

General Description

MWA001 is a 6Bit attenuator designed and manufactured by GaAs pHEMT process. This digitally controlled attenuator is capable of 6bit, 0.5dB stepping and 31.5dB dynamic range amplitude control in the operating frequency range of DC-30GHz. At 30 GHz, the insertion loss is 4 dB, and the input and output standing waves are less than 12 dB over the entire operating frequency band.

Features

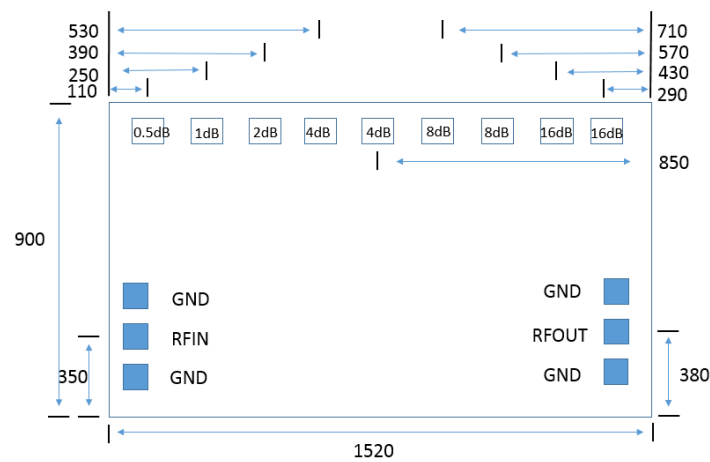
Insertion Loss: 4dB @ 30GHz

Attenuation Accuracy RMS: < 0.7dB

Input/Output Return Loss: < 12dB

Chip Size: 1.52 x 0.9 x 0.1 mm

Functional Diagram(Typical bond: 100x100, Unit: um)



(Die Thickness: 100 um)

Electrical Specifications, $T_A = +25^\circ\text{C}$,

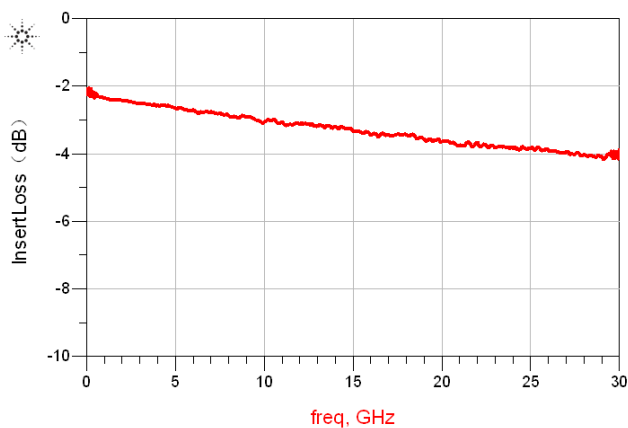
Parameter	Min	Typ	Max	Units
Bandwidth	DC		30	GHz
Insert Loss	2	3	4	dB
Input and Output Return Loss		-15	-12	dB
Attenuation Accuracy RMS		0.5	0.7	dB

Truth Table

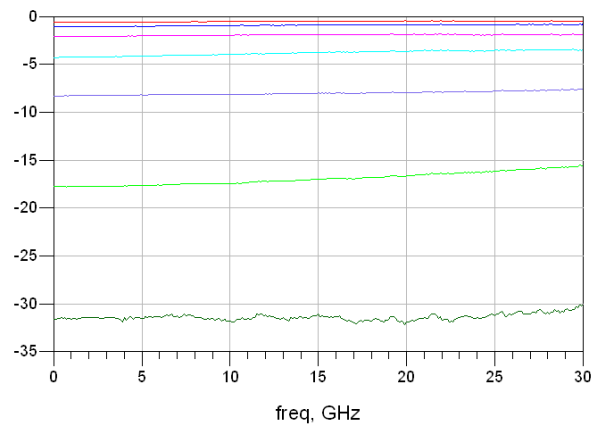
0.5dB	1dB	2dB	4dB		8dB		16dB		状态
VST_P5	VST_1	VST_2	VSE_4	VST_4	VSE_8	VST_8	VSE_16	VST_16	
-5	-5	-5	0	-5	0	-5	0	-5	参考
0	-5	-5	0	-5	0	-5	0	-5	0.5dB
-5	0	-5	0	-5	0	-5	0	-5	1dB
-5	-5	0	0	-5	0	-5	0	-5	2dB
-5	-5	-5	-5	0	0	-5	0	-5	4dB
-5	-5	-5	0	-5	-5	0	0	-5	8dB
-5	-5	-5	0	-5	0	-5	-5	0	16dB

Test Results

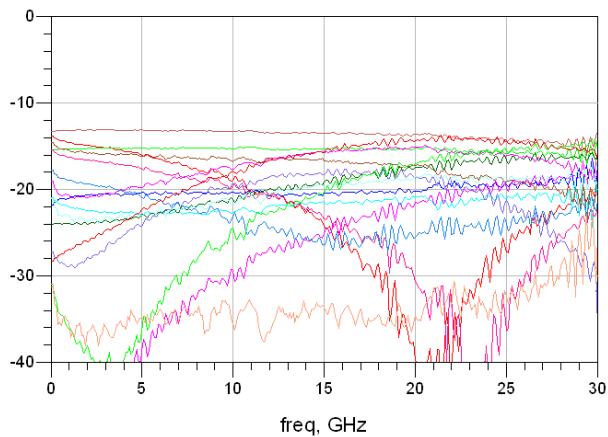
Insertion Loss



Potential attenuation



Input/Output Return Loss



RMS

