

Surface Mount Attenuator, DC – 20 GHz Datasheet

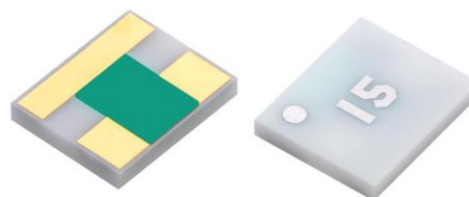
DESCRIPTION

The ATT A-Series of wideband, surface mount attenuators utilize Knowles precision thin film technology to achieve uniform performance across frequency with excellent part to part repeatability in a compact footprint.

ORDERING INFORMATION

Orderable Part Number	Packaging
ATTA###	Waffle Pack
ATTA###-T	Tape & Reel
ATTA###-T-100	Tape & Reel, 100pcs/reel
DEB-ATTA###	Design Evaluation Board

Part Type Attenuator	Series Name	Attenuation Value
ATT	A	###
Standard Options		000 = 0dB 010 = 1dB 020 = 2dB 030 = 3dB 040 = 4dB 050 = 5dB 100 = 10dB 150 = 15dB 200 = 20dB



FEATURES

- Small Size: 0.080 × 0.065 × 0.012 in (2.03 × 1.65 × 0.30 mm)
- Surface Mount Device (SMD)
- Flat frequency response
- Excellent attenuation accuracy
- Operating Temp: -55°C to +125°C
- 50Ω Matched RF Inputs/Outputs
- MSL 1
- Not ESD Sensitive

APPLICATIONS

- Radar
- Communications Systems
- Transmit/Receive (T/R) Modules
- Electronically Steered Phased Array Antennas (ESAs)
- Test and Measurement

SPECIFICATIONS

Parameter	Frequency (GHz)	Min	Typ	Max
Insertion Loss (dB)	DC – 20	See Attenuation Accuracy and Power Handling		
Return Loss (dB)		10	15	
CW Input Power		See Attenuation Accuracy and Power Handling		
Size (L x W x H)	0.080 × 0.065 × 0.012 in 2.03 × 1.65 × 0.30 mm			

ATTENUATION ACCURACY AND POWER HANDLING

Nominal Attenuation Value (dB)		Attenuation (dB) at 25 °C			CW Input Power (W) at 100 °C
		DC	10 GHz	20 GHz	
0	Min	0	0	0	6.5
	Max	0.1	0.2	0.3	
1	Min	0.6	0.8	0.9	6
	Max	1	1.2	1.3	
2	Min	1.6	1.8	2	5
	Max	2	2.2	2.4	
3	Min	2.6	2.8	3	3.5
	Max	3	3.2	3.5	
4	Min	3.6	3.8	4	3
	Max	4	4.2	4.4	
5	Min	4.7	4.8	5	2.5
	Max	5.2	5.2	5.4	
10	Min	9.7	9.7	9.6	2
	Max	10.3	10.3	10.2	
15	Min	14.7	14.5	14.3	1
	Max	15.7	15.5	15.3	
20	Min	19.5	19	18.5	0.75
	Max	21	20.5	20.5	

TYPICAL MEASURED PERFORMANCE

The plots below show the typical performance when using the recommended pad layout and for $T_A = 25^\circ\text{C}$, $f_{RF} = 0\text{-}20\text{ GHz}$ and $Z_S = Z_L = 50\Omega$.

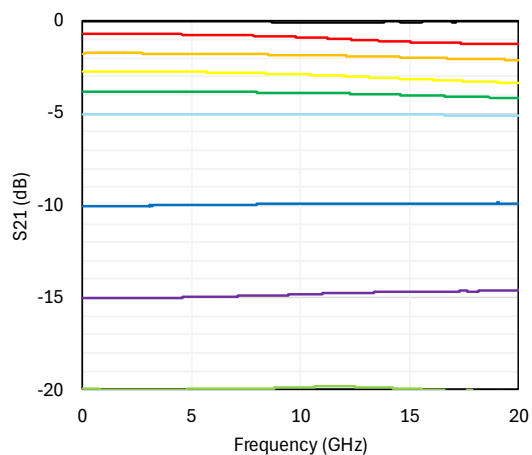


Figure 1 – Insertion Loss

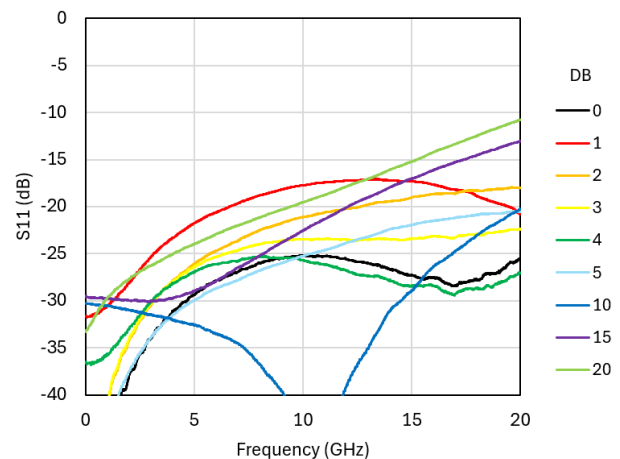


Figure 2 – Return Loss

OUTLINE DRAWING

Figure 3 shows the part outline drawing. Dimensions are in mils (0.001 inch).

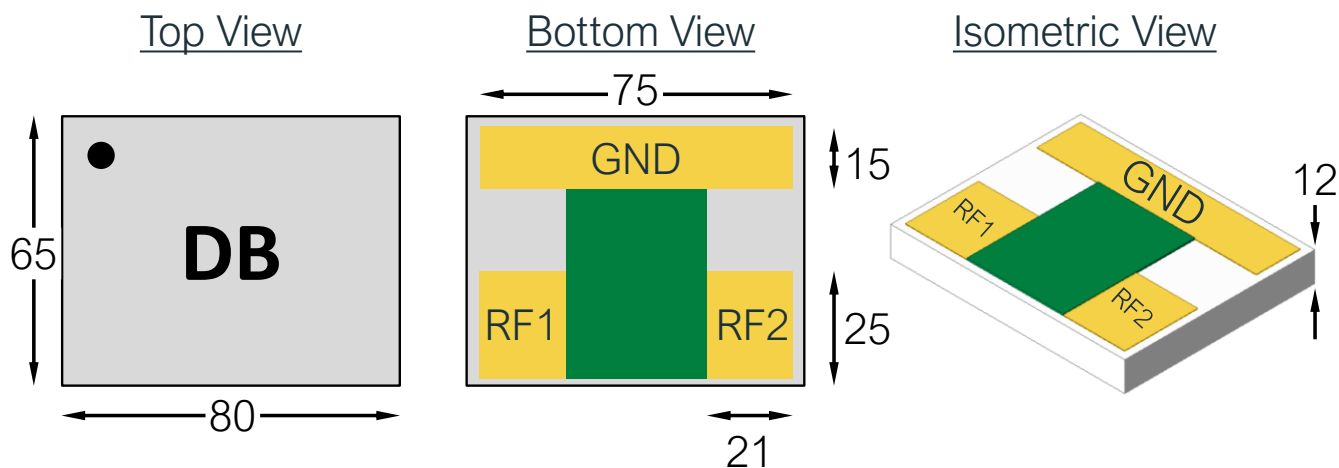


Figure 3 – Outline drawing

RECOMMENDED PAD LAYOUT

Figure 4 shows the recommended pad layout. Dimensions are in mils (0.001 inch).

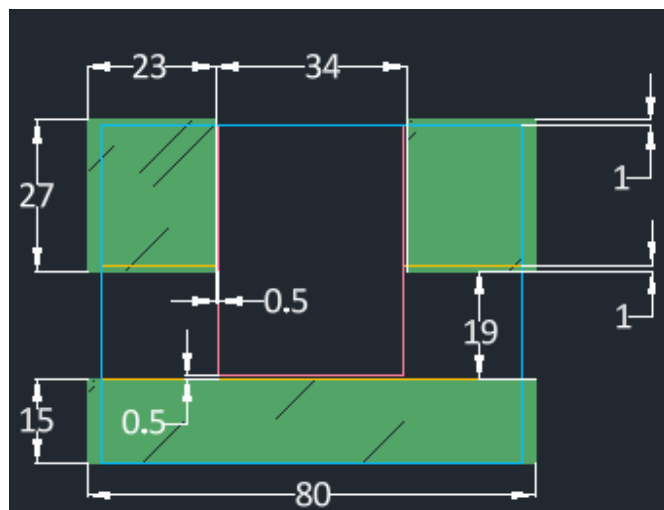


Figure 4 – Recommended PCB pad layout

REVISION HISTORY

Revision	Date	Description
1.0	8/15/2026	Initial Release

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