## Matched GaAs SPDT Svitch, 5-2000 MHZ

## 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
- 50 Ohm Nominal Impedance
- MIL-STD-883 screening available


## Description

## Ordering Information

| Part Number | Package |
| :---: | :---: |
| SW-233-PIN | FP-16 |
| SW-236-PIN | FP-16 |

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

## Functional Block Diagram



## Truth Table

| Control Input |  |  |  | Condition of Switch |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1" $=$ Logic High <br> CTL (SW-233) |  |  |  |  |  |  |  |  |  |  | RF Common to <br> Each RF Port |  |  |  |
| CTL (SW-236) <br> $\mathbf{1}$ | CTL <br> $\mathbf{2}$ | CTL <br> $\mathbf{3}$ | CTL <br> $\mathbf{4}$ | 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 |  |  |  |  |  |  |  |

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Matched GaAs SPDT Switch,
5-2000 MHZ
Electrical Specifications: $\mathrm{T}_{\mathrm{A}}=-55^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}{ }^{1}$

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Insertion Loss | - |  |  |  |  |  |
|  |  | - | $5-2000 \mathrm{MHz}$ | dB | 1.5 | - |

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

## SW-233

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Trise, Tfall Ton, Toff Transients | 50\% CTL to 90/10\% RF In-band | — | $\begin{aligned} & \mathrm{nS} \\ & \mathrm{nS} \\ & \mathrm{mV} \end{aligned}$ | — | $\begin{gathered} 7 \\ 20 \\ 100 \end{gathered}$ | - |
| 1 dB Compression | Input Power | $\begin{gathered} 500-2000 \mathrm{MHz} \\ 50 \mathrm{MHz} \end{gathered}$ | dBm dBm | — | $\begin{aligned} & +27 \\ & +21 \end{aligned}$ | - |
| Bias Power | +5 VDC @ 0.12 mA Typ | - | mA | - | - | 1 |

## SW-236

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Trise, Tfall Ton, Toff Transients | 50\% CTL to 90/10\% RF In-band | — | nS <br> nS <br> mV | - | $\begin{aligned} & 20 \\ & 40 \\ & 70 \end{aligned}$ | - |
| 1 dB Compression | Input Power | $\begin{gathered} 500-2000 \mathrm{MHz} \\ 50 \mathrm{MHz} \end{gathered}$ | dBm dBm | — | $\begin{aligned} & +33 \\ & +26 \end{aligned}$ | — |
| Bias Power | +5 to +8 VDC @ 0.12 to 0.40 mA Typ | - | mA | - | - | 1 |

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PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology
Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available Commitment to produce in volume is not guaranteed

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## Matched GaAs SPDT Switch,

## Typical Performance Curves

## Insertion Loss



## VSWR



## Isolation



Schematic


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[^0]:    * Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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