

# SW-164-PIN



Matched SP4T RF Switch,  
20 - 1500 MHz

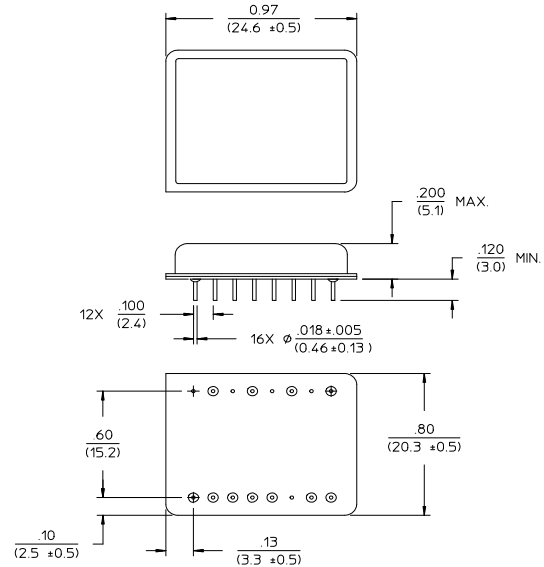
Rev. V3

## Features

- Internally Terminated
- Integral TTL Driver
- Low Loss: 0.9 dB Typical
- 50 Ohm Nominal Impedance
- MIL-STD-883 Screening Available

## Description

## Functional Block Diagram



Dimensions in ( ) are in mm  
Unless Otherwise Noted: XXX = ±0.010 (XX = ±0.25)  
XX = ±0.02 (X = ±0.5)  
WEIGHT (APPROX): 0.28 OUNCES 8 GRAMS

## Ordering Information

Part Number	Package
SW-164-PIN	DI-2

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

## Truth Table

TTL Control Inputs "1" = TTL Logic High				Condition of Switch RF Common to each RF Port			
1	2	3	4	RF1	RF2	RF3	RF4
1	0	0	0	On	Off	Off	Off
0	1	0	0	Off	On	Off	Off
0	0	1	0	Off	Off	On	Off
0	0	0	1	Off	Off	Off	On

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

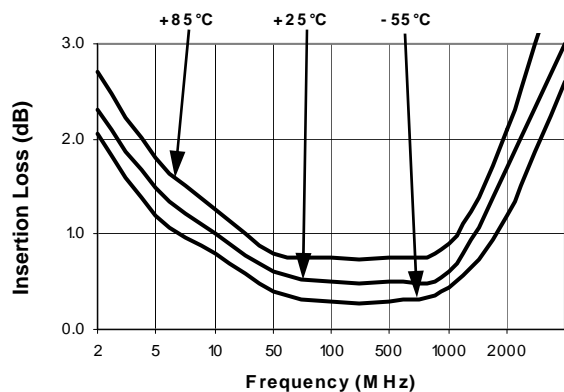
## Electrical Specifications: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ <sup>1</sup>

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss	—	20 - 1500 MHz	dB	—	—	2.0
		20 - 1000 MHz	dB	—	—	1.5
		30 - 500 MHz	dB	—	—	1.2
VSWR	—	20 - 1500 MHz	Ratio	—	—	1.80:1
		20 - 1000 MHz	Ratio	—	—	1.50:1
		30 - 500 MHz	Ratio	—	—	1.25:1
Isolation	—	20 - 1500 MHz	dB	35	—	—
		20 - 1000 MHz	dB	40	—	—
		20 - 500 MHz	dB	50	—	—
Ton Toff Transients	In-band	—	$\mu\text{S}$	—	3.0	—
		—	$\mu\text{S}$	—	1.5	—
		—	mV	—	40	—
1 dB Compression	Input Power	20 - 1500 MHz	dBm	—	+5	—
		50 - 1500 MHz	dBm	—	+15	—
IP <sub>2</sub>	For two tone input power up to +5 dBm	20 - 1500 MHz	dBm	—	+55	—
		50 - 1500 MHz	dBm	—	+70	—
IP <sub>3</sub>	For two tone input power up to +5 dBm	20 - 1500 MHz	dBm	—	+25	—
		50 - 1500 MHz	dBm	—	+40	—
Bias Power	+9 to +15 VDC @ 50 mA Max -5 VDC $\pm$ 5% @ 25 mA Max	—	mW	—	550	—

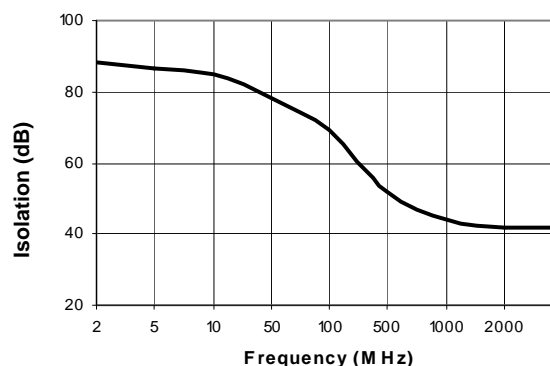
1. All specifications apply when operated with bias voltages of +12 VDC and -5 VDC ( $\pm$  5%) and 50 ohm impedance at all RF ports.

## Typical Performance Curves

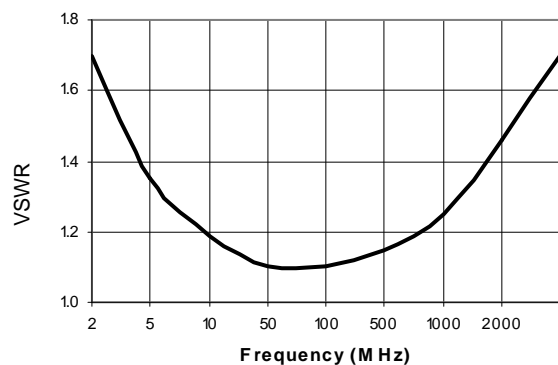
**Insertion Loss**



**Isolation**



**VSWR**



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