CEL California Eastern Laboratories

CG2409M2-EVAL

Evaluation Board

o Description

o Insertion Loss of Through Board

o Assembly Drawing

Description:

The CG2409M2-EVAL is evaluation board for CEL's CG2409M2 GaAs MMIC switch.

A DC blocking capacitor is required at all RF ports. On this board, an 8pF capacitor is used in accordance with the condition specified in the data sheet. The chosen capacitance value is optimized over the entire specified frequency range. For a narrow band application or an application where the operation frequency is outside the specified frequency range, the user may select a different capacitance value. Generally, the performance of the switch circuit is not sensitive, to a certain extent, to the DC blocking capacitance.

A 1000pF capacitor is used for DC bypass on all control lines. The user can make adjustment on its value according to the specific application requirement.

DC and RF Connections

All ports for DC and RF connections are labeled on the board. For the complete pin-out description, refer to the data sheet.

Board Material:

The board material is 20 mil thick Duroid 6002. Its dielectric constant is 2.94.

Switch Logic Table:
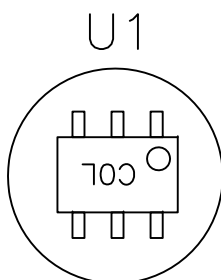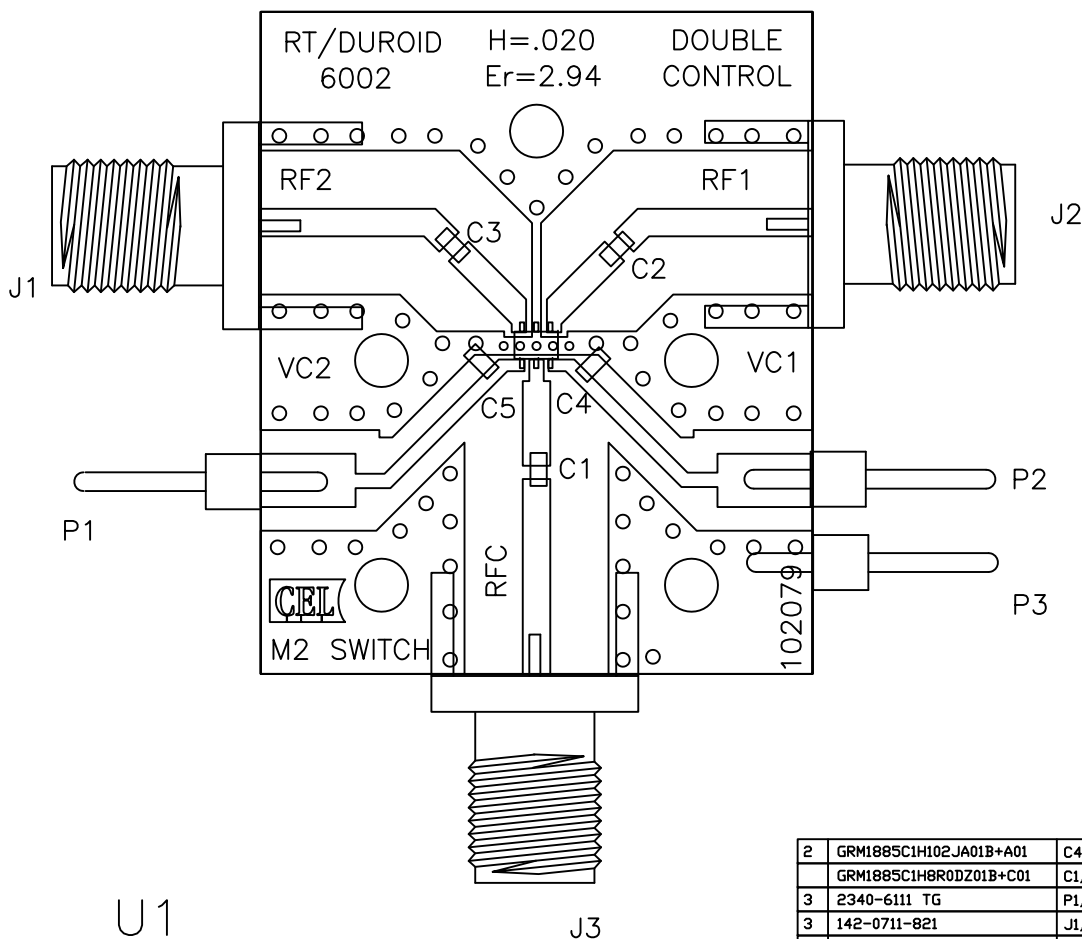
The following is the logic table for switch states.

VC1	VC2	RFC – RF1	RFC – RF2
H	L	ON	OFF
L	H	OFF	ON

Insertion Loss of Through Board:

The measured insertion loss of the evaluation board is a combination effect of the switch, RF connectors, board traces and series DC blocking capacitors. Since the insertion loss of the switch is generally small, the board loss should be subtracted from the measurement for more accurate evaluation of the switch performance. The table below lists the through-board loss at various frequencies.

INPUT FREQUENCY (GHz)	BOARD LOSS (dB)
0.5	0.05
1.0	0.07
1.5	0.11
2.0	0.12
2.5	0.13
3.8	0.18

RT/DUROID 6002 H=.020 Er=2.94 DOUBLE CONTROL

RF2 RF1

J1 J2

C3 C2

VC2 VC1

C5 C4

P1 P2

C1

RFC P3

102079

CEL M2 SWITCH

J3

U1

CEL

2	GRM1885C1H102JA01B+A01	C4,C5	0603 1000pF CAP MURATA	6
	GRM1885C1H8R0DZ01B+C01	C1,C2,C3	0603 8.0pF CAP MURATA	
3	2340-6111 TG	P1,P2,P3	PIN HEADER 3M	4
3	142-0711-821	J1,J2,J3	SMA FEMALE CONNECTOR	3
1	CG2409M2	U1	CEL GaAs Switch	2
1	CL-102079	DRAWING	COMPONENT LAYOUT DRAWING	1
QTY	PART NUMBER OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES
DECIMALS   ANGULAR
.XX± .01   ± 1°
.XXX± .005
DO NOT SCALE DRAWING
MATERIAL

FINISH

NEXT ASSY USED ON

APPLICATION

APPROVALS

Drawing by:
M. Dong   2/22/2017

Designed by:
M. Dong   2/22/2017

Checked by:

Project Engineer:

Quality Control:

CEL CALIFORNIA EASTERN LABS
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TITLE:
CG2409M2-EVAL
ASSEMBLY DRAWING

SIZE C
FSCM NO.
DWG NO. AD-102096
REV —

SCALE NONE RELEASE DATE PROTOTYPE SHEET 1 OF 1

Mouser Electronics

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