

**Matched GaAs SP3T Switch,  
5 - 2000 MHz**

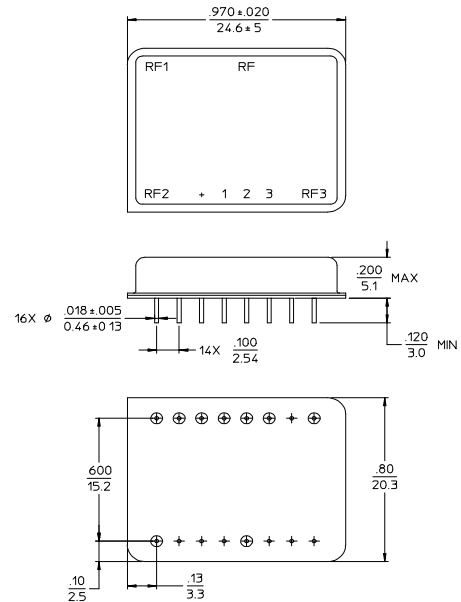
**SW-241-PIN  
V3**

**Features**

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 nS Typical
- Ultra Low DC Power Consumption, 0.22 mA Typical
- Integral TTL Driver
- 50 Ohm Nominal Impedance
- MIL-STD-883 screening available

**Description**

**Functional Block Diagram**



Dimensions in () or on bottom are in mm.  
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)  
.xx = +0.02 (x = +0.5)  
WEIGHT (APPROX): 0.26 OUNCES 7.3 GRAMS

**Ordering Information**

Part Number	Package
SW-241-PIN	DI-5

Note: Reference Application Note M513 for reel size information.  
Note: Die quantity varies.

**Truth Table**

Control Input			Condition of Switch		
"1" = Logic High (TTL)			RF Common to Each RF Port		
CTL1	CTL2	CTL3	RF1	RF2	RF3
1	0	0	On	Off	Off
0	1	0	Off	On	Off
0	0	1	Off	Off	On

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

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**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	—	5 - 2000 MHz	dB	2.5	—	—
		5 - 1000 MHz	dB	1.7	—	—
		5 - 500 MHz	dB	1.4	—	—
VSWR	—	5 - 2000 MHz	Ratio	—	—	2.0:1
		5 - 1000 MHz	Ratio	—	—	1.6:1
		5 - 500 MHz	Ratio	—	—	1.4:1
Isolation	—	5 - 2000 MHz	dB	35	—	—
		5 - 1000 MHz	dB	45	—	—
		5 - 500 MHz	dB	55	—	—
Trise, Tfall Ton, Toff Transients	50% CTL to 90/10% RF In-band	—	nS	—	7	—
		—	nS	—	20	—
		—	mV	—	80	—
1 dB Compression	Input Power	500 - 2000 MHz	dBm	—	+27	—
		50 MHz	dBm	—	+21	—
IP <sub>2</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	—	+68	—
		50 MHz	dBm	—	+60	—
IP <sub>3</sub>	For two tone input power up to +13 dBm	500 - 2000 MHz	dBm	—	+46	—
		50 MHz	dBm	—	+40	—
Bias Power	+5 VDC @ 0.22 mA Typ	—	mA	—	—	1

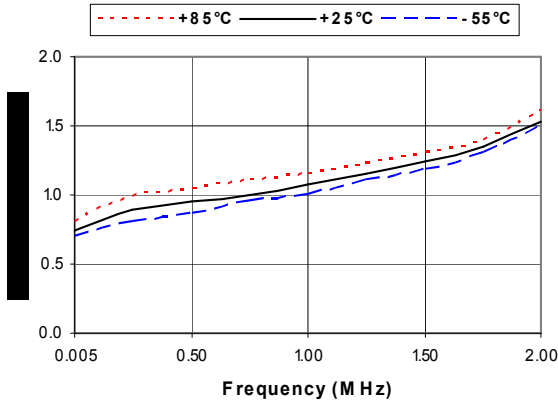
1. All specifications apply when operated with bias voltages of +5 VDC and 50 ohm impedance at all RF Ports.

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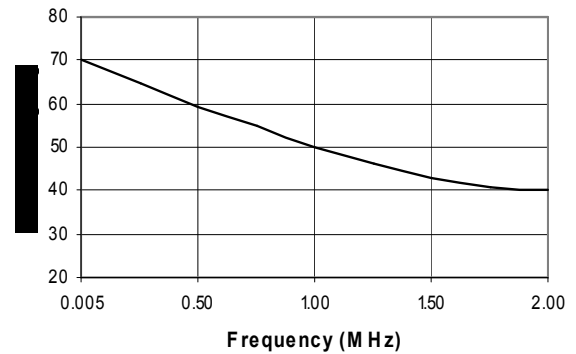
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**Typical Performance Curves**

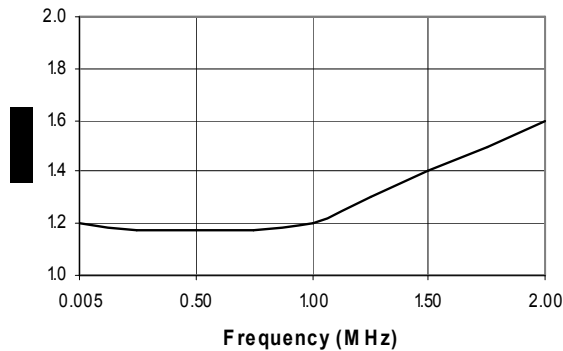
**Insertion Loss**



**Isolation**



**VSWR**



**Schematic**

