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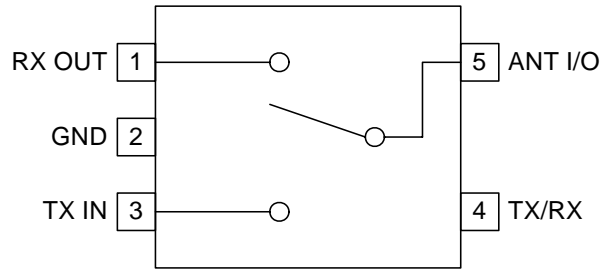
RoHS Compliant & Pb-Free Product
Package Style: SOT-5

Features

- Single Positive Power Supply
- Low Current Consumption
- 1dB Insertion Loss at 900MHz
- 24dB Crosstalk Isolation at 900MHz
- +27dBm Output P1dB

Applications

- Cordless Phones
- Wireless Computer Peripherals
- Wireless Security Systems
- General Purpose RF Switching
- Commercial and Consumer Systems

Functional Block Diagram

Product Description

The RF2436 is a very low-cost transmit/receive GaAs MESFET switch. The device can handle power levels as high as +28dBm and spans a frequency range from DC to 2500MHz. The switch will operate from power supply voltages as low as 1.5V and as high as 6V with a CMOS logic driver for the control input. No negative voltage is required, and current consumption is very low. VSWR for the active channel (transmit or receive) is 1.1:1. The device is housed in a very small industry-standard SOT 5-lead plastic package.

Ordering Information

RF2436   Transmit/Receive Switch
RF2436PCBA-41X   Fully Assembled Evaluation Board

Optimum Technology Matching® Applied

☐ GaAs HBT	☐ SiGe BiCMOS	☐ GaAs pHEMT	☐ GaN HEMT
☑ GaAs MESFET	☐ Si BiCMOS	☐ Si CMOS	
☐ InGaP HBT	☐ SiGe HBT	☐ Si BJT	

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RF2436

Absolute Maximum Ratings

Parameter	Rating	Unit
Supply Voltage	0 to +8.0	V_{DC}
Control Voltage	-1.0 to +6.0	V
Input RF Power	+30	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-40 to +150	°C

⚠ **Caution!** ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.
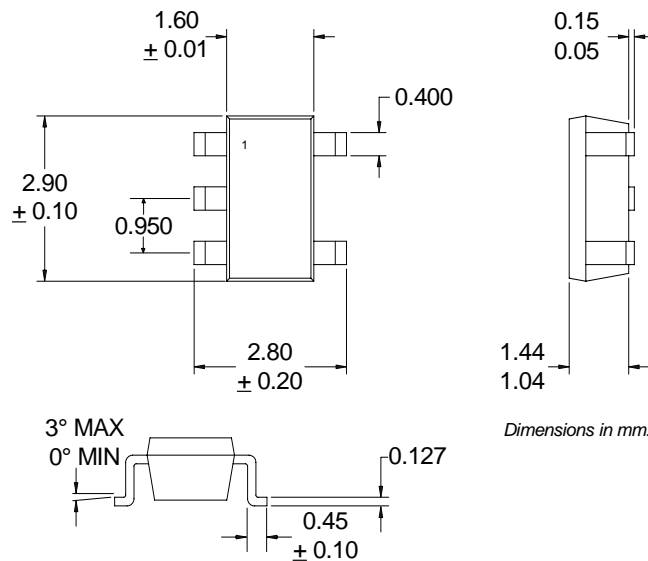
RoHS status based on EU Directive 2002/95/EC (at time of this document revision).

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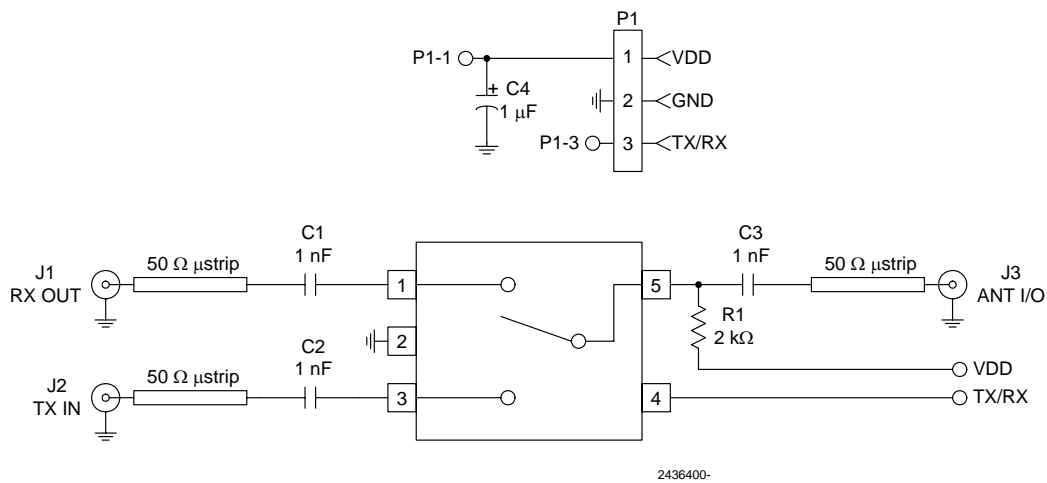
Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					T=25 °C, V_{DD}=3.0V, Freq=900MHz
Frequency Range		DC to 2500		MHz	
Insertion Loss		1	2	dB	Transmit or receive mode.
Isolation	20	22		dB	Receive mode; ANT I/O to TX IN crosstalk
	20	24		dB	Transmit mode; ANT I/O to RXOUT crosstalk
RX OUT VSWR		1.1:1			Receive mode.
TX IN VSWR		1.1:1			Transmit mode.
Output P1dB		+27		dBm	
Output IP3		+39		dBm	
Control Logic					
CTRL Logic "Low" Voltage		0		V	Receive mode.
CTRL Logic "High" Voltage		0.7		V	Transmit mode.
Power Supply					
Voltage		3		V	Specifications
		1.5 to 6		V	Operating Limits
Current		5	10	µA	Receive mode.
		0.5	1	mA	Transmit mode.

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Pin	Function	Description	Interface Schematic
1	RX OUT	Output pin for Receive mode. VSWR is 1.1:1 when Receive mode is selected and highly capacitive when Transmit mode is selected.	
2	GND	Ground connection. For best performance, keep traces physically short and connect immediately to the ground plane.	
3	TX IN	Input pin for Transmit mode. The input VSWR is 1.1:1 when Transmit mode is selected and highly capacitive when Receive mode is selected.	
4	TX/RX	Transmit Mode/Receive Mode control pin. A "low" level chooses Receive mode; a "high" level chooses Transmit mode. CMOS logic may be used to drive the control input.	
5	ANT I/O	Input/Output pin from/to antenna and power supply pin. This pin must be biased with VDD through a resistor.	

Package Drawing

1.60 ± 0.01
0.400
2.90 ± 0.10
0.950
2.80 ± 0.20
0.15
0.05
1.44
1.04

Dimensions in mm.

3° MAX
0° MIN
0.127
0.45 ± 0.10

Evaluation Board Schematic

2436400-

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Evaluation Board Layout

ANT to RX OUT, TX IN Terminated
Frequency Response=100MHz-3000MHz, Temp=-40°C/25°C/85°C,
Input Power= -30dBm, V_CC=3V,

Output Variation with Termination of Unused Port
Frequency Response=900MHz-2500MHz, Temp=25°C,
Input Power= -30dBm, VCC=3V
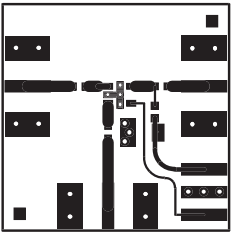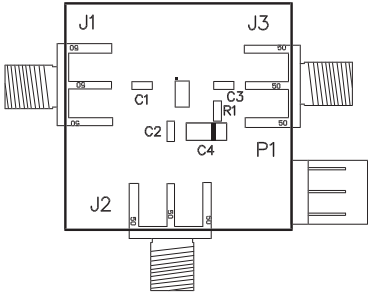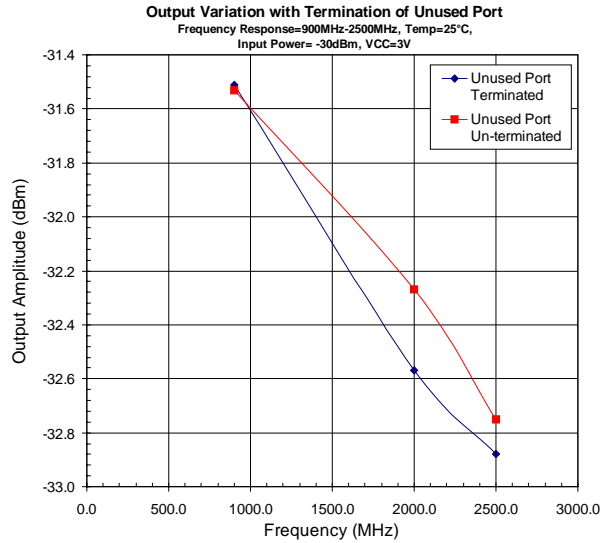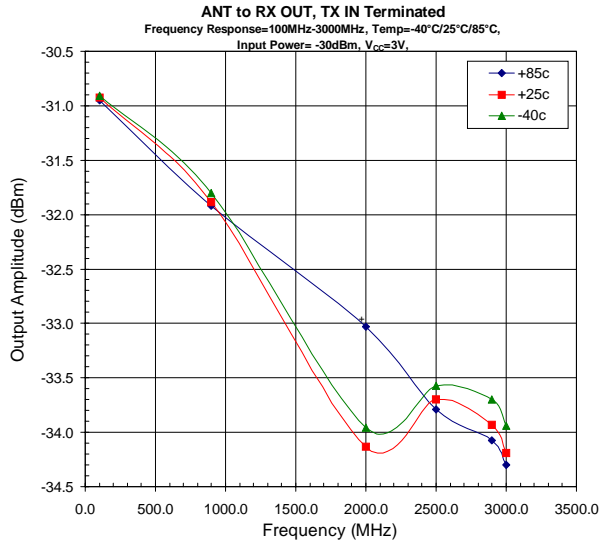
RoHS* Banned Material Content

RoHS Compliant:	Yes
Package total weight in grams (g):	0.008
Compliance Date Code:	518
Bill of Materials Revision:	-
Pb Free Category:	e3

Bill of Materials	Parts Per Million (PPM)					
	Pb	Cd	Hg	Cr VI	PBB	PBDE
Die	0	0	0	0	0	0
Molding Compound	0	0	0	0	0	0
Lead Frame	0	0	0	0	0	0
Die Attach Epoxy	0	0	0	0	0	0
Wire	0	0	0	0	0	0
Solder Plating	0	0	0	0	0	0

This RoHS banned material content declaration was prepared solely on information, including analytical data, provided to RFMD by its suppliers, and applies to the Bill of Materials (BOM) revision noted above.

* DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

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