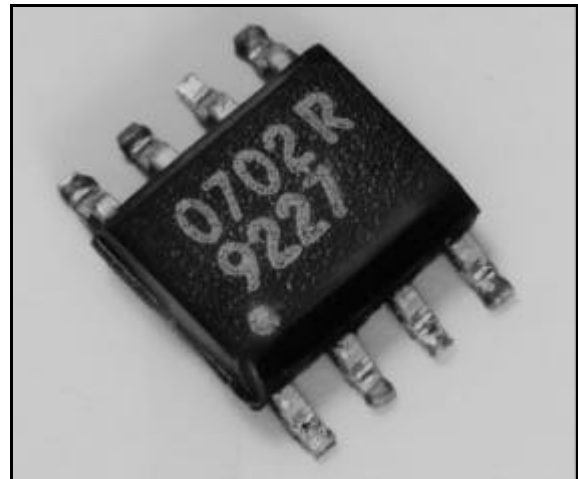


GaAs MMIC SPDT REFLECTIVE SWITCH, DC - 2GHz

Features

- Broadband performance
- Low insertion loss; 0.5dB typ at 1GHz
- Ultra low DC power consumption
- Fast switching speed; 3ns typical
- SO8 surface mount package



Description

The P35-0702R is a high performance Gallium Arsenide monolithic single pole double throw RF switch suitable for use in broadband communications and instrumentation applications. A short circuit termination is presented at the isolated output of the switch. Control is effected by the application of complimentary 0V and -5V levels to the control lines in accordance with the truth table below.

The die is fabricated using MCL's 0.5 μ m gate length MESFET process (S20) and is fully protected using Silicon Nitride passivation for excellent performance and reliability.

Electrical Performance

Ambient temperature = 22 $\pm$ 3°C , Z₀ = 50 Ω , Control voltages = 0V / -5V unless otherwise stated

Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	DC - 0.5GHz	-	0.4	0.6	dB
	0.5GHz - 2GHz	-	0.6	0.8	dB
Isolation	DC - 0.5GHz	42	45	-	dB
	0.5GHz - 2GHz	20	22	-	dB
Input Return Loss ¹	DC - 0.5GHz	25	30	-	dB
	0.5GHz - 2GHz	20	25	-	dB
Output Return Loss ¹	DC - 0.5GHz	25	30	-	dB
	0.5GHz - 2GHz	20	25	-	dB
1dB power compression point ²	0/-5V Control; 50MHz	19	20	-	dBm
	0/-5V Control; 2GHz	22	23	-	dBm
	0/-8V Control; 50MHz	24	25	-	dBm
	0/-8V Control; 2GHz	30	31	-	dBm
Switching Speed	50% Control to 10%/90%RF	-	3	-	ns
Third Order Intercept ³	500MHz	-	46	-	dBm

Notes

1. Return Loss measured in low loss switch state
2. Input power at which insertion loss compresses by 1dB
3. Input power 10dBm / tone

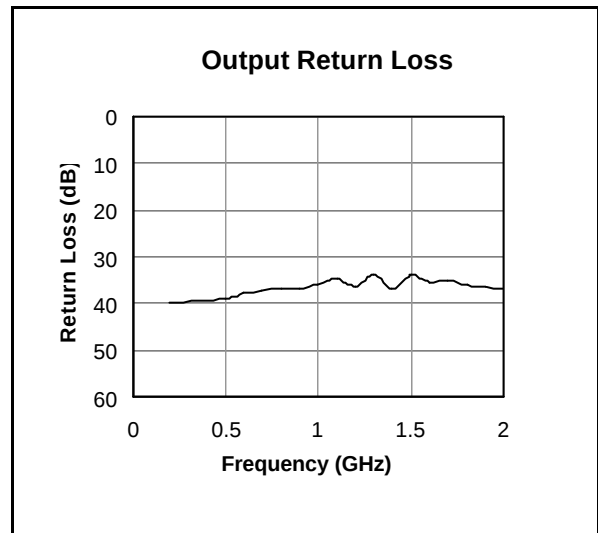
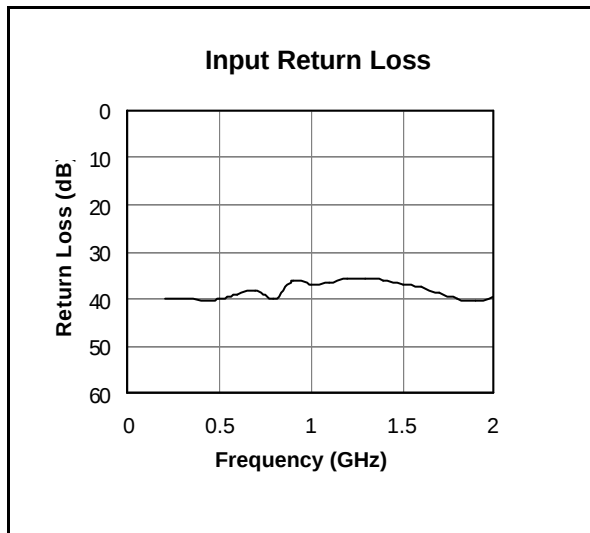
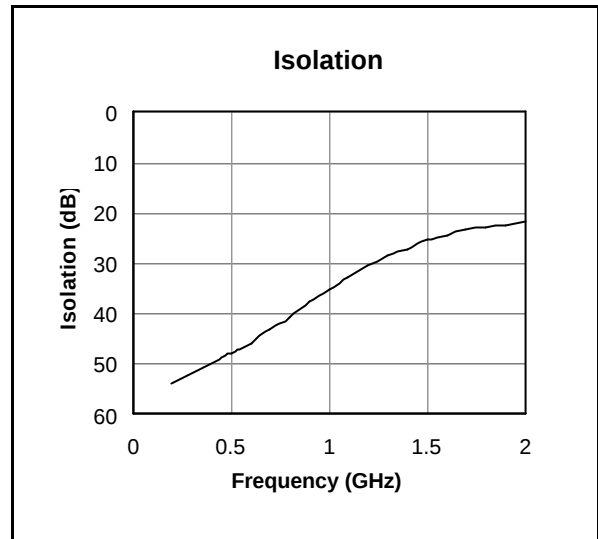
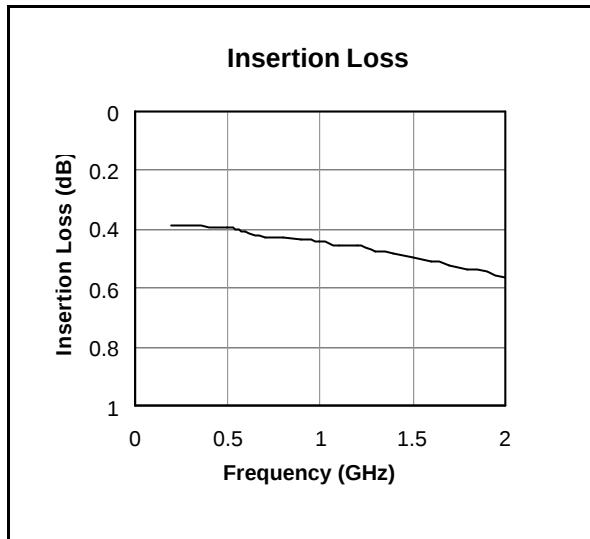
Marconi Caswell Limited, Caswell, Towcester, Northamptonshire, NN12 8EQ

Telephone: + 44 (0) 1327 350581 Fax: + 44 (0) 1327 356775 Website: www.caswelltechnology.com

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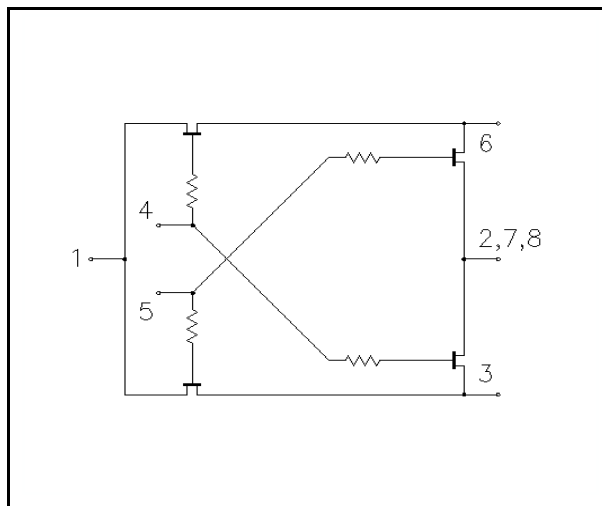
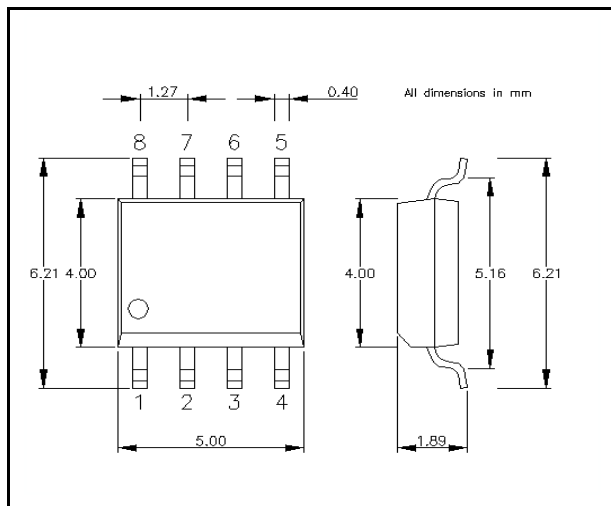
Typical Performance at 22° C



Absolute Maximum Ratings

Max control voltage	-8V
Max I/P power	+33 dBm
Operating temperature	-40°C to +85°C
Storage temperature	-65°C to +150°C

Electrical Schematic



Switching Truth Table

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

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

P35-0702R

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