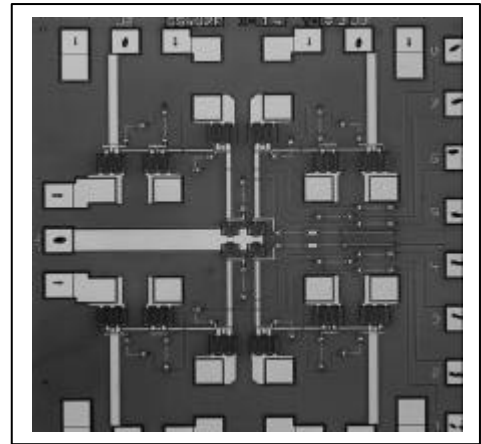


GaAs MMIC SP4T REFLECTIVE SWITCH, DC - 20GHz

Features

- Ultra Broadband
- Low insertion loss 3.0dB typ at 18GHz
- Fast switching speed
- High isolation 38dB at 18GHz
- Through GaAs Vias for improved performance



Description

The P35-4234-000-200 is a high performance broadband Gallium Arsenide monolithic single pole four throw RF switch. It is suitable for use in broadband communications, instrumentation and electronic warfare applications. 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 = $22 \pm 3^\circ \text{C}$, $Z_0 = 50 \Omega$, Control Voltage = 0V / -5V

Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	DC10 - GHz	-	2.2	2.5	dB
	18GHz - 10GHz	-	3.0	3.4	dB
	18GHz - 20GHz	-	3.2	3.6	dB
Isolation	DC10 - GHz	36	44	-	dB
	18GHz - 10GHz	30	38	-	dB
	18GHz - 20GHz	29	38	-	dB
Input Return Loss	DC - 20GHz	12	14	-	dB
Output Return Loss	DC - 20GHz	10	14	-	dB
Input Power at 1dB compression		18	22	-	dBm
Control Voltage		-	0V / -5V	0V / -8V	Volts
Switching Speed	50% control to 10/90% RF	-	5	10	ns

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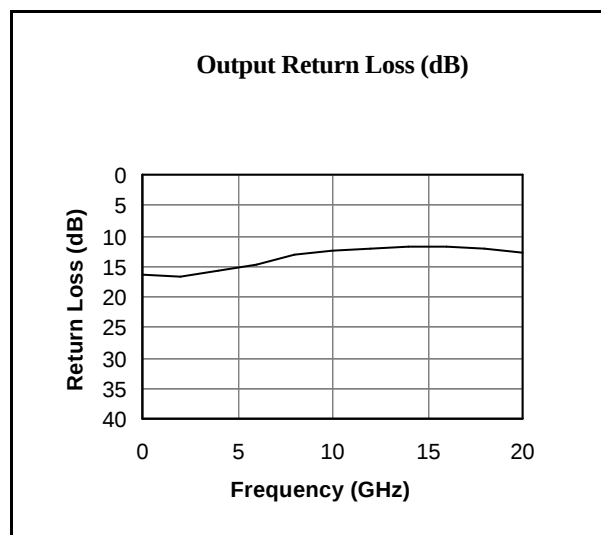
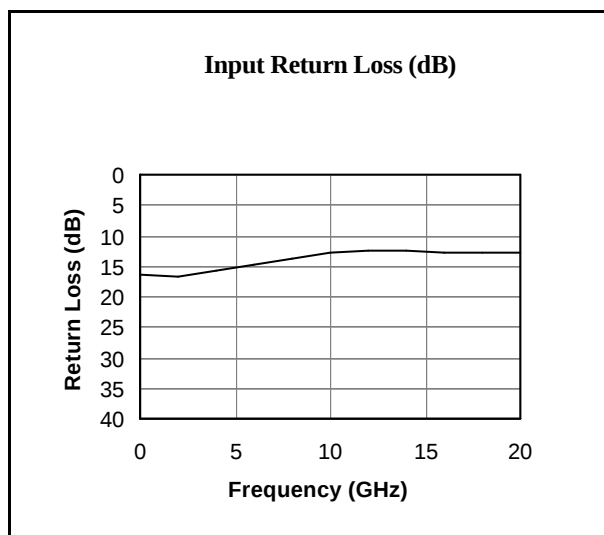
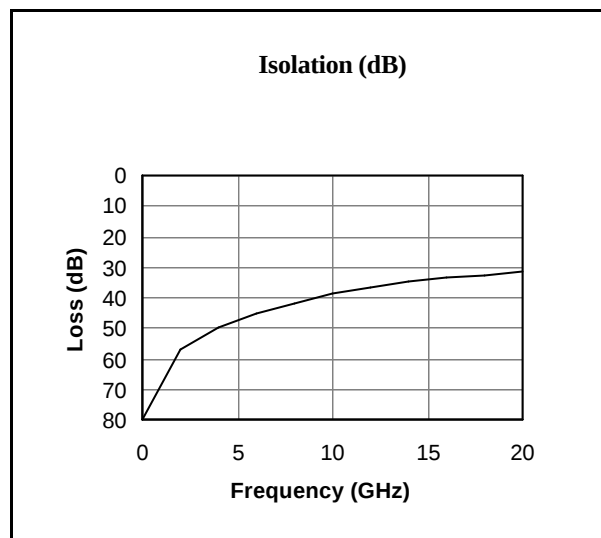
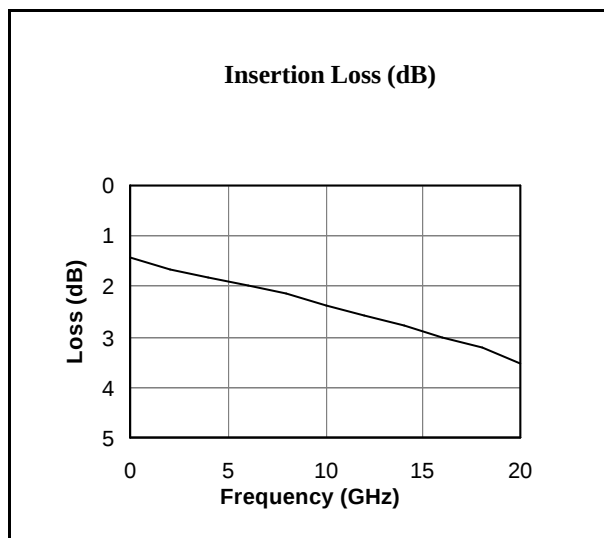
Telephone: + 44 (0) 1327 350581 Fax: + 44 (0) 1327 356775 Website: www.caswelltechnology.com

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Typical Performance at 22° C



Absolute Maximum Ratings

Max control voltage	-8V
Max I / P power	+25 dBm
Operating temperature	-55°C to +125°C
Storage temperature	-55°C to +150°C

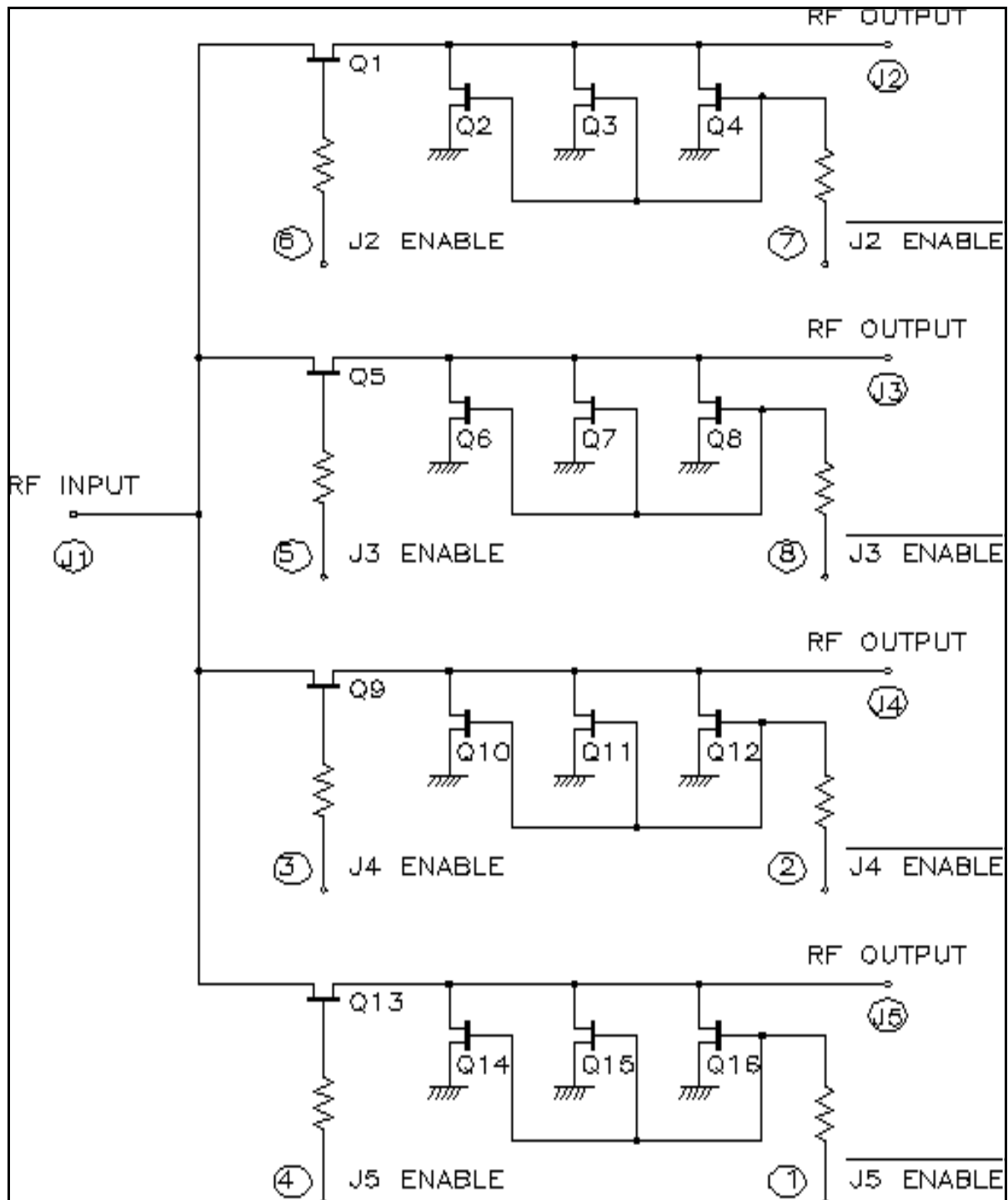
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Electrical Schematic



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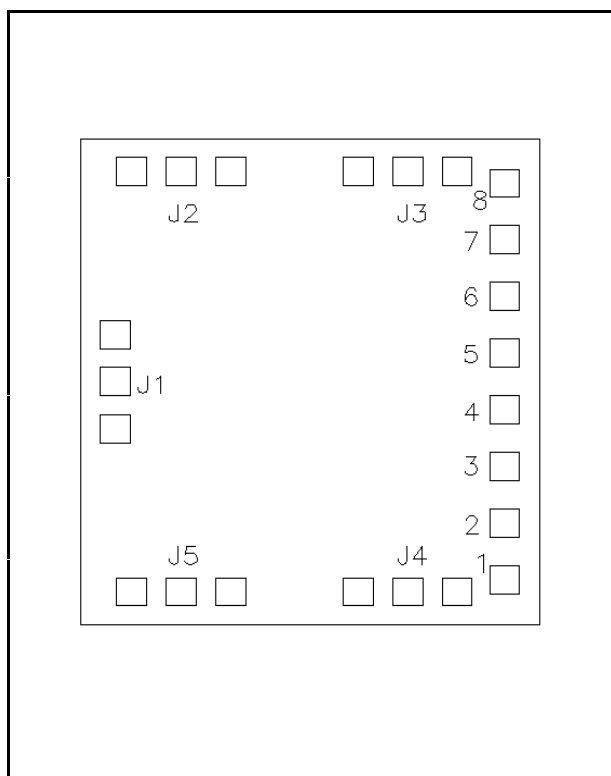
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Truth Table

Control Line								State			
1	2	3	4	5	6	7	8	J1/J2	J1/J3	J1/J4	J1/J5
0V	0V	-5V	-5V	-5V	0V	-5V	0V	Low Loss	Isolation	Isolation	Isolation
0V	0V	-5V	-5V	0V	-5V	0V	-5V	Isolation	Low Loss	Isolation	Isolation
0V	-5V	0V	-5V	-5V	-5V	0V	0V	Isolation	Isolation	Low Loss	Isolation
-5V	0V	-5V	0V	-5V	-5V	0V	0V	Isolation	Isolation	Isolation	Low Loss
0V	0V	-5V	-5V	-5V	-5V	0V	0V	Isolation	Isolation	Isolation	Isolation

Chip Outline



Pad Details

Pad	Function
J1	RF Input
J2	RF Output
J3	RF Output
J4	RF Output
J5	RF Output
1	Isolate J1-J5
2	Isolate J1-J4
3	Enable J1-J4
4	Enable J1-J5
5	Enable J1-J3
6	Enable J1-J2
7	Isolate J1-J2
8	Isolate J1-J3

Chip size: 1.91 x 2.11mm

Bond pad size: 120µm square

Chip thickness: 210µm

Ordering Information

P35-4234-000-200

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