

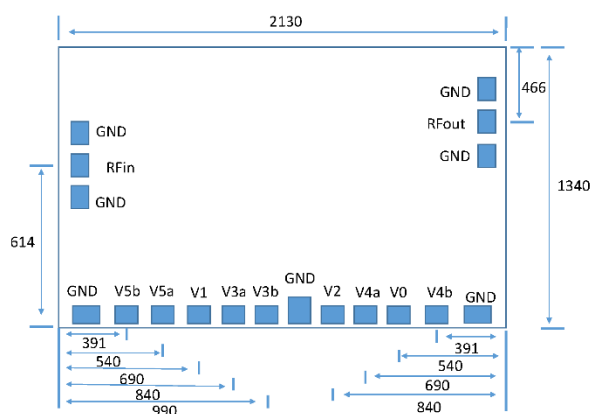
General Description

MWA004 is a 6Bit CNC 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 working frequency band 40-50GHz.

Features

- Insertion Loss: 7dB @ 45GHz
- RMS: 0.6dB
- Input/Output Return Loss: < -10dB
- Chip Size: 2130 x 1340 um

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



(Die Thickness: 100 um)

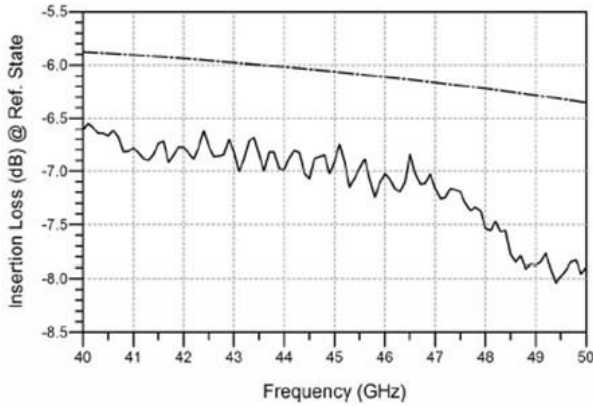
Electrical Specification , $T_A = +25^{\circ}\text{C}$,

Parameter	Min	Typ	Max	Units
Bandwidth	40		50	GHz
Insert Loss		7		dB
Input and Output Return Loss			-10	dB
Attenuation Accuracy RMS		0.6		dB

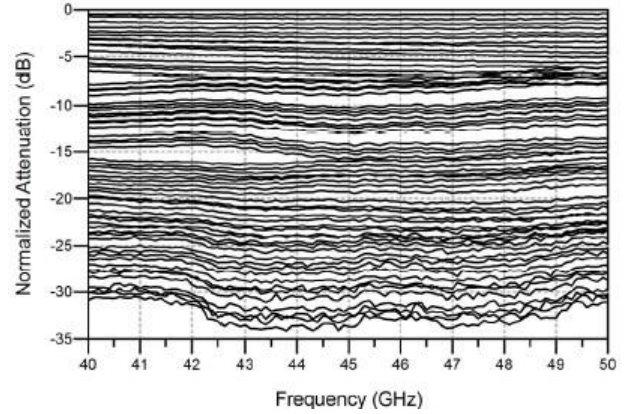


Test Results

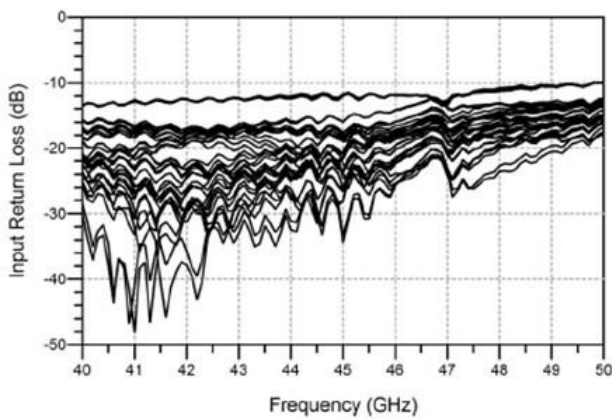
Insertion Loss



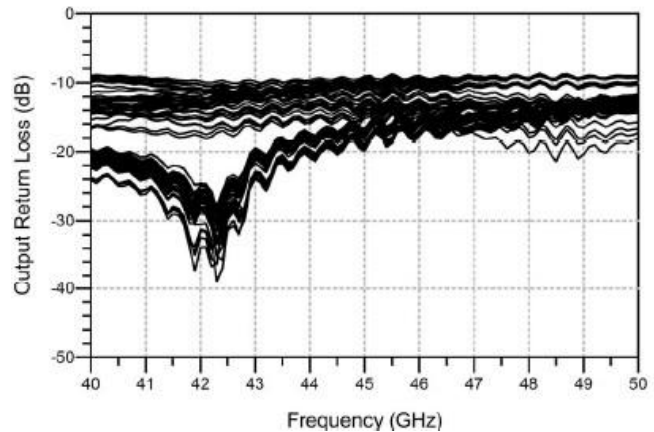
Normalized Attenuation



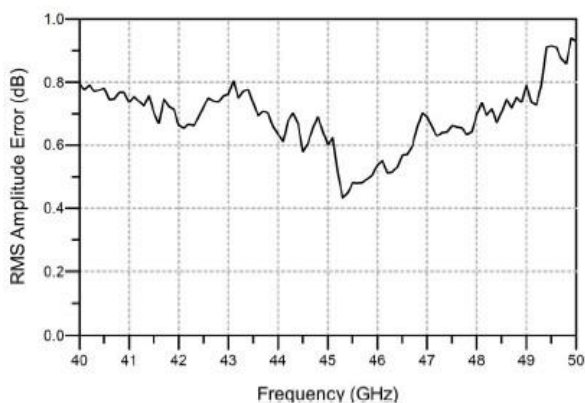
Input Return Loss



Output Return Loss



RMS



Truth Table

0.5dB	1dB	2dB	4dB		8dB		16dB		状态
V0	V1	V2	V3a	V3b	V4a	V4b	V5a	V5b	
-5	-5	-5	-5	0	-5	0	-5	0	参考
0	-5	-5	-5	0	-5	0	-5	0	0.5dB
-5	0	-5	-5	0	-5	0	-5	0	1dB
-5	-5	0	-5	0	-5	0	-5	0	2dB
-5	-5	-5	0	-5	-5	0	-5	0	4dB
-5	-5	-5	-5	0	0	-5	-5	0	8dB
-5	-5	-5	-5	0	-5	0	0	-5	16dB