

50-60GHz Reflective SPDT Switch

GaAs Monolithic Microwave IC

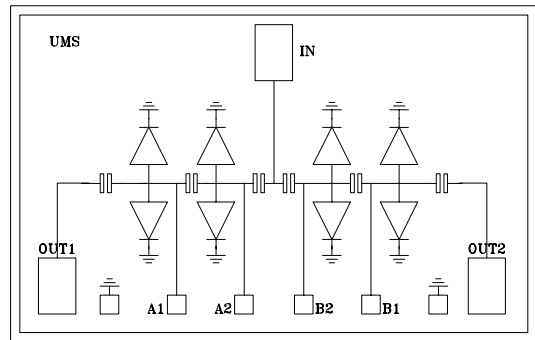
target

Description

The CHS2190a is a wideband monolithic diode based reflective switch.

It is designed for a wide range of applications, from military to commercial communication systems. The backside of the chip is both RF and DC grounds. This helps simplify the assembly process.

The circuit is manufactured with a high performance Schottky diode process, 1 μ m gate length (stepper lithography), via holes through the substrate and air bridges.



Main Features

- Broadband performances : 50-60GHz
- Low insertion loss : 2dB max
- High isolation : 25dB min
- Chip size : 2.16 x 0.75 x 0.10 mm

Main Characteristics

T_{amb.} = 25°C

Symbol	Parameter	Min	Typ	Max	Unit
II	ON state insertion loss		1.5	2	dB
I _s	OFF state isolation @ Pin<6dBm	25	30		dB
I _s	OFF state isolation @ 6≤Pin≤15dBm	15	17		dB
VSWR	Input and output matching		2:1		

ESD Protection : Electrostatic discharge sensitive device. Observe handling precautions !

Biasing conditions

Symbol	Parameter	Min	Typ	Max	Unit
Voff	OFF state control voltage	-3	2.5		V
Von	ON state control voltage		4.5		V
Ion	ON state control current		20	24	mA

Absolute Maximum Ratings (1)

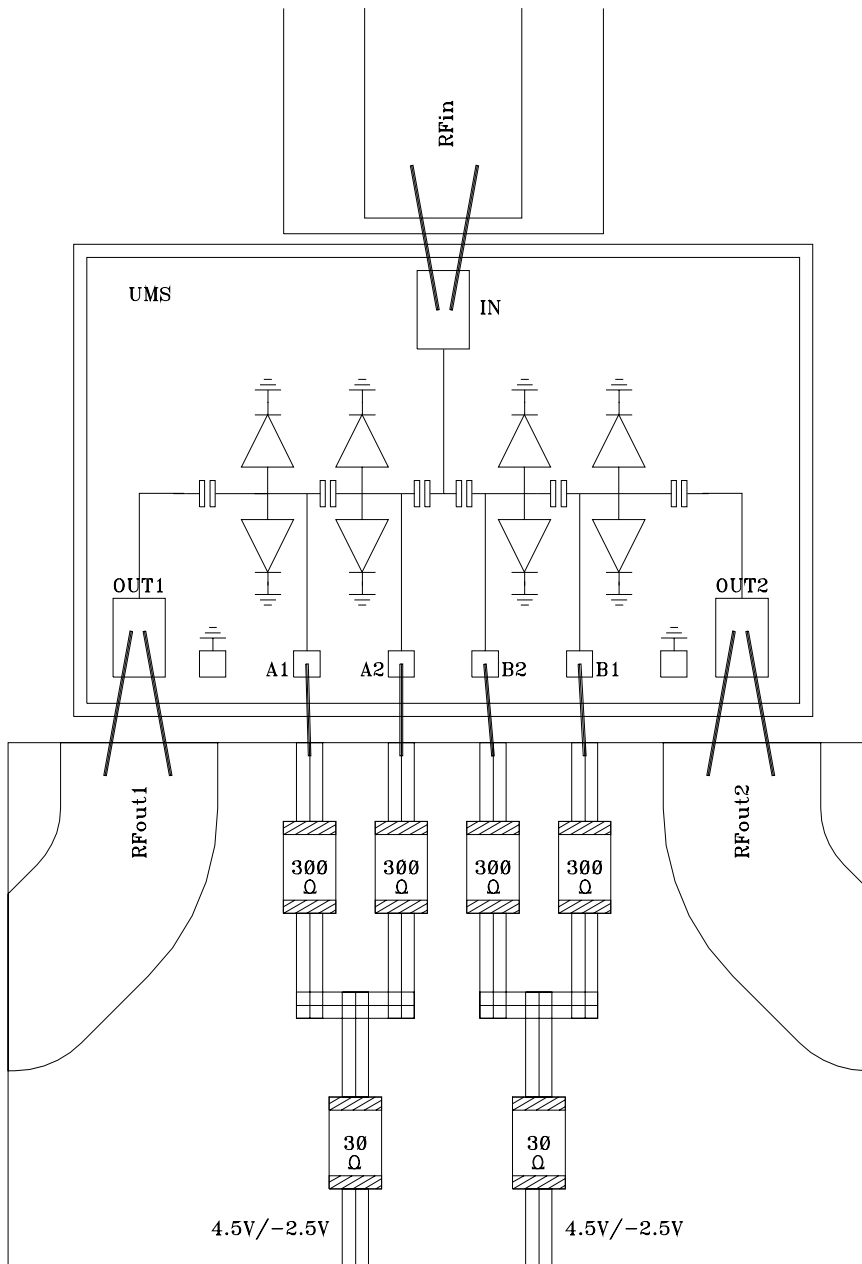
Tamb = +25°C

Symbol	Parameter	Values	Unit
Vak	Max. negative anode cathode voltage	-3.5	V
Ig	Max. forward current in Schottky diodes	30	mA
Pin	Maximum peak input power overdrive (2)	+18	dBm
Top	Operating temperature range	-40 to +85	°C
Tstg	Storage temperature range	-55 to +125	°C

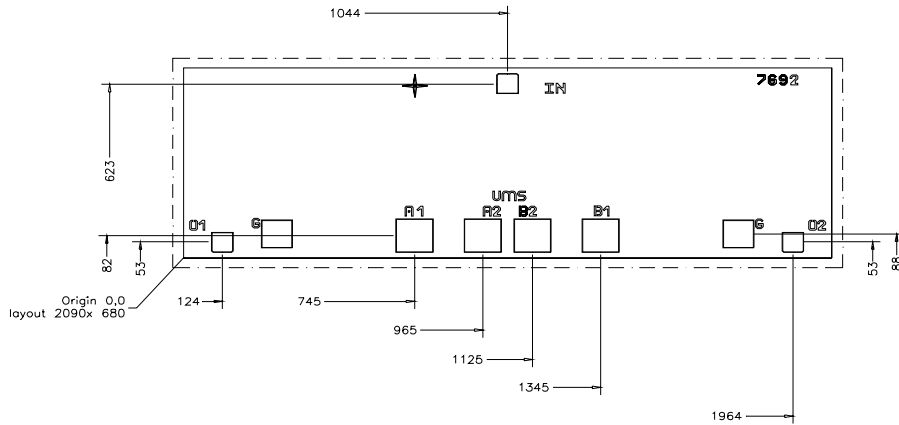
(1) Operation of this device above any of these parameters may cause permanent damage.

(2) Duration < 1s.

Chip Assembly and Mechanical Data



Note : 25µm diameter gold wire is to be preferred.



Bonding pad positions.

(Chip thickness : 100µm. All dimensions are in micrometers)

ORDERING INFORMATION

Chip form : CHS2190a99F/00

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