SPDT Reflective RF Switch

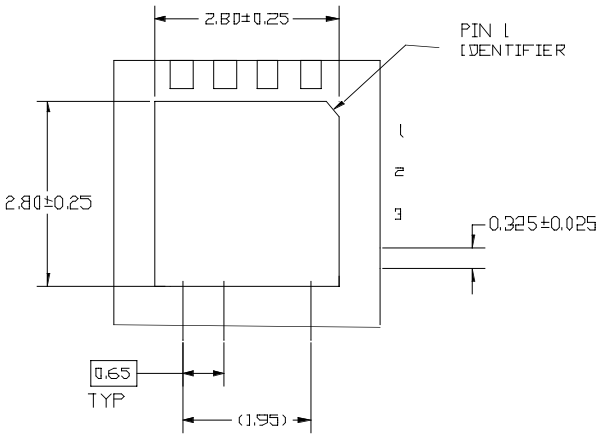
Features

- High Isolation Of > 50 dB @ 2 GHz
- Low Insertion Loss Of 0.7dB @ 2 GHz
- 1800 MHz To 2500 MHz Operating Frequency
- Integrated CMOS Control Logic
- Integrated ESD Protection
- Single Positive Supply Voltage
- Ultra Small MLF Packaging

Product Description

The Honeywell HRF-SW1010 is a high performance single pole double throw (SPDT) reflective RF switch that is ideal for use in wireless basestation and handset applications that require minimum power and minimum insertion loss.

The HRF-SW1010 is manufactured with Honeywell's patented Silicon On Insulator (SOI) CMOS technology, which provides the performance of GaAs with the economy and integration capabilities of conventional CMOS technology.



Bottom View, 16 Pin 4X4 mm MLF Package

RF Electrical Specifications @ + 25°C

Parameter	Test Condition	Frequency	Minimum	Typical	Maximum	Units
Insertion Loss		DC – 0.5 GHz 0.5 – 2.0 GHz 2.0 – 3.0 GHz 3.0 – 4.0 GHz		0.5 0.6 0.7 0.8	0.6 0.7 0.8 0.9	dB dB dB dB
Isolation		DC – 0.5 GHz 0.5 – 2.0 GHz 2.0 – 3.0 GHz 3.0 – 4.0 GHz	60 55 45 40	70 60 55 55		dB dB dB dB
VSWR		DC – 0.5 GHz 0.5 – 2.0 GHz 2.0 – 3.0 GHz 3.0 – 4.0 GHz		1.1:1 1.2:1 1.2:1 1.2:1	 1.3:1 1.3:1	Ratio Ratio Ratio Ratio
1dB Compression	Input Power	DC – 2.0 GHz 2.0 – 3.0 GHz 3.0-4.0 GHz		27		dBm dBm dBm
Input IP3	Two-Tone Inputs Up To + 5 dBm @ 0 dB Attenuation	DC – 2.0 GHz 2.0 – 3.0 GHz 3.0-4.0 GHz		47		dBm dBm dBm
Trise, Tfall Ton, Toff Transients	10% To 90% 50% Cntl To 90%/10%Rf In-Band			2 5 10		nS nS mV

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DC Electrical Specifications @ + 25°C

Parameter	Minimum	Typical	Maximum	Units
Single V_{DD} Supply Voltage	3.3	5.0	5.5	V
CMOS Logic Level (0)	0		0.8	V
CMOS Logic Level (1)	V_{DD} – 0.8		V_{DD}	V
Input Leakage Current			10	uA

Absolute Maximum Ratings[1]

Parameter	Absolute Maximum	Units
V_{DD}	+6.0	V
Vin Digital Logic 0	Vss - 0.6	V
Vin Digital Logic 1	Vdd + 0.6	V
Maximum Input Power	> 35	dBm
ESD Voltage (Human Body Model)	TBD	V
Operating Temperature	+85	Degrees C
Storage Temperature	+125	Degrees C

(Note 1) Operation beyond any of these parameters may cause permanent damage.

Latch-Up: Unlike conventional CMOS RF switches, Honeywells' HRF-SW1010 is immune to latch-up.

ESD Protection: Although this device contains ESD protection circuitry, conventional precautions should be taken to ensure that the Absolute Maximum Ratings are not exceeded.

Pin Configuration

Pin	Function	Pin	Function
1	GROUND	9	GROUND
2	GROUND	10	VSS
3	RF INPUT	11	SWITCH CONTROL
4	GROUND	12	VDD
5	GROUND	13	GROUND
6	GROUND	14	RF OUTPUT
7	GROUND	15	GROUND
8	RF OUTPUT	16	GROUND

Truth Table

Switch Control	RF Output 1	RF Output 2
0	RF INPUT	- - -
1	- - -	RF INPUT

"0" = TTL Low, "1" = TTL High

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Typical Application Circuit

Call Honeywell for details

Evaluation Circuit Board

Call Honeywell for details

Ordering Information

Ordering Number	Product
HRF-SW1010-B	Delivered In Chip Tubes
HRF-SW1010-T	Delivered On Tape And Reel[2]
HRF-SW1010-E	Engineering Evaluation Board

(Note 2) Contact Honeywell for details

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