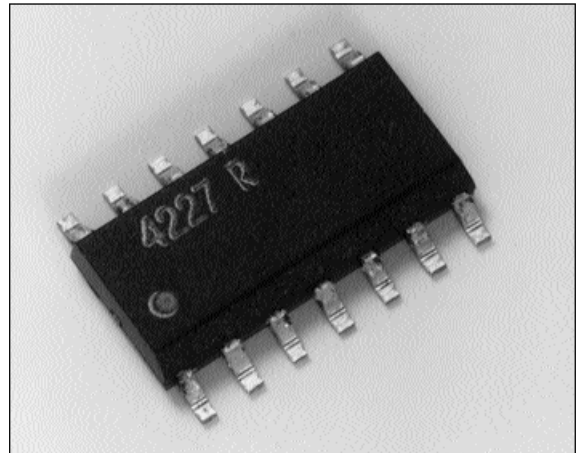


# GaAs MMIC SPDT Reflective Switch, DC - 3GHz

## Features

- Broadband performance
- High Isolation; 50dB typ at 1GHz
- Ultra low DC power consumption
- Fast switching speed; 3ns typical
- SO14 surface mount plastic package
- 4 line control permits 'all-off' state



## Description

The P35-4227-5T 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. There is a choice of two line or four line control. Four line control allows the use of an 'all-off' state.

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 SO14 surface mount plastic package.

## Electrical Performance

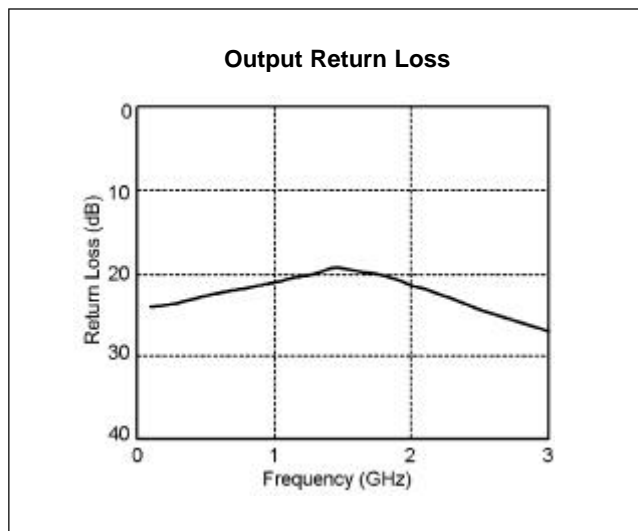
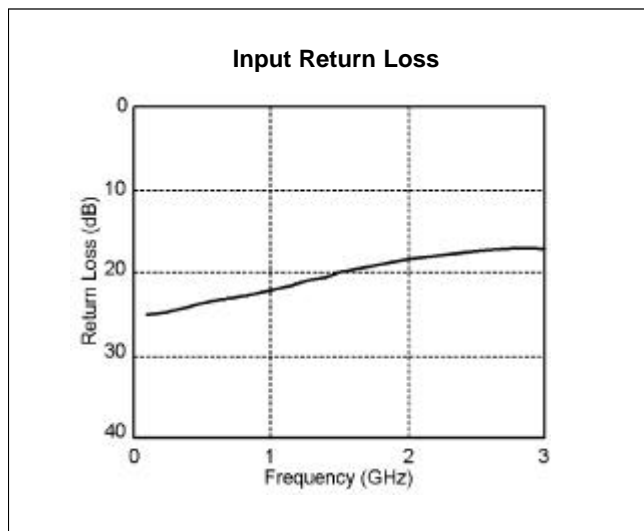
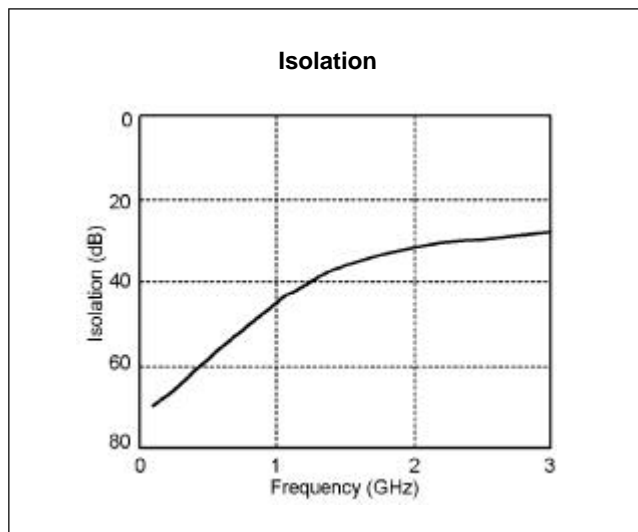
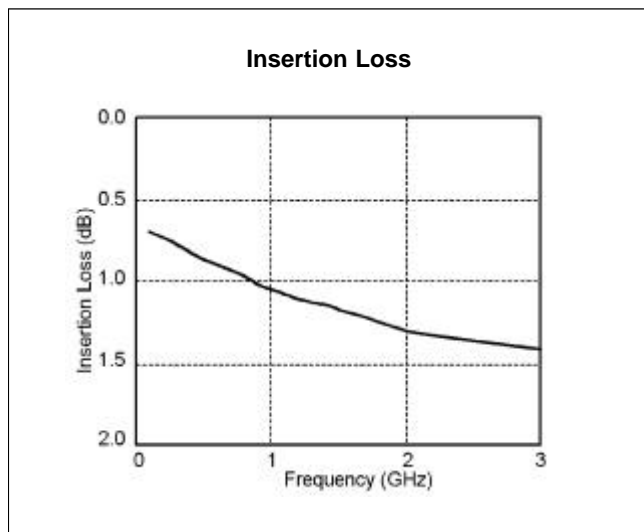
Ambient temperature = 22±3°C ,  $Z_O = 50\Omega$ , Control voltages = 0V/-5V unless otherwise stated

Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	DC - 1GHz	-	1.1	1.2	dB
	1 - 3GHz	-	1.4	1.5	dB
Isolation	DC - 1GHz	38	45	-	dB
	1 - 3GHz	20	35	-	dB
Input Return Loss <sup>1</sup>	DC - 1GHz	20	22	-	dB
	1 - 3GHz	12	14	-	dB
Output Return Loss <sup>1</sup>	DC - 1GHz	20	22	-	dB
	1 - 3GHz	12	14	-	dB
1dB power compression point <sup>2</sup>	0/-5V Control; 50MHz	-	21	-	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.

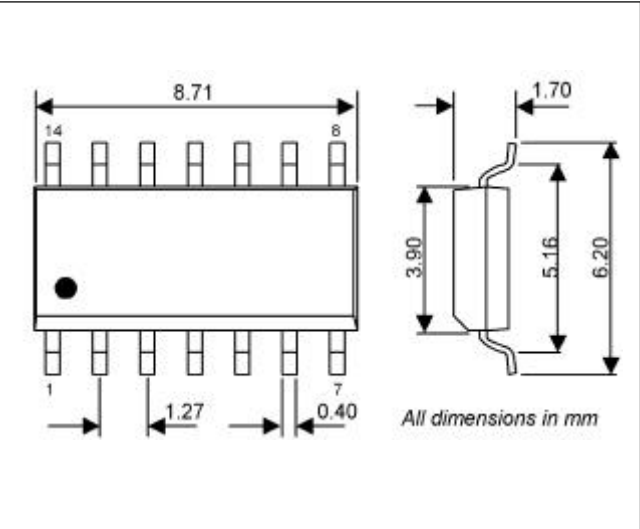
## Typical Performance at 22°C



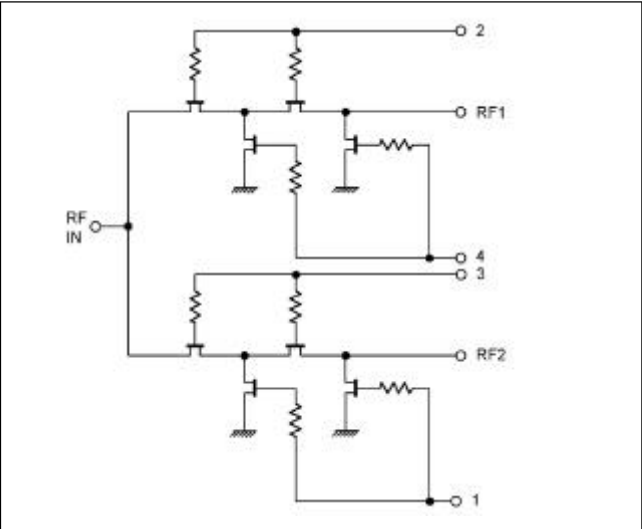
## Absolute Maximum Ratings

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	Ground
4	RF2
5	Ground
6	Control 4
7	Control 3
8	Control 2
9	Control 1
10	Ground
11	RF1
12	Ground
13	Ground
14	Ground

Switching Truth Table

Control Line				Signal Path	
1	2	3	4	RFIN-RF1	RFIN-RF2
0V	0V	-5V	-5V	Low loss	Isolated
-5V	-5V	0V	0V	Isolated	Low loss
0V	-5V	-5V	0V	Isolated	Isolated

**Ordering Information: P35-4227-5R**

463/SM/00055/200 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.



© Marconi Optical Components Ltd 2001

[www.moc.marconi.com](http://www.moc.marconi.com)

MOC, Caswell, Towcester, Northants, NN12 8EQ, Tel: +44 1327 356468 Fax +44 1327 356698