Advanced Data Sheet
VFVA505-200
PIN Diode Voltage Variable Attenuator
3.0 – 4.0 GHz

Valpey Fisher Corporation
MICROWAVE PRODUCTS GROUP

Features

RoHS 6/6

- Easy to implement fully integrated solution
- 0 - 5V control range
- 25 dB min. attenuation
- 45 dBm IIP3
- Power handling: 0.5 watt
- Small 3.2 x 4.9 mm MCM Package

Applications

- 3.5 GHz WiMax & Fixed Wireless Access Base Stations
- Remote Radio Heads
- Tower Mounted Amplifiers
- General Purpose Attenuation

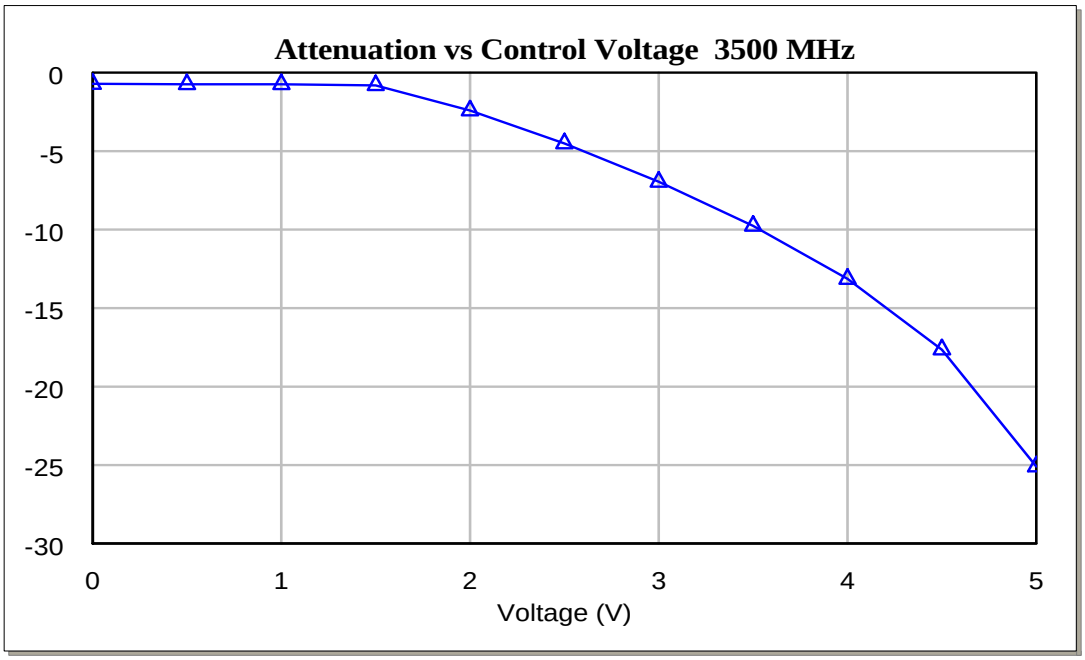
Description

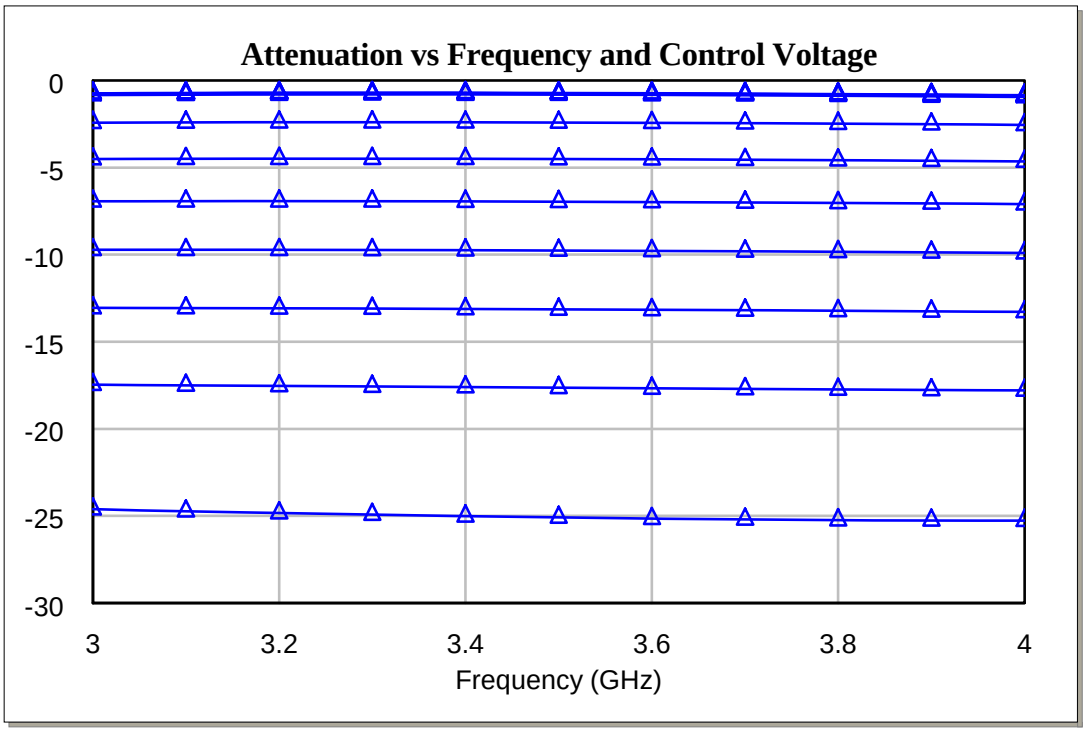
The **VFVA505-200** is a voltage controlled variable attenuator optimized and specified for 3.5 GHz WiMax and Fixed wireless access communication systems. The **VFVA505-200** offers very low distortion, flat attenuation versus frequency and exceptional VSWR over the specified band. The device also exhibits good performance over the broader frequency range specified below. The Silicon monolithic quadrature hybrid, two matched Silicon PIN diodes coupled with internal bias and decoupling structures provide an easy to use highly repeatable device. The device operates from 0 to 5 V with 1.5 mA typical current drain for maximum attenuation. The **VFVA505-200** takes advantage of high volume MCM surface mount packaging technology with the internal elements attached to a bismalemide triazine (BT) substrate.

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		3300		3800	MHz	
Control Voltage Range	V_{CC}		0		5	V	
Insertion Loss	I_L	V_{CC} = 0V		1.5		dB	
Attenuation		At F_O, V_{CC} = 4.5V At F_O, V_{CC} = 5V	19 25		21 --	dB	
VSWR				1.1	1.2	:1	
IIP3	IIP3	3300-3800MHz, V_{CC} 0 to 5V		45		dBm	
Broadband Frequency Range	F		3000		4000	MHz	
Insertion Loss	I_L	V_{CC} = 0V			2.0	dB	
Attenuation		V_{CC} = 5V	23			dB	
VSWR				1.5	2.0	:1	

Simulation Data





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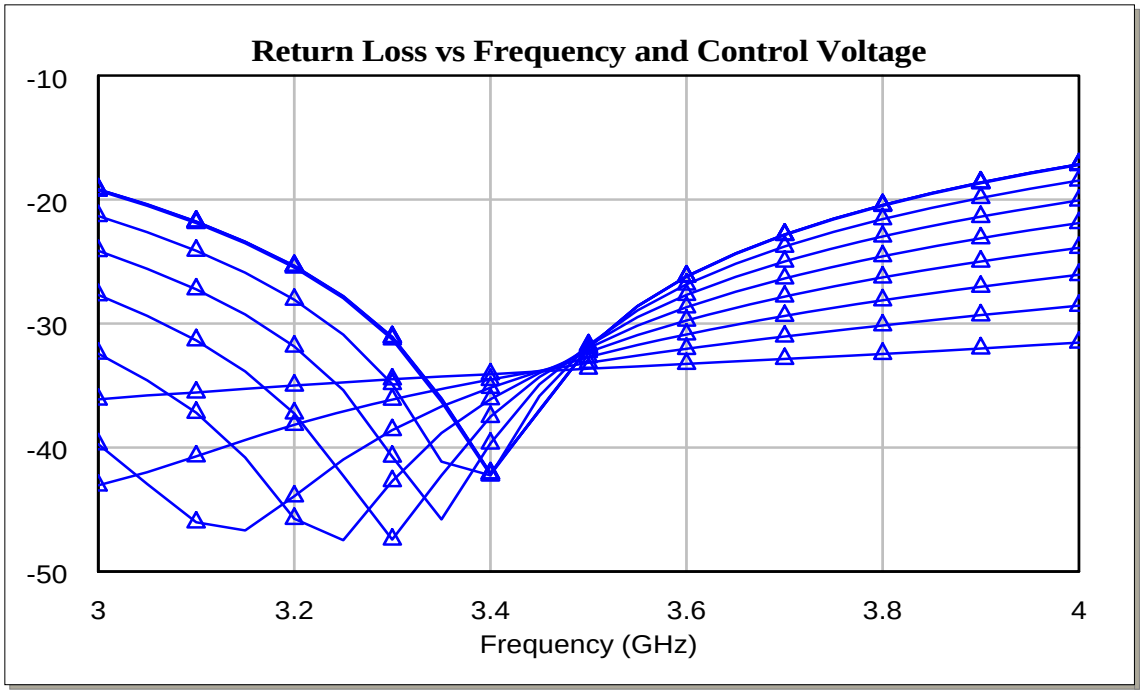
Simulation Data



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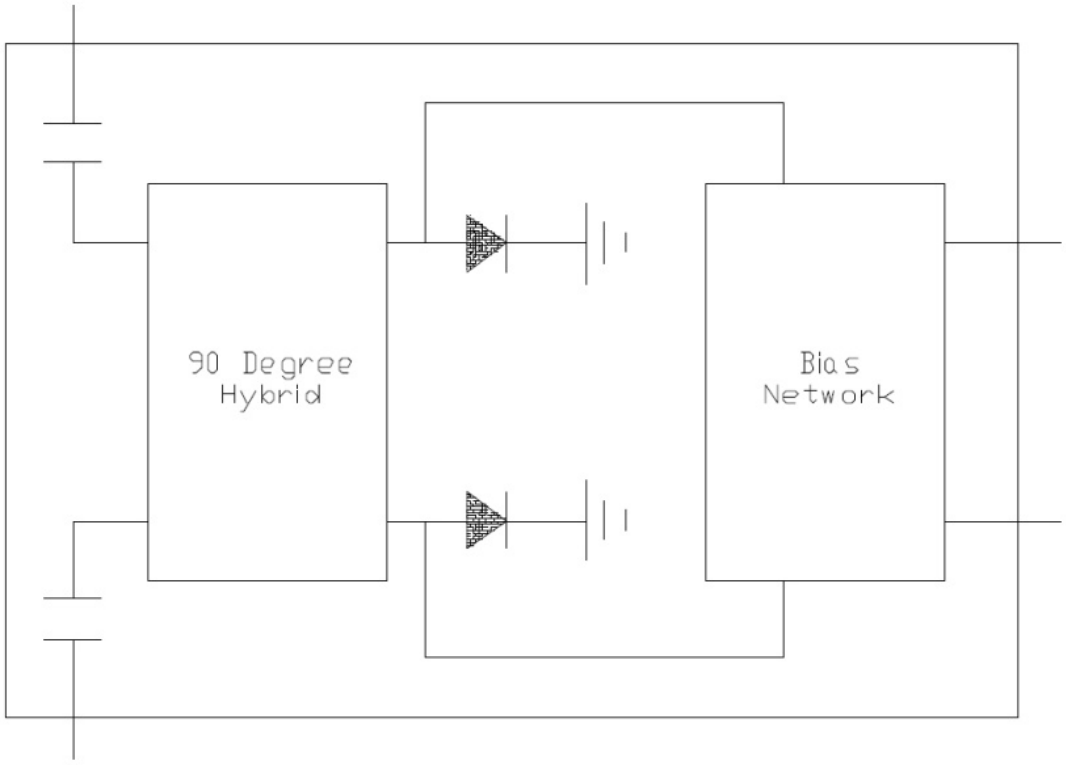
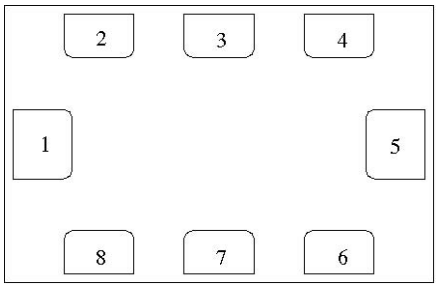
Block Diagram

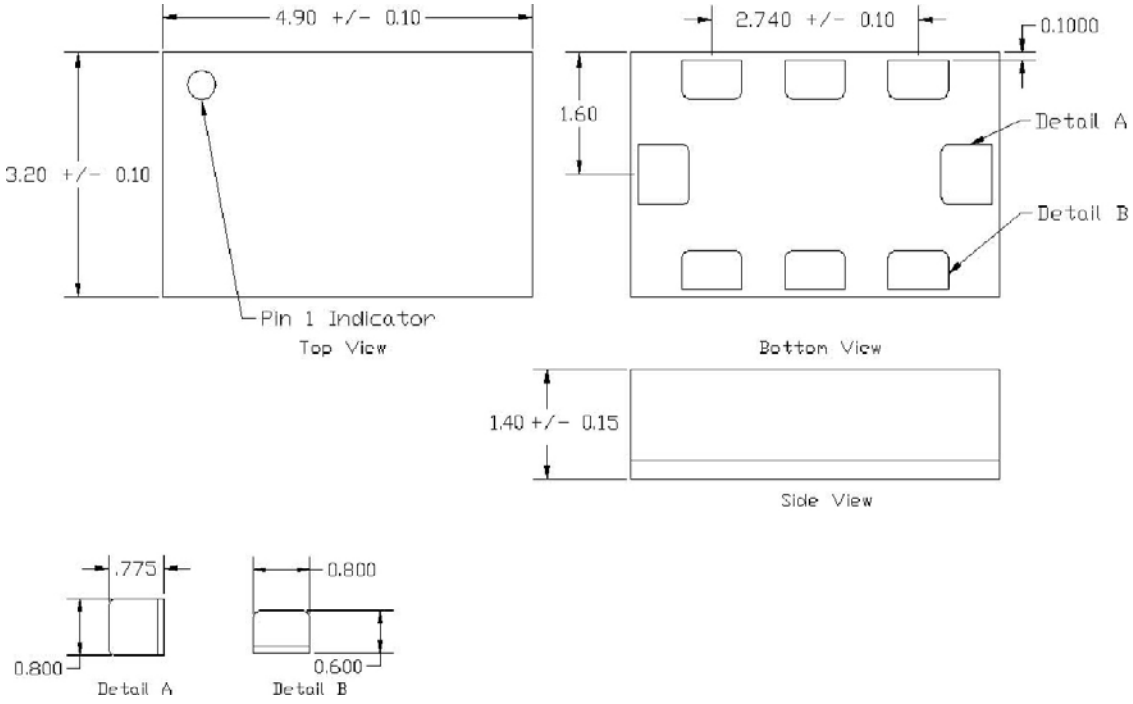


Pin Out (Bottom View)

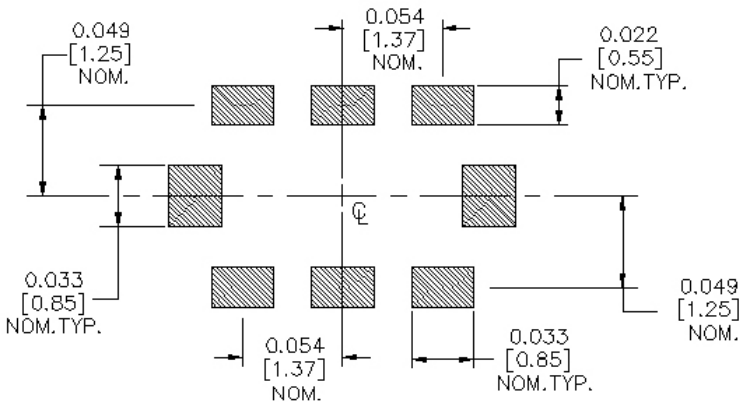


Pin #	Connection
1	GND
2	V_{CC}
3	GND
4	V_{CC}
5	GND
6	IN/OUT
7	GND
8	IN/OUT

Outline Drawing



Land Pattern



TOP VIEW
SUGGESTED PCB LAND PATTERN