

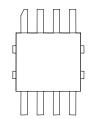
EMS101-P

UPDATED 03/31/2008

DC-6GHz GaAs MMIC SPDT SWITCH

FEATURES

- **BROADBAND PERFORMANCE**
- **HIGH ISOLATION**
- **LOW INSERTION LOSS**
- LOW DC POWER CONSUMPTION
- **FAST SWITCHING SPEED**
- SI3N4 PASSIVATION
- ADVANCED EPITAXIAL HETEROJUNCTION PROFILE PROVIDES HIGH RELIABILITY





Caution! ESD sensitive device.

DESCRIPTION

The EMS101-P is a GaAs IC single pole double throw broadband RF switch. It can be used for broadband communications and instrument application. This device is packaged in a SO-8 surface mount package and internally it can be terminated with 50ohm load or short circuit based on requirement .The switch is controlled by the application of 0V/-5V signals to the control lines in accordance with the truth table below.

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

| SYMBOL | PARAMETERS/TEST CONDITIONS | | MIN | TYP | MAX | UNIT |
|----------|--------------------------------------------|----------------------|-----|-----|-----|------|
| F | Operating frequency Range | | DC | | 6 | GHz |
| P1dB | Input Power at 1dB Gain compression | 0/-5V Control; 50MHz | | 20 | | dBm |
| | | 0/-5V Control; 2GHz | | 26 | | dBm |
| Ls | Insertion Loss | (DC-3GHz) | | 1 | 1.5 | dB |
| | | (3-6GHz) | | 1.5 | 2 | dB |
| ISO | Isolation | (DC-3GHz) | | 30 | 32 | dB |
| | | (3-6GHz) | | 25 | 28 | dB |
| VSWR in | Input VSWR | | | 1.8 | | |
| VSWR out | Output VSWR | | | 1.8 | | |
| T | Switching Speed (50% control to 10%/90%RF) | | | 3 | 8 | nS |

Note:

- VSWR measured in low loss switch state 1.
- P1dB measured input power at which insertion loss compressed by 1dB
- All measurement made in a 500hm system

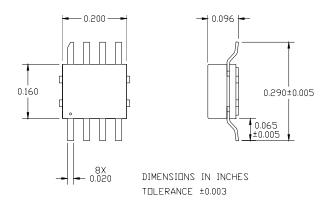


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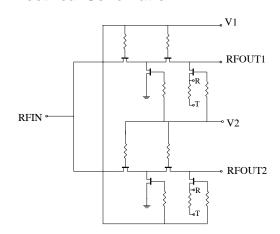
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Package Outline



Electrical Schematic



Ground R: Reflective Ground T: Terminated

Pin Description

| Pin | Function | |
|-----|------------|--|
| 1 | Ground | |
| 2 | RF IN | |
| 3 | Ground | |
| 4 | Ground | |
| 5 | RF OUT1 | |
| 6 | Control V1 | |
| 7 | Control V2 | |
| 8 | RF OUT2 | |

Switch Diagram

| V1 | V2 | RFIN-RFOUT1 | RFIN-RFOUT2 |
|-----|-----|-------------|-------------|
| 0V | -5V | Low Loss | Isolated |
| -5V | 0V | Isolated | Low Loss |

ABSOLUTE MAXIMUM RATING

RF input power 31dBm

Operating temperature -40°C to +85°C Storage temperature -65°C to 150°C