MILLER MMIC

MMS109

V1.0.0

GaAs pHEMT MMIC SP4T
Absorptive Switch
DC-20 GHz

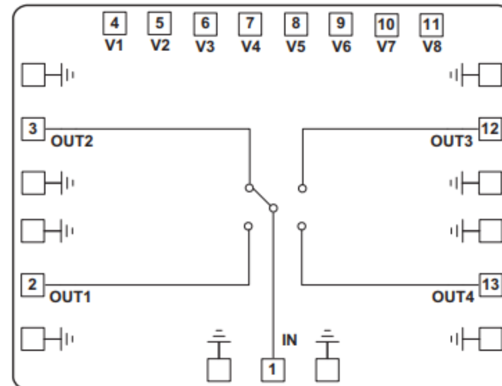
MMS109

ABSORPTIVE SWITCH- MMIC DC-20GHz

Features

- Isolation: >40dB @ 20GHz
- Insertion Loss: 2.8dB @ 20GHz
- Absorptive design:
- Die Size: 2x 1.5 x 0.1 mm

Functional Block Diagram



Typical Applications

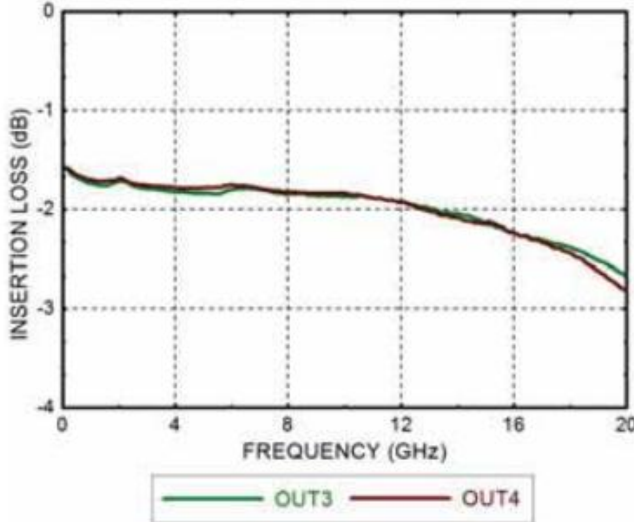
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

Electrical Specifications

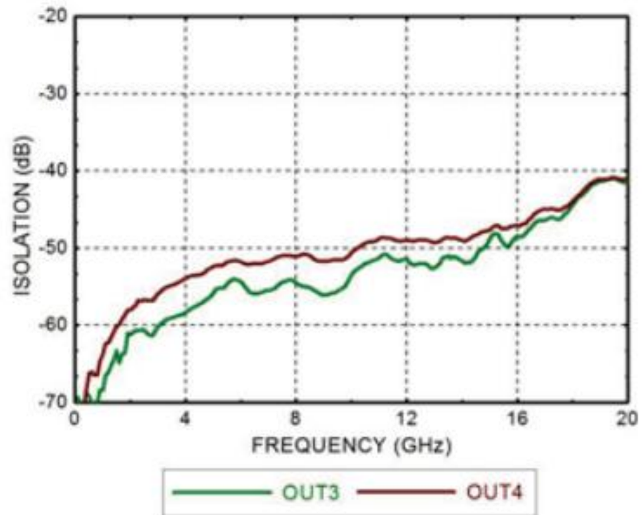
TA = +25°C, Vctl = 0/-5V

Parameters	Min.	Typ.	Max.	Units
Frequency	DC - 20			GHz
Insertion Loss		2.8		dB
Isolation		45		dB
Return Loss (ON State)		16		dB
Return Loss (OFF State)		15		dB
Input 1dB Compression (P1dB)		25		dBm
Switching Speed		15		ns

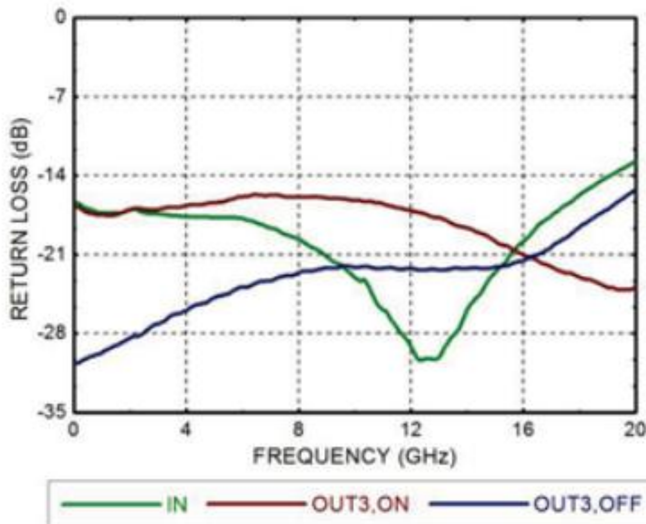
Insertion Loss



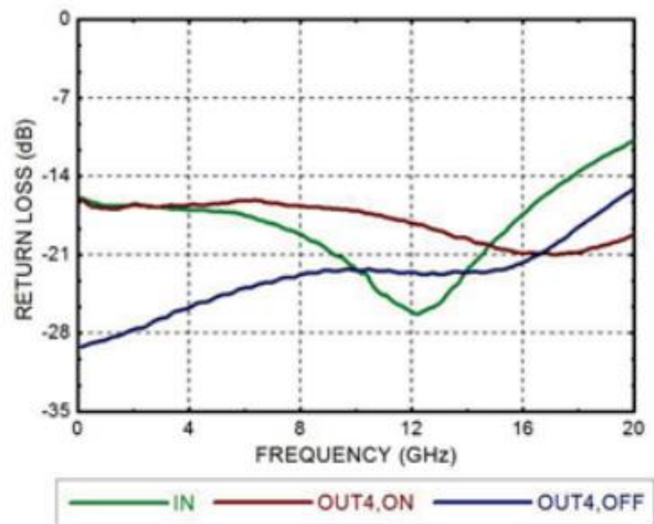
Isolation



OUT3 Return Loss

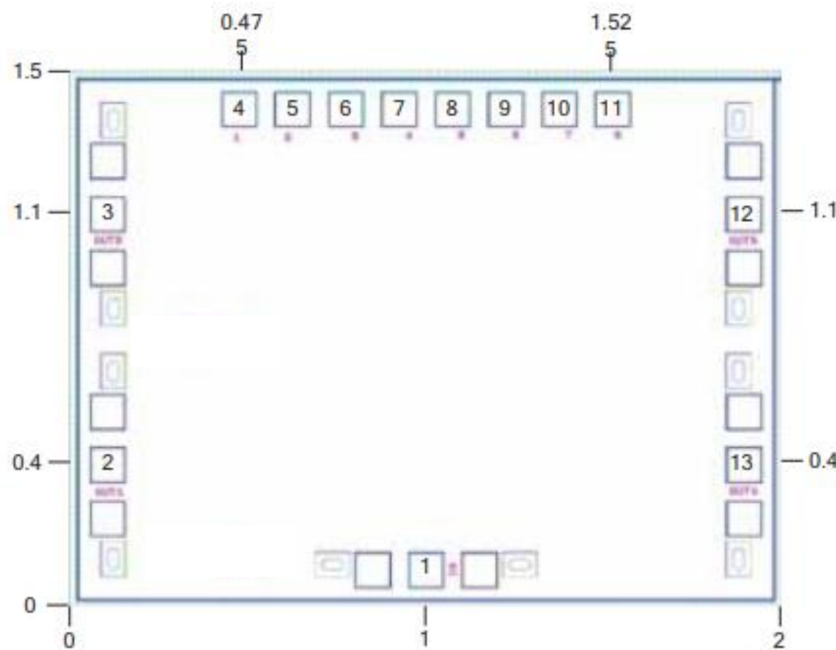


OUT4 Return Loss



Outline Drawing:

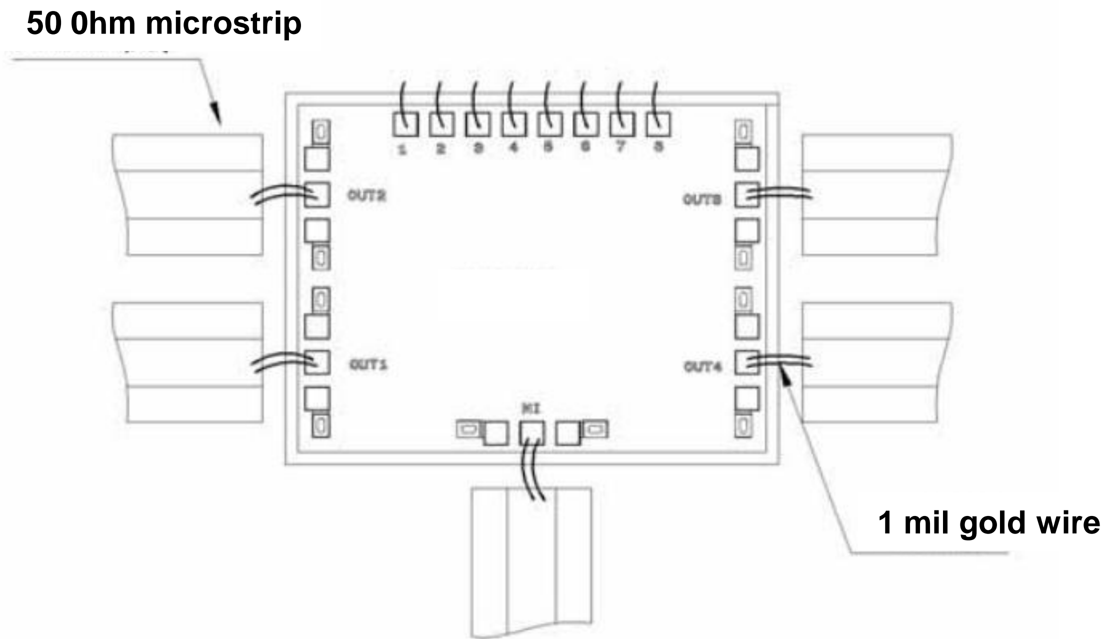
All Dimensions in mm



Pad Description

PAD	Function	Description
1	IN	The pad is DC coupled to 50 ohms . If the RF level is not 0V, then the blocking capacitor is required externally.
2,3,12,13	OUT1，OUT2 OUT3，OUT4	The pad is DC coupled to 50 ohms . If the RF level is not 0V, then the blocking capacitor is required externally.
4-11	V1-V8	When V1/V4/V6/V8=-5V,V2/V3/V5/V7=0V,The OUT1 is “ON” state; When V2/V3/V6/V8=-5V,V1/V4/V5/V7=0V, The OUT2 is “ON” state; When V2/V4/V5/V8=-5V,V1/V3/V6/V7=0V, The OUT3 is “ON” state; When V2/V4/V6/V7=-5V,V1/V3/V5/V8=0V, The OUT4 is “ON” state
Die Bottom	GND	Die bottom must be connected to RF/DC ground

Assembly Drawing



Notes:
1. Die thickness: 100um
2. Typical bond pad is 100*100 μm^2
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Maximum Ratings:
1. RF input power: +27dBm
2. Storage temperature: -65℃ to +175℃
3. Operating temperature: -55℃ to +85℃