



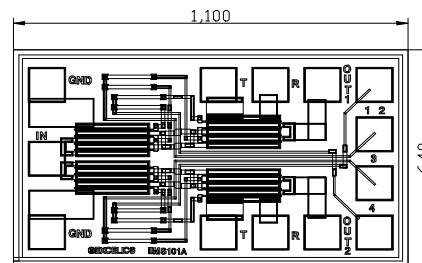
EMS101-C

DATA SHEET DC-6GHz GaAs MMIC SPDT SWITCH

Release Date: March 7, 2003

FEATURES

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



All dimensions in microns

Description

The EMS101-C is a GaAs IC single pole double throw broadband RF switch chip. It can be used for broadband communications and instrument application. The RF outputs can be terminated with 50ohm load or short circuit. The switch is controlled by 0V/-5V signals to the control lines in accordance with the truth tables below.

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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		21		dBm
		0/-5V Control; 2Ghz		27		
ILs	Insertion Loss (DC-3GHz)			0.9	1.3	dB
	(3-6GHz)			1.2	1.8	dB
ISO	Isolation (DC-3GHz)		33	38		dB
	(3-6GHz)		30	32		dB
RL in	Input Return Loss		14	16		dB
RL out	Output Return Loss		15	18		dB
T	Switching Speed (50% control to 10%/90%RF)			3	8	nS
IP3	Third Order Intercept			46		dBm

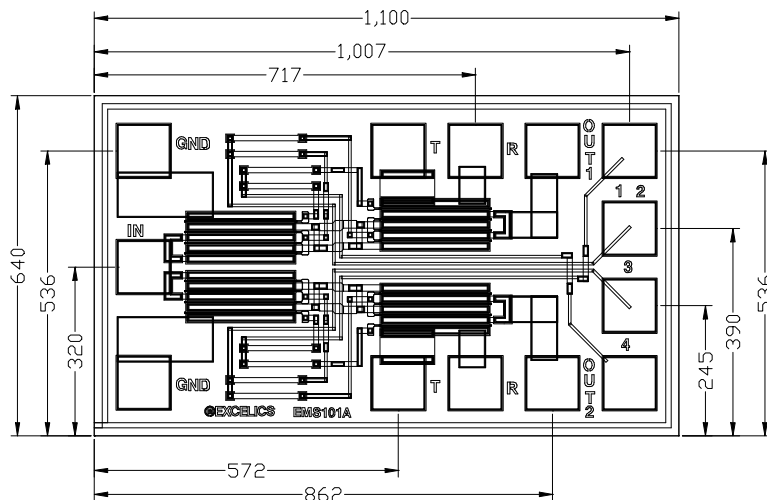
Notes:

1. All measurements made in a 50ohm system.
2. P1dB measured input power at which insertion loss compressed by 1 dB.
3. Return Loss measured in low loss switch state

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Chip Outline



Dimensions indicated in um.
 All bonding pads are 100um*100um.

Electrical Schematic

Switching Truth Table

1&2	3&4	IN-OUT1	IN-OUT2
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

