

SW-215-PIN / SW-216-PIN



Matched GaAs SPST Switch,
5 - 3000 MHz

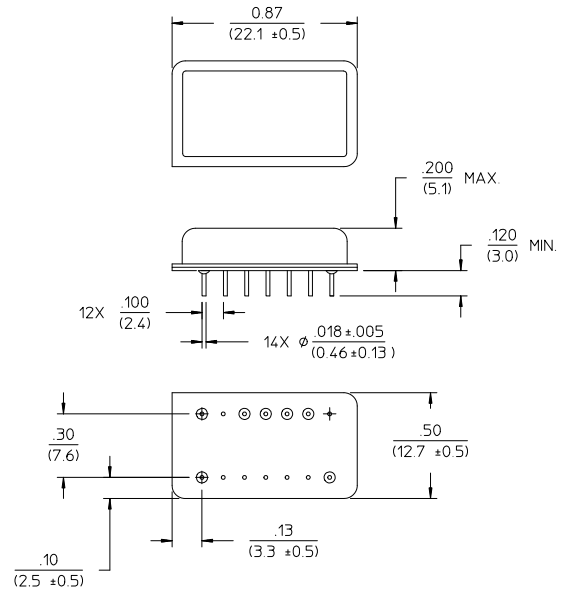
Rev. V3

Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 nS Typical
- Ultra Low DC Power Consumption, 0.07 mA Typical
- Integral TTL (SW-215) or CMOS (SW-216) Driver
- 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): 0.14 OUNCES 4 GRAMS

Ordering Information

| Part Number | Package |
|-------------|---------|
| SW-215-PIN | DI-1 |
| SW-216-PIN | DI-1 |

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

Truth Table

| TTL Control Input "1" = Logic High TTL (SW-215)/ CMOS (SW-216) | Condition of Switch RF Common to Each RF Port |
|---|--|
| | RF1 to RF2 |
| 0 | ON |
| 1 | OFF |

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

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

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|-----------------|--|----------------|-------|-----|-----|--------|
| Insertion Loss | — | 5 - 3000 MHz | dB | 2.9 | — | — |
| | | 5 - 2000 MHz | dB | 1.5 | — | — |
| | | 5 - 1000 MHz | dB | 1.2 | — | — |
| | | 5 - 500 MHz | dB | 1.1 | — | — |
| VSWR | — | 5 - 3000 MHz | Ratio | — | — | 2.0:1 |
| | | 5 - 2000 MHz | Ratio | — | — | 1.9:1 |
| | | 5 - 1000 MHz | Ratio | — | — | 1.4:1 |
| | | 5 - 500 MHz | Ratio | — | — | 1.25:1 |
| Isolation | — | 5 - 3000 MHz | dB | 27 | — | — |
| | | 5 - 2000 MHz | dB | 45 | — | — |
| | | 5 - 1000 MHz | dB | 55 | — | — |
| | | 5 - 500 MHz | dB | 60 | — | — |
| IP ₂ | For two tone input power up to +13 dBm | 500 - 4000 MHz | dBm | — | +68 | — |
| | | 50 MHz | dBm | — | +60 | — |
| IP ₃ | For two tone input power up to +13 dBm | 500 - 4000 MHz | dBm | — | +46 | — |
| | | 50 MHz | dBm | — | +40 | — |

1. All specifications apply when operated with bias voltages of +5 VDC (SW-205) or +8 VDC (SW-206) and 50 ohm impedance at all RF ports.

SW-215

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|---|---------------------------------|----------------|-------|-----|-----|-----|
| Trise, Tfall Ton, Toff Transients | 50% CTL to 90/10% RF In-band | — | nS | — | 7 | — |
| | | — | nS | — | 20 | — |
| | | — | mV | — | 70 | — |
| 1 dB Compression | Input Power | 500 - 4000 MHz | dBm | — | +27 | — |
| | | 50 MHz | dBm | — | +21 | — |
| Bias Power | +5 VDC @ 0.07 mA Typ | — | mA | — | — | 1 |

SW-216

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|---|------------------------------------|----------------|-------|-----|-----|-----|
| Trise, Tfall Ton, Toff Transients | 50% CTL to 90/10% RF In-band | — | nS | — | 20 | — |
| | | — | nS | — | 40 | — |
| | | — | mV | — | 35 | — |
| 1 dB Compression | Input Power | 500 - 4000 MHz | dBm | — | +33 | — |
| | | 50 MHz | dBm | — | +26 | — |
| Bias Power | +5 to +8 VDC @ 0.07 to 0.22 mA Typ | — | mA | — | — | 1 |

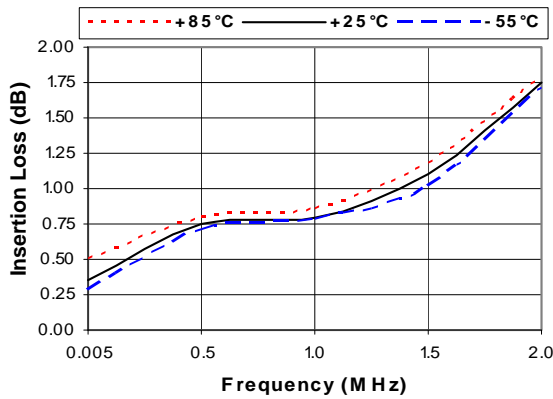
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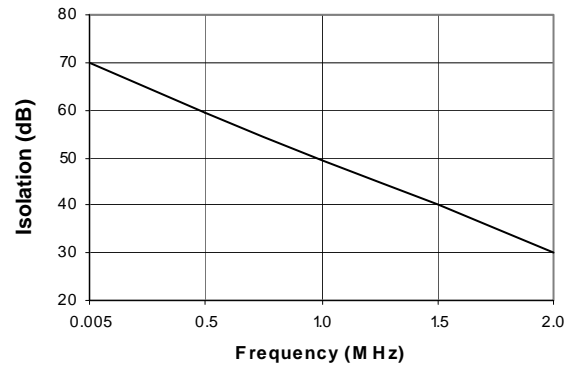
Rev. V3

Typical Performance Curves

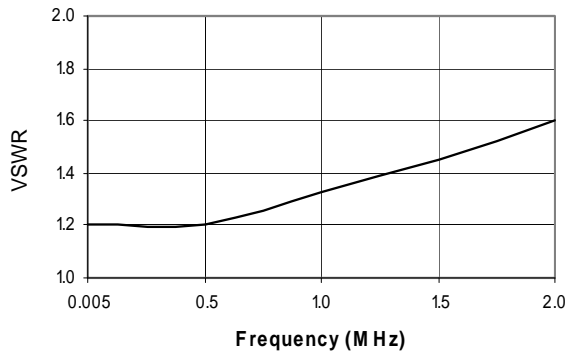
Insertion Loss



Isolation



VSWR



Schematic

