SW-231-PIN

Matched GaAs SPST Switch, 5 - 4000 MHz

Features

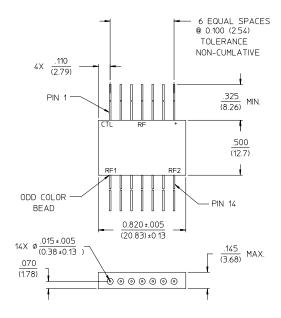
- Low Insertion Loss: 1.0 dB Typical
- Fast Switching Speed: 20 ns Typical
- Ultra Low DC Power Consumption: 0.07 mA Typical
- Integral TTL
- 50 Ohm Nominal Impedance
- MIL-STD-883 Screening Available

Description



Rev. V3

Functional Block Diagram



Ordering Information

| Part Number | Package | | |
|-------------|---------|--|--|
| SW-231-PIN | FP-16 | | |

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

Truth Table

| TTL Control Input "1" = Logic High | Condition of Switch | | |
|---------------------------------------|---------------------|--|--|
| TTĽ | RF1 to RF2 | | |
| 1 | ON | | |
| 2 | OFF | | |

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

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Rev. V3

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

| Parameter | Test Conditions | Frequency | Units | Min | Тур | Max |
|---------------------------------------|--|--|----------------|----------|------------|-------------------|
| Insertion Loss — | _ | 5 - 4000 MHz 5 - 2000 MHz 5 - 1000 MHz | dB dB dB | | | 2.8 1.5 1.2 |
| | | 5 - 500 MHz | dB | — | — | 1.1 |
| VSWR — | _ | 5 - 4000 MHz 5 - 2000 MHz | Ratio Ratio | _ | _ | 2.3:1 1.9:1 |
| | | 5 - 1000 MHz | Ratio | _ | _ | 1.5:1 |
| | | 5 - 500 MHz | Ratio | _ | _ | 1.4:1 |
| Isolation | _ | 5 - 4000 MHz 5 - 2000 MHz | dB dB | 22 37 | _ | — |
| | | 5 - 1000 MHz | dB | 50 | _ | _ |
| | | 5 - 500 MHz | dB | 60 | _ | _ |
| Ton, Toff | 50% CTL to 90/10% RF | _ | nS | — | 7 | — |
| Ton, Toff Transients | In-band | _ | nS mV | _ | 20 70 | |
| 1 dB Compression Input Power | Input Power | 500 - 4000 MHz | dBm | | +27 | |
| | | 50 MHz | dBm | | +21 | — |
| IP ₂ For two tone input po | For two tone input power up to +13 dBm | 500 - 4000 MHz 50 MHz | dBm dBm | — | +68 +60 | — |
| | | 50 MHZ | UDIII | | +00 | |
| IP ₃ | For two tone input power up to +13 dBm | 500 - 4000 MHz 50 MHz | dBm dBm | | +46 +40 | |
| Bias Power | +5 VDC @ 0.07 mA Typical | _ | mA | _ | - | 1 |

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

2

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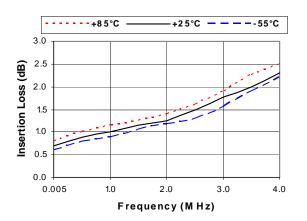
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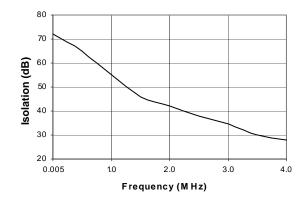
Rev. V3

Typical Performance Curves

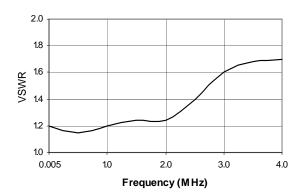
Insertion Loss



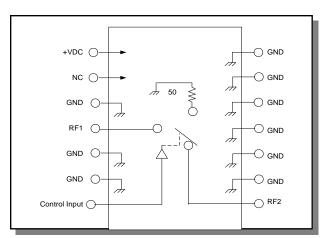
Isolation



VSWR



Schematic



3

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