

M/A-COM GaAs SP4T Switch, 5 - 2000 MHz

V 3.00

SW-262

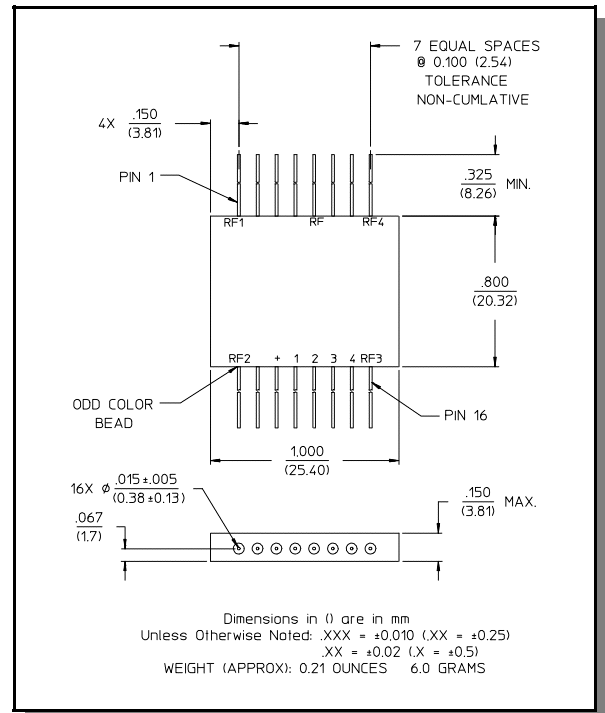
Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 nS Typical
- Ultra Low DC Power Consumption, 0.3 mA Typical
- Integral TTL Driver

Description

M/A-COM's SW-262 is a hermetic SP4T switch that features ultralow DC power consumption. SW-262 is operates with a single +5V bias. Due to the use of GaAs MMICs the switch features fast switching speed and high intercept points. The switch is packaged in a metal flatpack, and is available with screening upon request. This switch is ideal for industrial and military applications where high reliability is required.

FP-17



Electrical Specifications: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ ¹

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|------------------|--|----------------|-------|-----|-----|-------|
| Insertion Loss | — | 5 - 2000 MHz | dB | — | — | 2.2 |
| | | 5 - 1000 MHz | dB | — | — | 1.4 |
| | | 5 - 500 MHz | dB | — | — | 1.2 |
| VSWR | — | 5 - 2000 MHz | Ratio | — | — | 2.5:1 |
| | | 5 - 1000 MHz | Ratio | — | — | 1.5:1 |
| | | 5 - 500 MHz | Ratio | — | — | 1.3:1 |
| Isolation | — | 5 - 2000 MHz | dB | 35 | — | — |
| | | 5 - 1000 MHz | dB | 37 | — | — |
| | | 5 - 500 MHz | dB | 42 | — | — |
| Impedance | — | — | Ohms | — | 50 | — |
| Trise, Tfall | 10% to 90% / 90% to 10% RF | — | ns | — | 7 | — |
| Ton, Toff | 50% CTL to 90/10% RF | — | ns | — | 20 | — |
| Transients | In-Band | — | mV | — | 80 | — |
| 1 dB Compression | Input Power | 500 - 2000 MHz | dBm | — | +27 | — |
| | | 50 MHz | dBm | — | +21 | — |
| IP ₂ | For two-tone input power up to +13 dBm | 500 - 2000 MHz | dBm | — | +68 | — |
| | | 50 MHz | dBm | — | +60 | — |
| IP ₃ | For two-tone input power up to +13 dBm | 500 - 2000 MHz | dBm | — | +46 | — |
| | | 50 MHz | dBm | — | +40 | — |

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

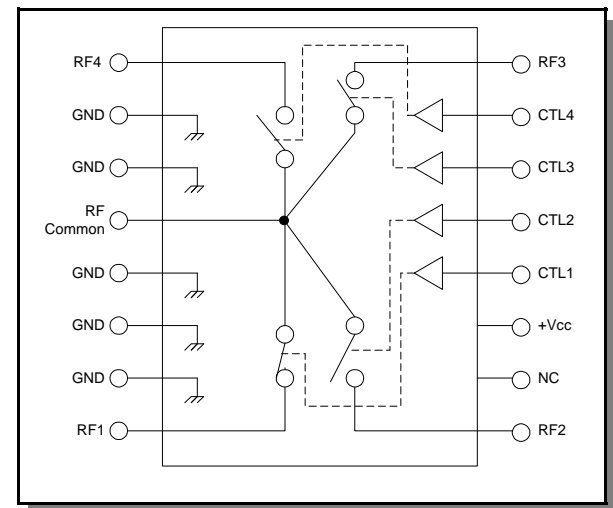
Electrical Specifications: $T_A = -55^\circ\text{C}$ to $+85^\circ\text{C}$ ¹

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|-----------|--|-----------|-------|------|-----|------|
| +Vcc | — | — | V | 4.75 | 5.0 | 5.25 |
| Logic "0" | Sink Current is 20 μA Max. CTL1 through CTL4 | — | V | 0.0 | — | 0.8 |
| Logic "1" | Source Current is 20 μA Max. CTL1 through CTL4 | — | V | 2.0 | - | 5.0 |
| Icc | $4.75 \leq V_{cc} \leq 5.25\text{V}$ | — | mA | — | 0.3 | 1 |

Truth Table

| Control Input | | | | Condition of Switch | | | |
|---------------------------------|------|------|------|---------------------------|-----|-----|-----|
| "1" = TTL High "0" = TTL Low | | | | RF Common to Each RF Port | | | |
| CTL1 | CTL2 | CTL3 | CTL4 | 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 |

Schematic

Absolute Maximum Ratings ²

| Parameter | Absolute Maximum |
|--|--------------------|
| Max Input Power 0.05 GHz 0.5 - 2.0 GHz | +27 dBm +34 dBm |
| +Vcc | +7.0V |
| Logic Values | -0.5 to +Vcc +0.5V |
| Operating Temperature | -55°C to +85°C |
| Storage Temperature | -65°C to +125°C |

2. Operation of this device above any one of these parameters may cause permanent damage.

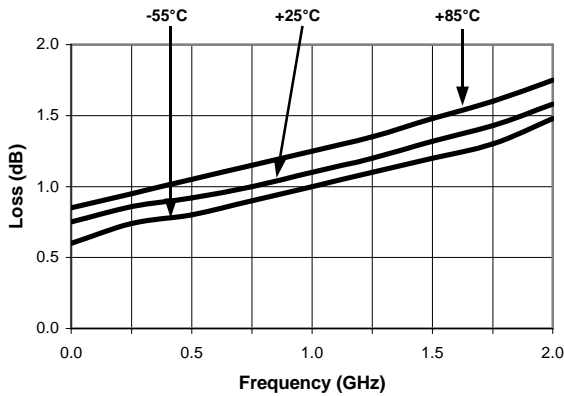
Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

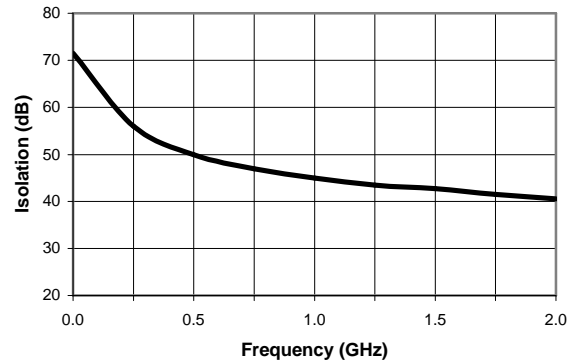
Visit www.macom.com for additional data sheets and product information.

Typical Performance Curves

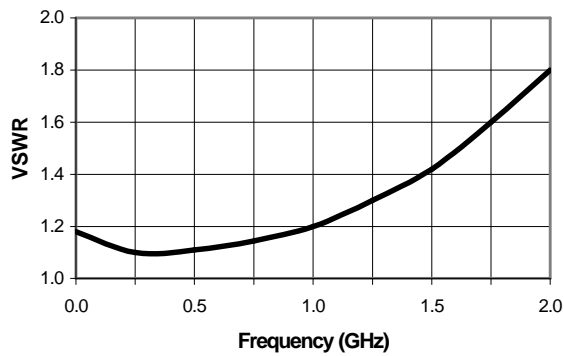
Insertion Loss



Isolation



VSWR



Ordering Information

| Part Number | Package |
|-------------|---------|
| SW-262 PIN | FP-17 |

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