MILLER MMIC

MMS117

V1.0.0

GaAs MMIC Absorptive Single-Pole Single-Throw Switch DC-18GHz

Features

- Frequency: DC-18GHz
- Insertion Loss: 1.5dB
- Isolation: 50dB
- Input/Output SWR at On State: 1.15
- Input/Output SWR at Off State: 1.4
- Input/Output: 50Ω
- Die Size: 1.6 x 0.8 x 0.1 mm

Typical Applications

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

Electrical Specifications

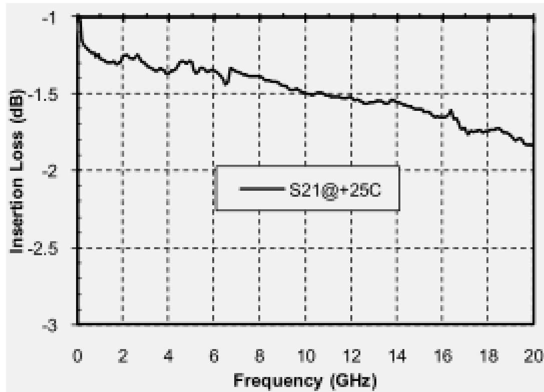
TA = +25°C

Parameters	Min.	Typ.	Max.	Units
Frequency	DC-18			GHz
Insertion Loss	-	1.5	1.8	dB
Isolation	42	50	-	dB
Input/Output Return Loss at On State (ON)	-	23/23	-	dB
Input/Output Return Loss at Off State (OFF)	-	20/20	-	dB
Output 1dB Compression (P1dB)	-	26	-	dBm
Switching Speed		10		ns

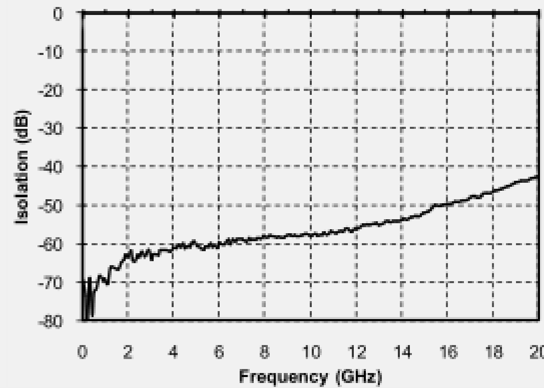
MMS117

Absorptive Single-Pole Single-Throw Switch- MMIC DC-18GHz

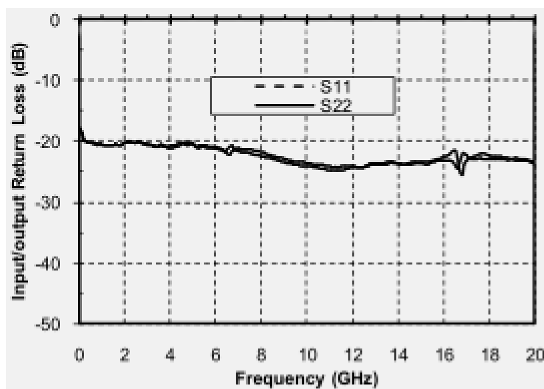
Insertion Loss vs. Operating Frequency



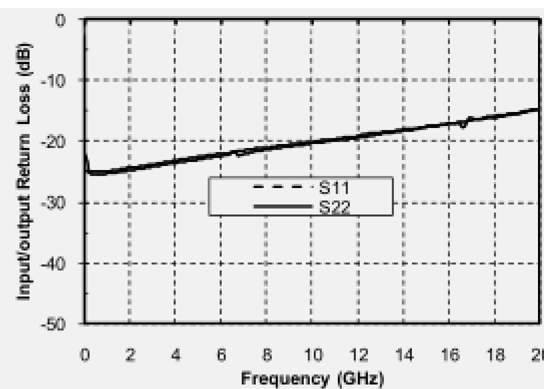
Isolation vs. Operating Frerquency



Return Loss vs. Operating Frequency (ON)

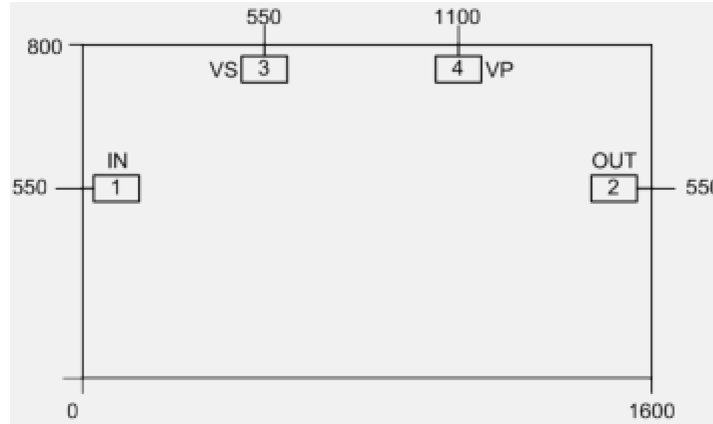


Return Loss vs. Operating Frequency (OFF)



Outline Drawing:

All Dimensions in µm



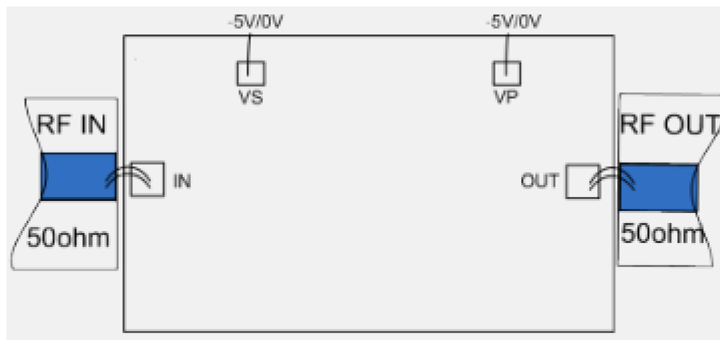
Pad Description

Pad	Function	Description
1	RF IN	Signal input terminal, connected to 50Ω circuit; blocking capacitor not integrated internally.
2	RF OUT	Signal output terminal, connected to 50Ω circuit; blocking capacitor not integrated internally
3, 4	Voltage Control	On/Off control.
Die bottom	GND	Die bottom must be connected to RF/DC ground.

Truth Table

VS	VP	IN-OUT
0V	-5V	ON
-5V	0V	OFF

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. Control voltage: -8V-+0.5V
2. Maximum input power: +30dBm
3. Operating temperature: -55℃ to +85℃
4. Storage temperature: -65℃ to +150℃