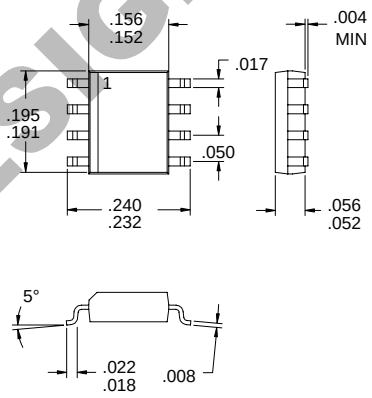
Typical Applications

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

Product Description

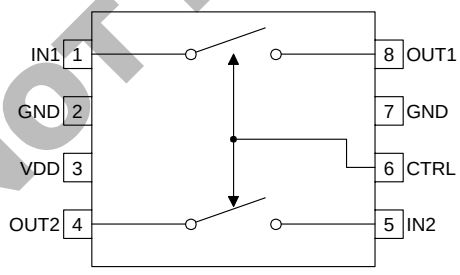
The RF2425 is a very low-cost single-throw, double-pole GaAs MESFET switch. There are two bidirectional input/output channels which can be turned off or on by a single logic control line. Two of the ports may be tied together externally to make a transmit/receive switch. The device can handle power levels as high as +32dBm 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.



Package Style: SOP-8

Optimum Technology Matching® Applied

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



Functional Block Diagram

Features

- Single Power Supply of 1.5V to 6.0V
- Low Current Consumption
- 0.5dB Insertion Loss at 900MHz
- 24dB Crosstalk Isolation at 900MHz
- +31dBm Output P1dB

Ordering Information

RF2425	4-Port Transfer Switch
RF2425 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_{DC}
Input RF Power	+33	dBm
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-40 to +150	°C

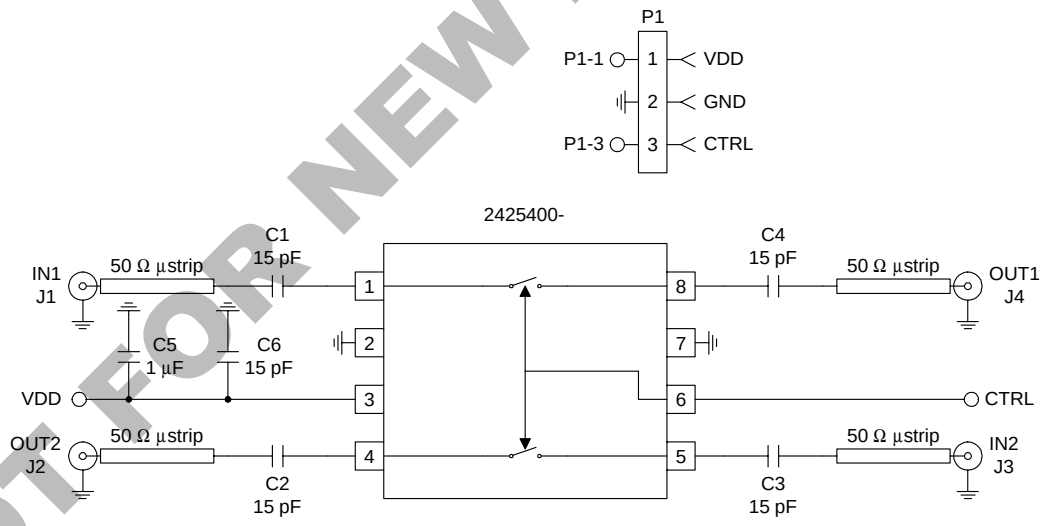
Caution! ESD sensitive device.

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		0.5	1	dB	
Isolation	20	24		dB	CTRL="Low;" IN1 to OUT2 crosstalk
	20	24		dB	CTRL="High;" IN2 to OUT1 crosstalk
"On" Input VSWR		1:1			Input of active channel
"Off" Input VSWR		100:1			Input of inactive channel (open circuit)
Output P1dB		+31		dBm	
Control Logic					
CTRL Logic "Low" Voltage		0		V	Channel 1 On, Channel 2 Off
CTRL Logic "High" Voltage		0.7		V	Channel 2 On, Channel 1 Off
Power Supply					
Voltage		3		V	Specifications
		1.5 to 6		V	Operating Limits
Current		1	2	mA	CTRL="Low"
		2	2.5	mA	CTRL="High"

Pin	Function	Description	Interface Schematic
1	IN1	Input pin for Channel 1. Channel 1 is chosen with a logic level "Low" on pin 6, CTRL. The input VSWR is 1:1 when this channel is active and highly capacitive (open circuit) when this channel is inactive. Since both channels of the switch are bidirectional, this pin may be used as an output with OUT1 as its input depending on layout preference.	
2	GND	Ground connection. Keep traces physically short and connect immediately to the ground plane for best performance.	
3	VDD	Power supply. An external RF bypass capacitor is recommended.	
4	OUT2	Output pin for Channel 2. This pin may be used as the channel 2 input instead; see pin 5 description.	
5	IN2	Input pin for Channel 2. Channel 2 is chosen with a logic level "High" on pin 6, CTRL. The input VSWR is 1:1 when this channel is active and highly capacitive (open circuit) when this channel is inactive. Since both channels of the switch are bidirectional, this pin may be used as an output with OUT2 as its input depending on layout preference.	
6	CTRL	Control pin. This pin chooses which channel is active. A "Low" level chooses Channel 1; a "High" level chooses Channel 2. CMOS logic may be used to drive the control input.	
7	GND	Same as pin 2.	
8	OUT1	Output pin for Channel 1. This pin may be used as the channel 1 input instead; see pin 1 description.	

Evaluation Board Schematic

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



Evaluation Board Layout
Board Size 1.236” x 1.186”