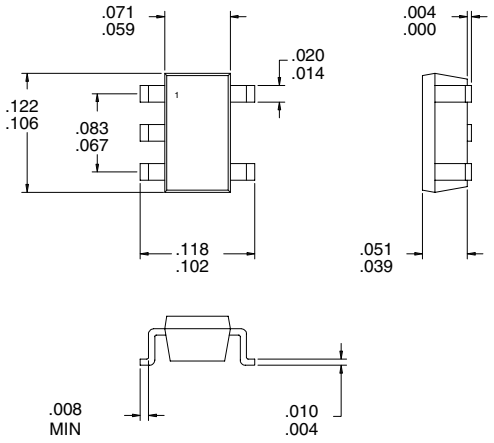
Typical Applications

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

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 2000MHz. 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. The device is housed in a very small industry-standard SOT-23 5-lead plastic package.



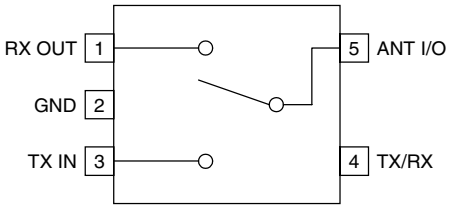
Package Style: SOT-23-5

Optimum Technology Matching® Applied

- ☐ Si BJT
- ☐ Si Bi-CMOS
- ☐ GaAs HBT
- ☐ SiGe HBT
- ☑ GaAs MESFET
- ☐ Si CMOS

Features

- Single Positive Power Supply
- Low Current Consumption
- 0.5dB Insertion Loss at 900MHz
- 24dB Crosstalk Isolation at 900MHz
- +27dBm Output P1dB



Functional Block Diagram

Ordering Information

RF2436	Transmit/Receive Switch
RF2436 PCBA	Fully Assembled Evaluation Board

RF Micro Devices, Inc.
7625 Thorndike Road
Greensboro, NC 27409, USA
Tel (336) 664 1233
Fax (336) 664 0454
http://www.rfmd.com

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

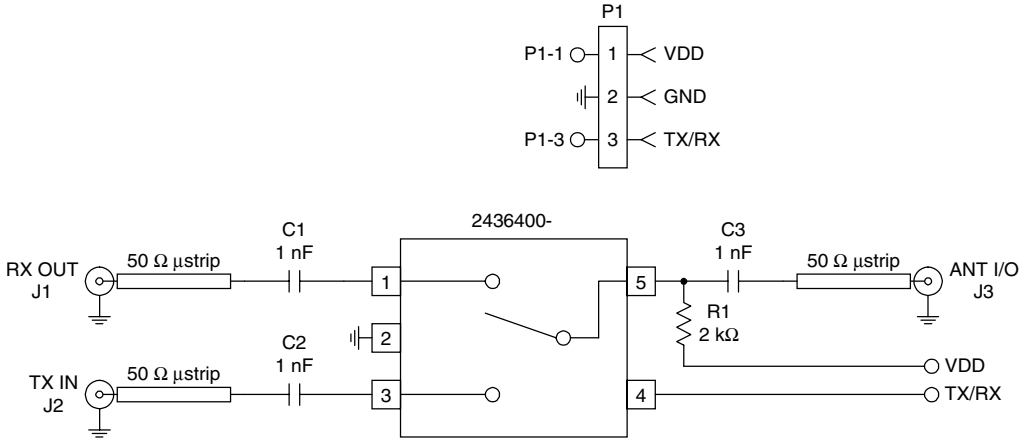
Caution! ESD sensitive device.

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Overall					T=25°C, V_{DD}=3.0V, Freq=900MHz
Frequency Range		DC to 2000		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			Receive mode.
		100:1			Transmit mode.
TX IN VSWR		1:1			Transmit mode.
		100:1			Receive 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.

Pin	Function	Description	Interface Schematic
1	RX OUT	Output pin for Receive mode. VSWR is 1:1 when Receive Mode is selected and highly capacitive when Transmit Mode is selected.	
2	GND	Ground connection. Keep traces physically short and connect immediately to the ground plane for best performance.	
3	TX IN	Input pin for Transmit mode. The input VSWR is 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.	

Evaluation Board Schematic

(Download Bill of Materials from www.rfmd.com.)



Evaluation Board Layout