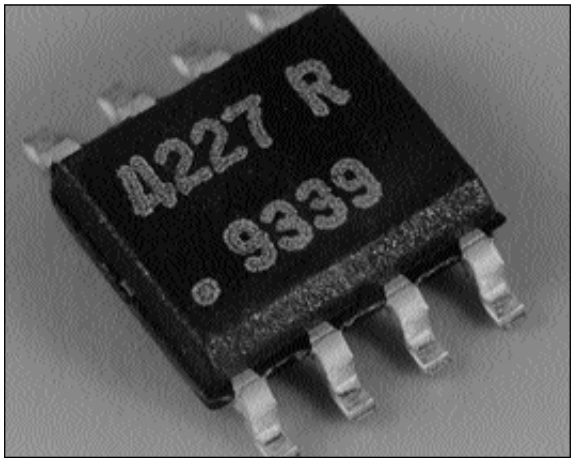
GaAs MMIC SPDT Reflective Switch, DC - 3GHz



Features

· Broadband performance
· High Isolation; 40dB typ at 1GHz
· Ultra low DC power consumption
· Fast switching speed; 3ns typical
· SO8 surface mount plastic package

Description

The P35-4227-3R is a high performance Gallium Arsenide single pole double throw broadband RF switch. It is suitable for use in broadband communications and instrumentation applications. A short circuit reflective termination is presented at the isolated output of the switch. The switch is controlled by the application of complimentary 0V/-5V or 0/-8V signals to the control lines in accordance with the truth table below.

This die is fabricated using MOC's 0.5µm gate length MESFET process (S20) and is fully protected using Silicon Nitride passivation for excellent performance and reliability. This device is packaged in a low-cost SO8 surface mount plastic package.

Electrical Performance

Ambient temperature = 22±3°C , Z_O = 50Ω, Control voltages = 0V/-5V unless otherwise stated

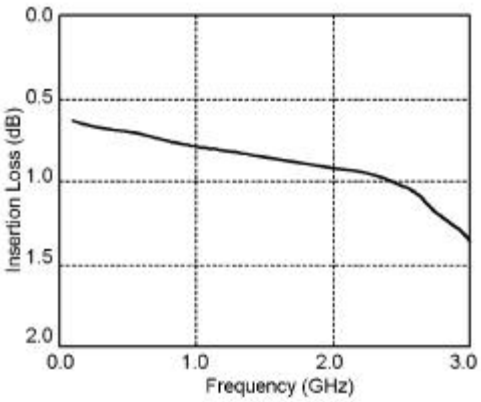
Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	DC - 1GHz	-	1.0	1.2	dB
	1 - 3GHz	-	1.4	1.5	dB
Isolation	DC - 1GHz	38	40	-	dB
	1 - 3GHz	22	23	-	dB
Input Return Loss[1]	DC - 1GHz	20	25	-	dB
	1 - 3GHz	12	16	-	dB
Output Return Loss[1]	DC - 1GHz	20	26	-	dB
	1 - 3GHz	12	17	-	dB
1dB power compression point[2]	0/-5V Control; 50MHz	-	20	-	dBm
	0/-5V Control; 2GHz		27	-	dBm
	0/-8V Control; 50MHz	-	22	-	dBm
	0/-8V Control; 2GHz	-	30	-	dBm
Switching Speed	50% Control to 10%90%RF	-	3	8	ns

Notes

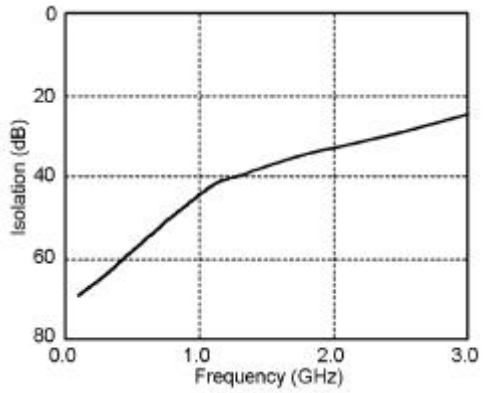
1. Return Loss measured in low loss switch state.
2. Input power at which insertion loss compresses by 1dB.

Typical Performance at 22°C

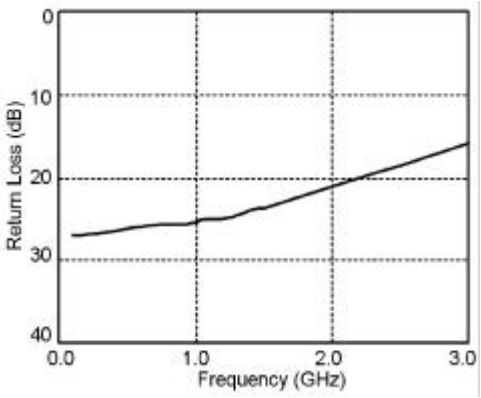
Insertion Loss



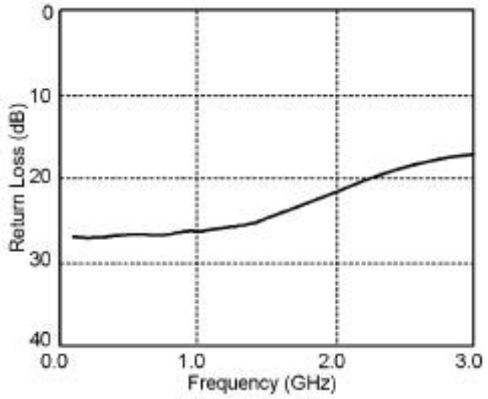
Isolation



Input Return Loss



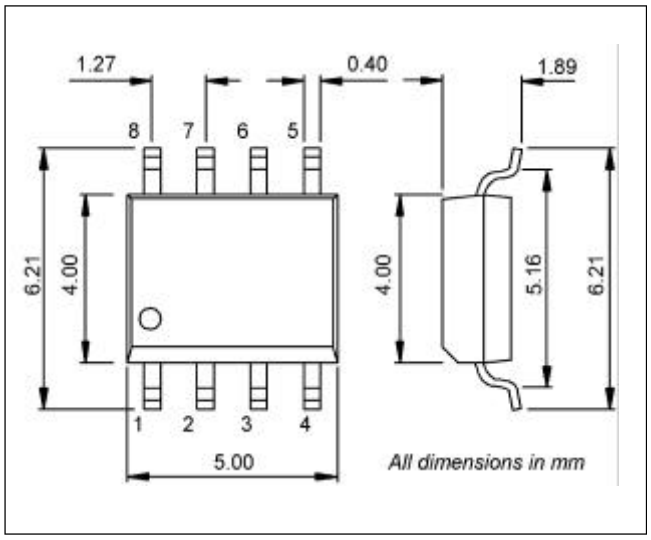
Output Return Loss



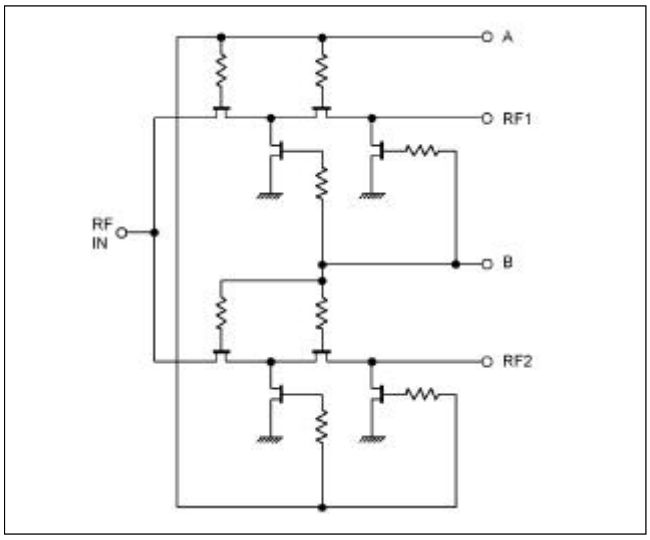
Absolute Maximum Ratings

Max control voltage	-8V
Max I/P power	+30 dBm
Operating temperature	-40°C to +85°C
Storage temperature	-65°C to +150°C

Package Outline



Electrical Schematic



Pin Details

Pin	Function
1	RF IN
2	Ground
3	RF2
4	Control B
5	Control A
6	RF1
7	Ground
8	Ground

Switching Truth Table

A	B	RF IN-RF1	RF IN-RF 2
0V	-5V	Low Loss	Isolated
-5V	0V	Isolated	Low Loss

Ordering Information: P35-4227-3R

463/SM/00058/200 Iss 1/2

The data and product specifications are subject to change without notice. These devices should not be used for device qualification and production without prior notice.

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