

CG2214M6-EVAL

Evaluation Board

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Description:

The CG2214M6-EVAL is evaluation board for CEL's CG2214M6 GaAs MMIC switch.

A DC blocking capacitor is required at all RF ports. On this board, a 56pF 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.

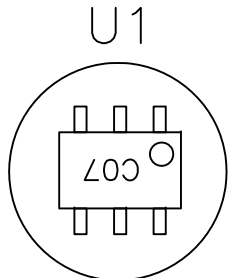
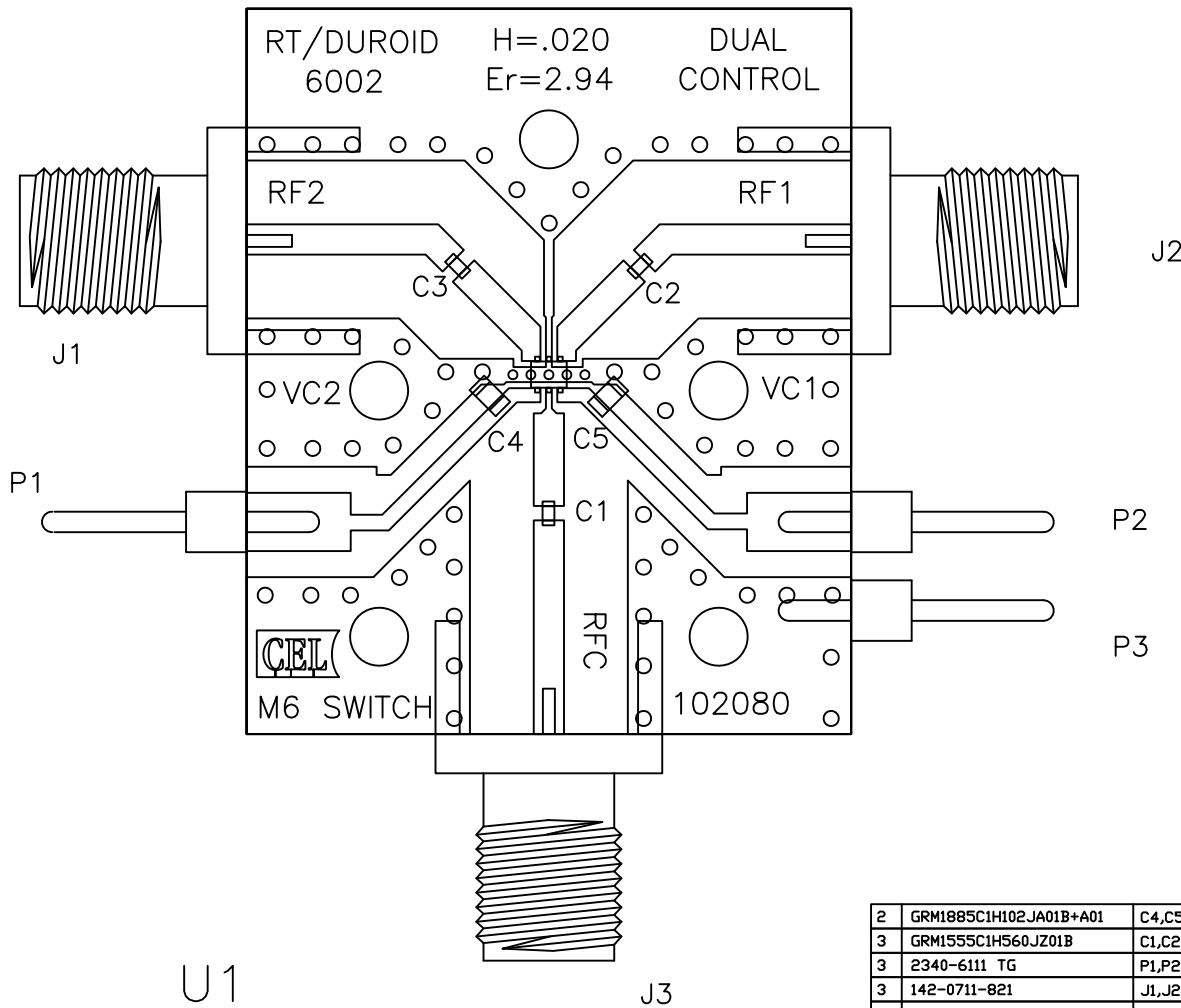
VC1	VC2	RFC – RF1	RFC – RF2
L	H	ON	OFF
H	L	OFF	ON

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
3.0	0.15

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



QTY	PART NUMBER OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL/SPECIFICATION	ITEM NO.
2	GRM1885C1H102JA01B+A01	C4,C5	0603 1000pF CAP MURATA	6
3	GRM1555C1H560JZ01B	C1,C2,C3	0402 56pF CAP +/-5% MURATA	5
3	2340-6111 TG	P1,P2,P3	PIN HEADER 3M	4
3	142-0711-821	J1,J2,J3	SMA FEMALE CONNECTOR	3
1	CG2214M6	U1	CEL GaAs Switch	2
1	CL-102080	DRAWING	COMPONENT LAYOUT DRAWING	1

PARTS LIST

NEXT ASSY	USED ON	APPLICATION

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

APPROVALS	
Drawing by: M. Dong	2016/5/2
Designed by: M. Dong	2016/5/2
Checked by:	
Project Engineer:	
Quality Control:	

CALIFORNIA EASTERN LABS 4590 PATRICK HENRY DR. SANTA CLARA CA. 95054			
TITLE: CG2214M6-EVAL ASSEMBLY DRAWING			
SIZE C	FSCM NO.	DWG NO. AD-102080	REV -
SCALE NONE	RELEASE DATE	PROTOTYPE	SHEET 1 OF 1