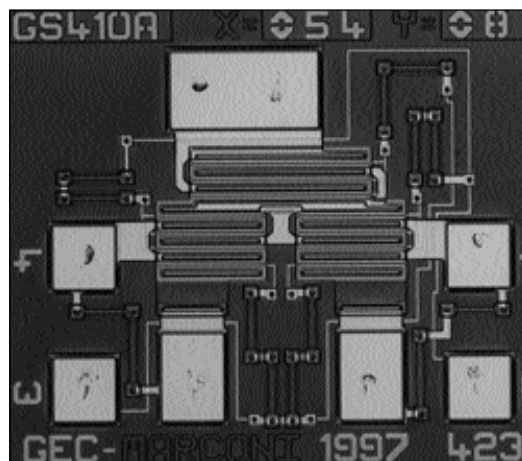


GaAs MMIC SPST Terminated Switch, DC - 4GHz

Features

- Broadband performance
- Low insertion loss; 1.6dB typ at 2GHz
- Ultra low DC power consumption
- Fast switching speed; 3ns typical



Description

The P35-4230-000-200 is a high performance Gallium Arsenide single pole single throw broadband RF switch MMIC. It is suitable for use in broadband communications and instrumentation applications. A 50Ω 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.

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 also available packaged in a ceramic package.

Electrical Performance

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

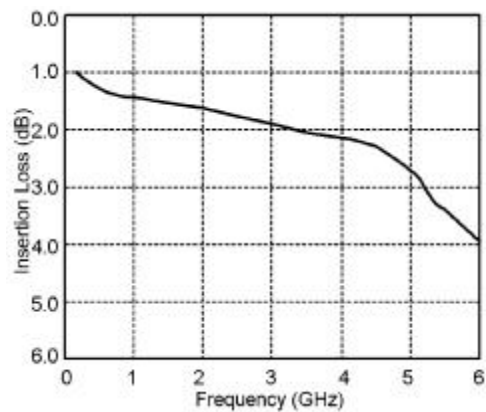
Parameter	Conditions	Min	Typ	Max	Units
Insertion Loss	DC - 2GHz	-	1.6	1.8	dB
	2 - 4GHz	-	2.1	2.9	dB
Isolation	DC - 2GHz	30	35	-	dB
	2 - 4GHz	25	30	-	dB
Input Return Loss ¹	DC - 2GHz	15	16	-	dB
	2 - 4GHz	12	14	-	dB
Output Return Loss ¹	DC - 2GHz	15	16	-	dB
	2 - 4GHz	12	14	-	dB
1dB power compression point ²	0/-5V Control; 2GHz	-	23	-	dBm
	0/-8V Control; 2GHz	-	30	-	dBm
Switching Speed	50% Control to 10%90%RF	-	3	-	ns

Notes

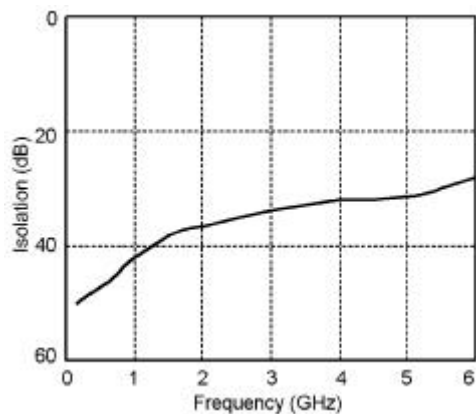
1. Return Loss measured in low loss switch state.
2. Input power at which insertion loss compresses by 1dB.

Typical Performance at 22°C

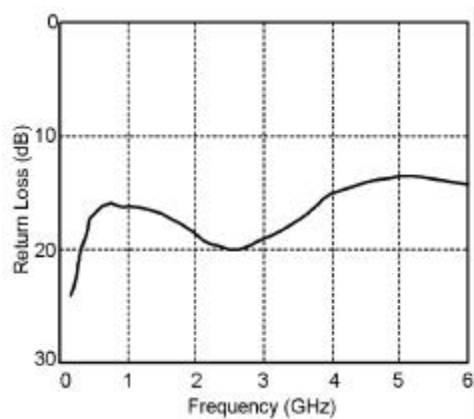
Insertion Loss



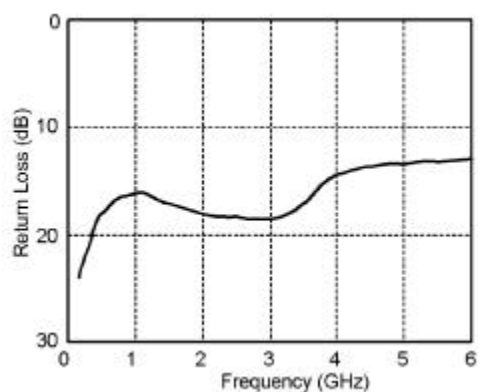
Isolation



Input Return Loss



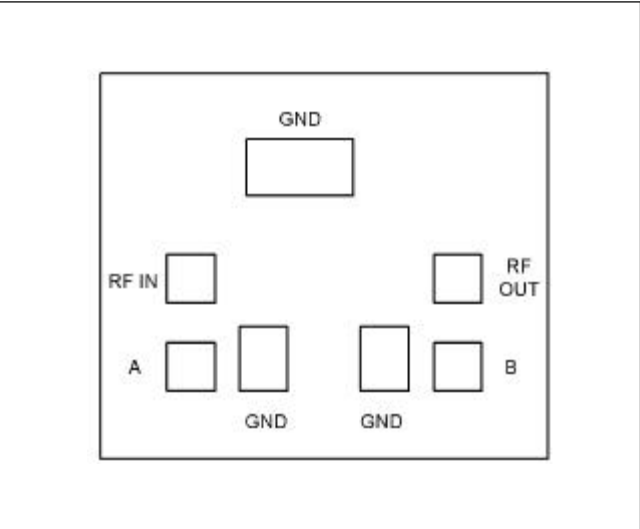
Output Return Loss



Absolute Maximum Ratings

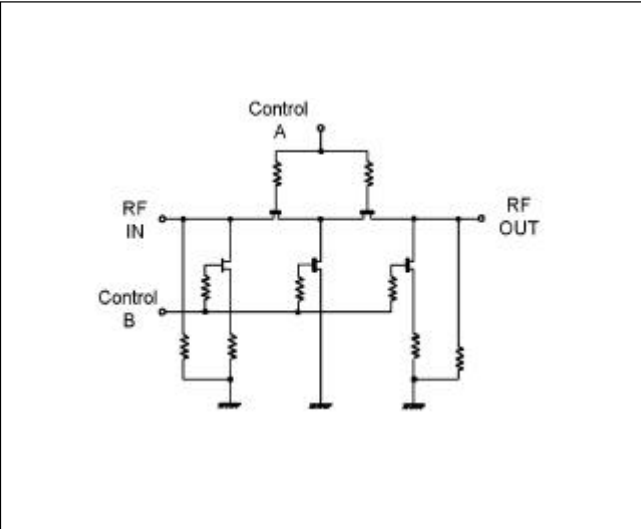
Max control voltage	-8V
Max I/P power	+33 dBm
Operating temperature	-60°C to +125°C
Storage temperature	-65°C to +150°C

Package Outline



Die size	0.82 x 0.69mm
Bond pad size	100μm x 100μm
Die thickness:	210μm

Electrical Schematic



Switching Truth Table

A	B	RF IN-RF OUT
-5V	0V	Isolated
-5V	0V	Isolated

Chip Handling, Mounting and Bonding

The back of the chip is gold metallized and can be die-attached manually onto gold, eutectically with Au-Sn (80:20) or with low temperature conductive epoxy. The maximum allowable chip temperature is 310°C for 2 minutes. Bonds should be made onto the exposed gold pads with 17 or 25 microns pure gold, half-hard gold wire. Bonding should be achieved with the chip face at 225°C to 275°C with a heated thermosonic wedge (approx. 125°C) and a maximum force of 60 grams. Ball bonds may be used but care must be taken to ensure the ball size is compatible with the bonding pads shown. The length of the bond wires should be minimised to reduce parasitic inductance, particularly those to the RF and ground pads.

Ordering Information: P35-4230-000-200

462/SM/01745/200 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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