

Matched GaAs SPDT Switch 5-2000 MHz

SW-233/236

V 2.01

Features

- Low Insertion Loss, 1.0 dB Typical
- Fast Switching Speed, 20 ns Typical
- Ultra Low DC Power Consumption, 0.12 mA Typical
- Integral TTL (SW-233) or CMOS (SW-236) Driver

Guaranteed Specifications *

(From -55°C to +85°C)

| Frequency Range | 5-2000 MHz | |
|-----------------|------------|------------|
| Insertion Loss | 5-2000 MHz | 1.5 dB Max |
| | 5-1000 MHz | 1.2 dB Max |
| | 5- 500 MHz | 1.1 dB Max |
| VSWR | 5-2000 MHz | 1.9:1 Max |
| | 5-1000 MHz | 1.5:1 Max |
| | 5- 500 MHz | 1.4:1 Max |
| Isolation | 5-2000 MHz | 40 dB Min |
| | 5-1000 MHz | 45 dB Min |
| | 5- 500 MHz | 53 dB Min |

Operating Characteristics

| Impedance | 50 Ohms Nominal | |
|----------------------------------|-----------------|---------------|
| Switching Characteristics | SW-233 | SW-236 |
| | (TTL) | (CMOS) |
| Trise, Tfall | 7 ns | 20 ns Typ |
| Ton, Toff (50% CTL to 90/10% RF) | 20 ns | 40 ns Typ |
| Transients (In-Band) | 100 mV | 70 mV Typ |

Input Power for 1 dB Compression

| Model #'s | SW-233 | SW-236 | |
|--------------|--------|--------|---------|
| 500-2000 MHz | +27 | +33 | dBm Typ |
| 50 MHz | +21 | +26 | dBm Typ |

Intermodulation Intercept Point

(for two-tone input power up to +13 dBm)

| Intercept Points | IP ₂ | IP ₃ | |
|------------------|-----------------|-----------------|---------|
| 500-2000 MHz | +68 | +46 | dBm Typ |
| 50MHz | +60 | +40 | dBm Typ |

Bias Power

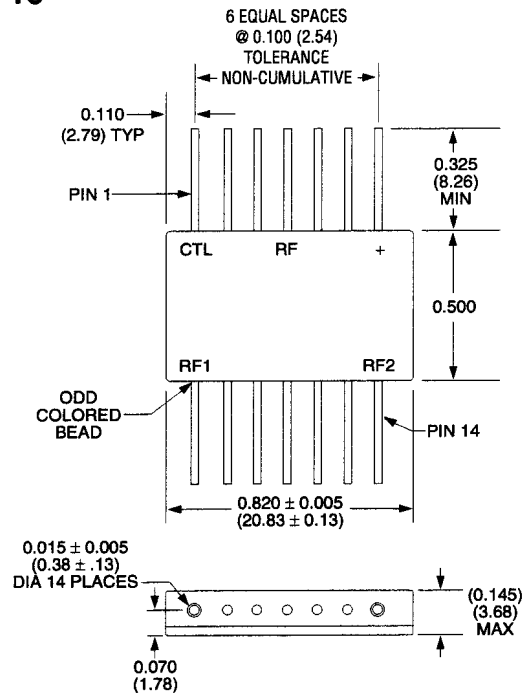
| | |
|--------|--|
| SW-233 | +5 VDC @ 0.12 mA Typ, 1 mA Max |
| SW-236 | +5 to +8 VDC @ 0.12 to 0.40 mA Typ, 1 mA Max |

Environmental

See Appendix for MIL-STD-883 screening option.

* All specifications apply when operated with bias voltages of +5 VDC (SW-233) or +8 VDC (SW-236) and 50 ohm impedance at all RF ports.

FP-16



Dimensions in () are in mm.
Unless Otherwise Noted: .xxx = ±0.010 (.xx = ±0.25)
.xx = ±0.02 (.x = ±0.5)

Ordering Information

| Model No. | Package |
|------------|----------|
| SW-233 PIN | Flatpack |
| SW-236 PIN | Flatpack |

Specifications Subject to Change Without Notice.

15-98

M/A-COM, Inc.

North America: Tel. (800) 366-2266
Fax (800) 618-8883

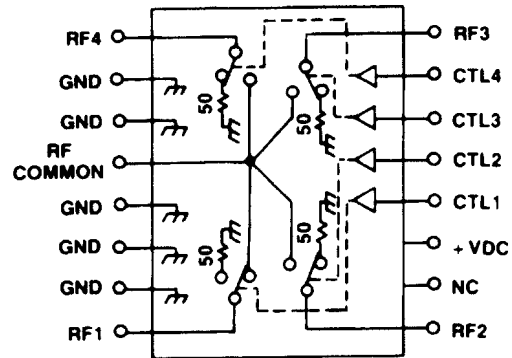
Asia/Pacific: Tel. +81 (03) 3226-1671
Fax +81 (03) 3226-1451

Europe: Tel. +44 (1344) 869 595
Fax +44 (1344) 300 020

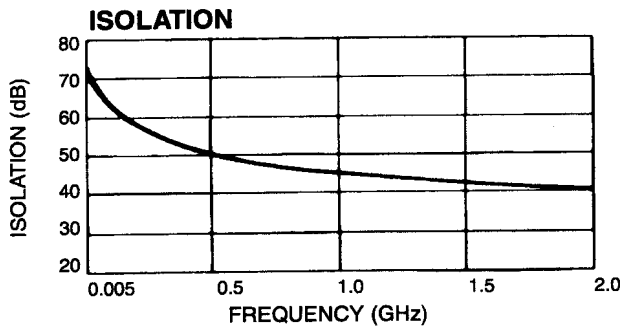
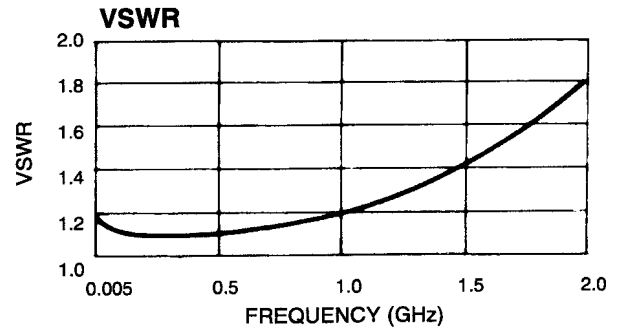
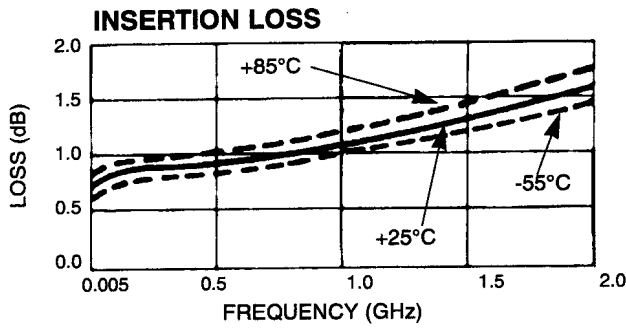
Truth Table

| Control Input | | | | Condition of Switch | | | |
|--|------|------|------|------------------------------|-----|-----|-----|
| "1" = Logic High TTL(SW-261)/CMOS(SW-264) | | | | 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



Typical Performance



Specifications Subject to Change Without Notice.

M/A-COM, Inc.

North America: Tel. (800) 366-2266
Fax (800) 618-8883

Asia/Pacific: Tel. +81 (03) 3226-1671
Fax +81 (03) 3226-1451

Europe: Tel. +44 (1344) 869 595
Fax +44 (1344) 300 020

15-115