



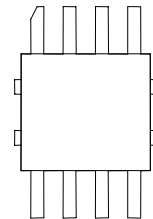
# EMS101-P1

## DC – 6 GHz GaAs MMIC SPDT SWITCH

ISSUED DATE: 10-21-03

### FEATURES

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



### Description

The EMA101-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 (T<sub>a</sub> = 25 °C)

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

Note:

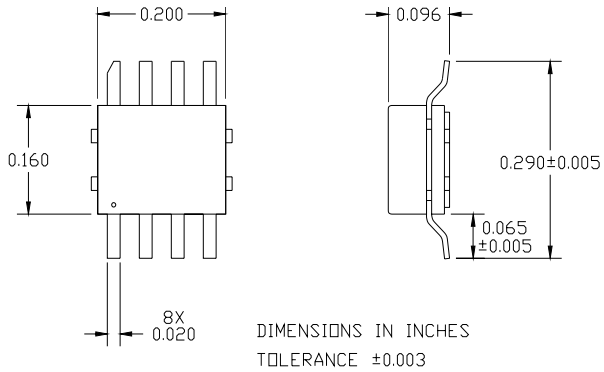
1. VSWR measured in low loss switch state
2. P1dB measured input power at which insertion loss compressed by 1dB
3. All measurement made in a 50Ohm system



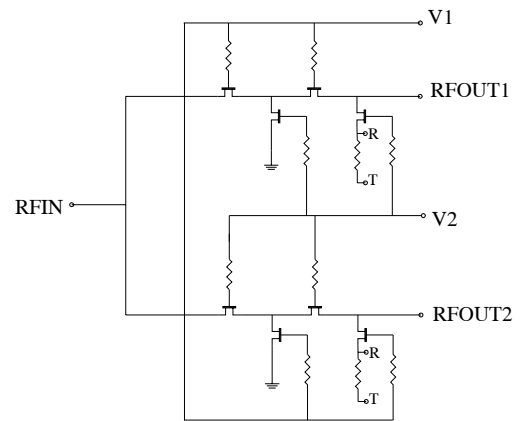
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## DC – 6 GHz GaAs MMIC SPDT SWITCH

### 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 V2
7	Control V1
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