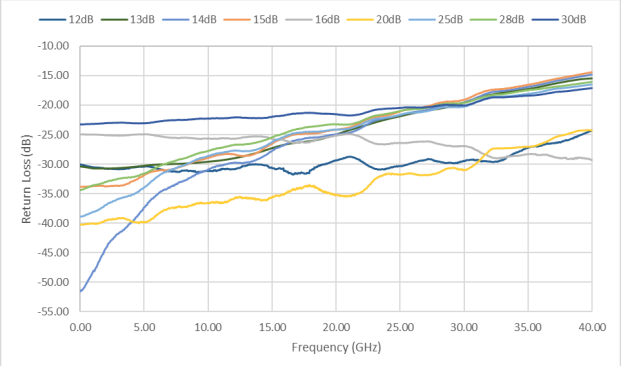






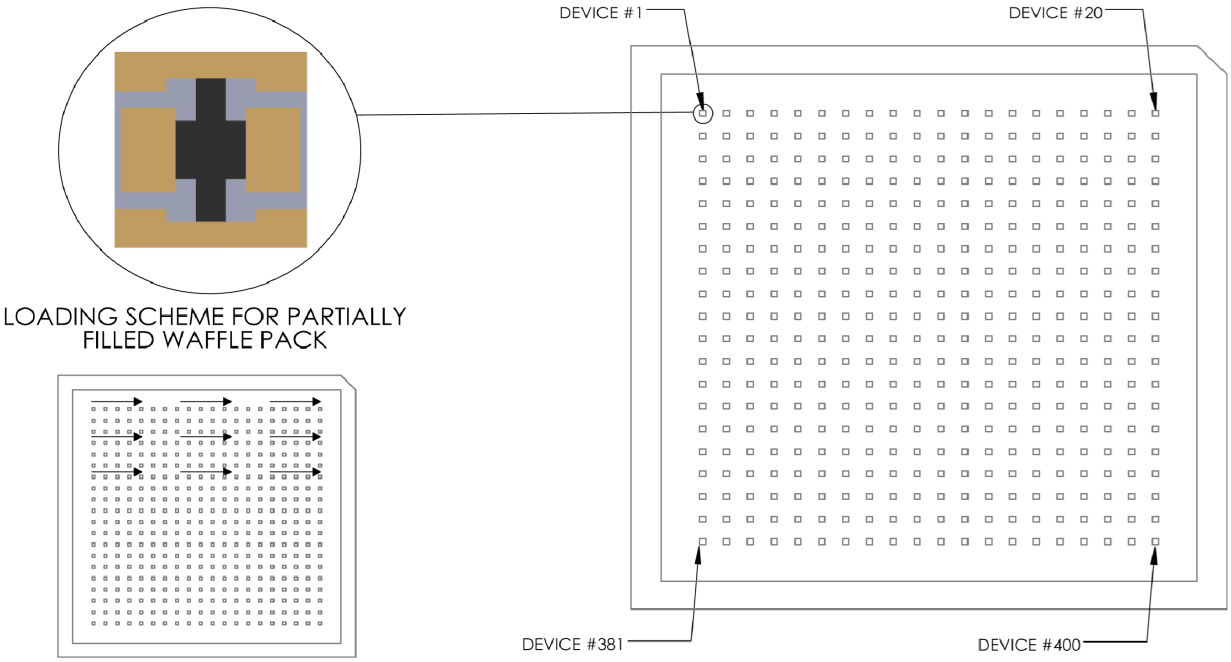
Typical Return Loss Characteristics





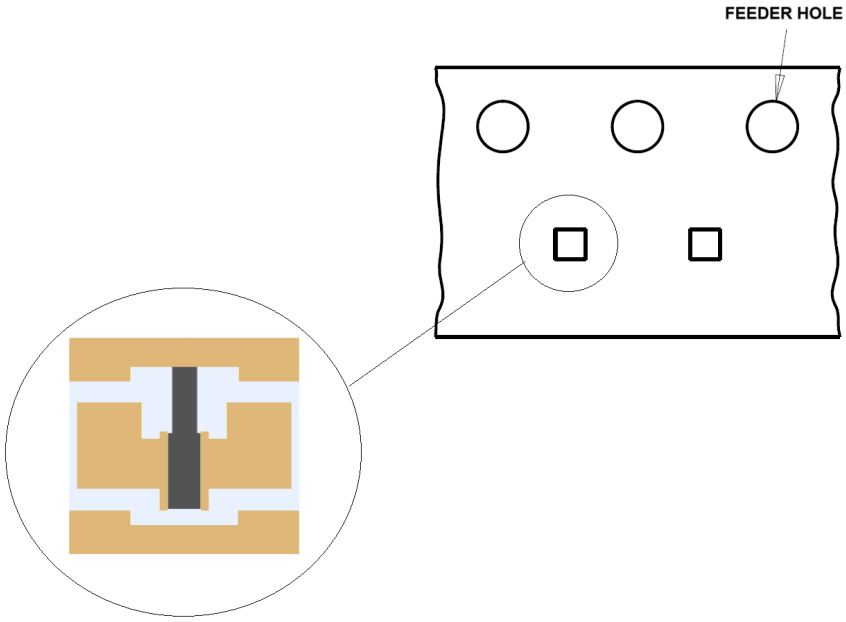
Device Orientation Within Packaging

Waffle Pak



LOADING SCHEME FOR PARTIALLY FILLED WAFFLE PACK

Tape & Reel



Ordering Information

SFAP	-	X	dB	X
Series		Value		Packaging

0 to 30

Blank for waffle pak packaging (400pcs standard quantity*)

Add –R to tape and reel (3,000 typical standard quantity*)

*Consult factory regarding alternate quantities