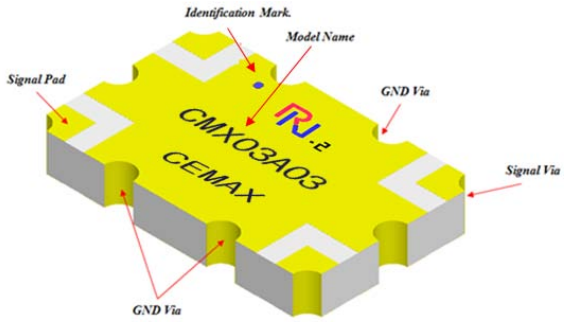
1. Description

. Part number: CMX03A03



. Features

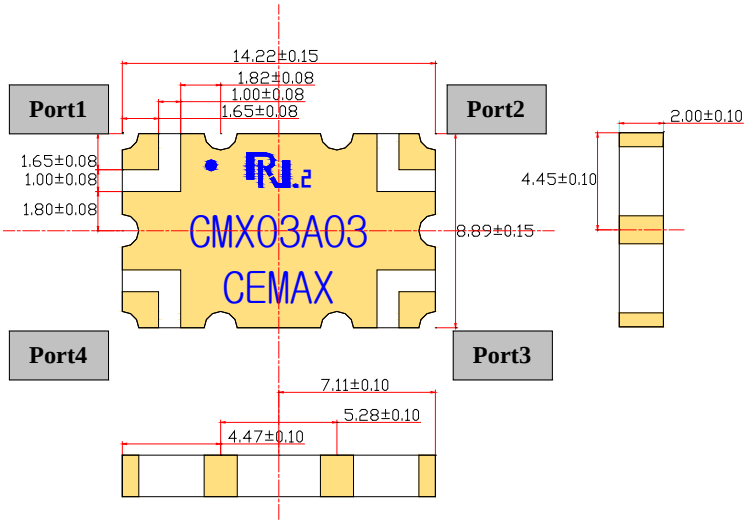
- Surface mount type
- **RoHS** Compliance (Pb Free)
- LTCC base (Er = 6)
- Low loss Silver (Ag) Conductor
- Gold (Au) plating finish

2. Electrical Specification

Freq. (MHz)	Amplitude Balance max (dB)	Isolation min (dB)	Insertion Loss max (dB)	VSWR Max	Phase (degrees)
250 – 470	± 0.80	-20	-0.30	1.20	90 ± 3
250 – 300	± 0.50	-25	-0.20	1.10	90 ± 2
300 – 450	± 0.50	-20	-0.25	1.20	90 ± 3
450 – 470	± 0.80	-20	-0.30	1.20	90 ± 3

Power Capacity Avg. (Watt)	Characteristic Imp. (ohm)	Operating Temp. (℃)
200	50	-55 to +125

3. Mechanical Specification



[Unit = mm]

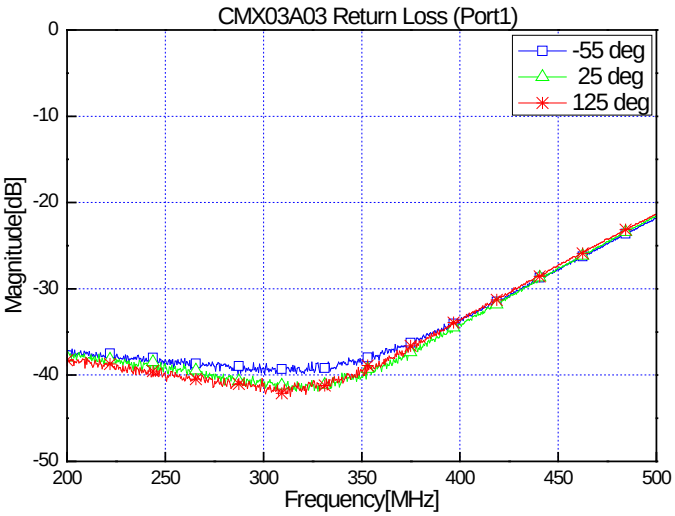
4. Schematic Drawing

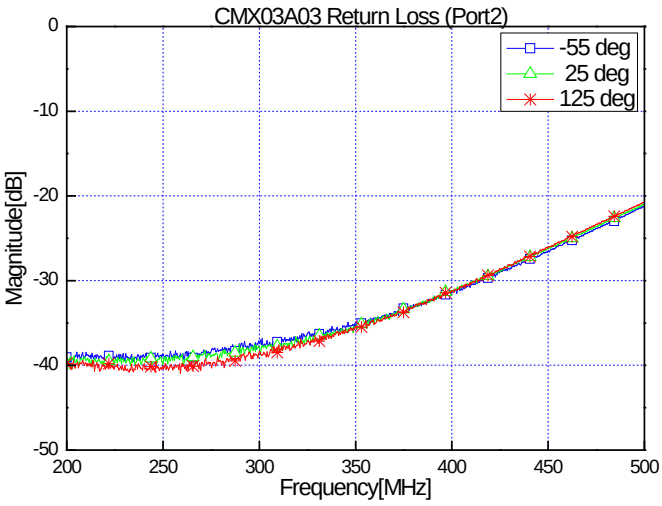
5. Port Configuration

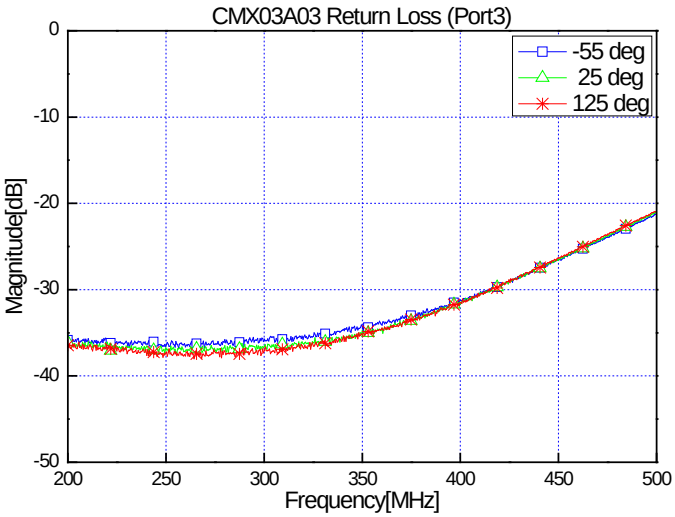
Configuration	Port 1	Port 2	Port 3	Port 4
Case 1.	Input	Isolated	Output -3dB, -90˚	Coupling -3dB, 0˚
Case 2.	Isolated	Input	Coupling -3dB, 0˚	Output -3dB, -90˚
Case 3.	Output -3dB, -90˚	Coupling -3dB, 0˚	Input	Isolated
Case 4.	Coupling -3dB, 0˚	Output -3dB, -90˚	Isolated	Input

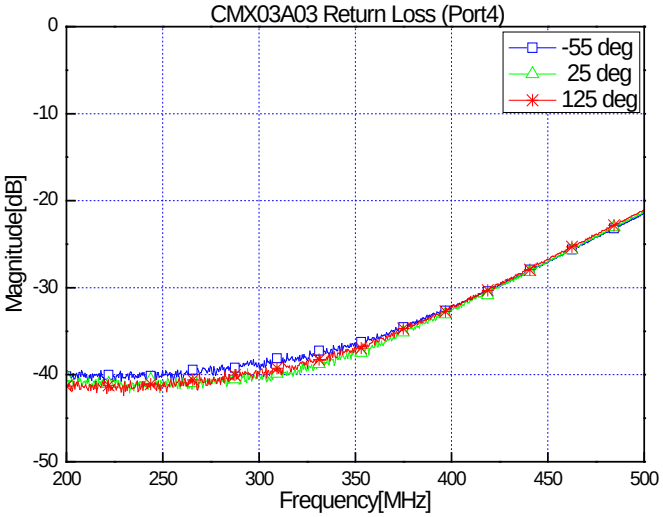
* Once Port 1 is determined, the other three ports are defined automatically.

6. Operating Temperature Curve (1)

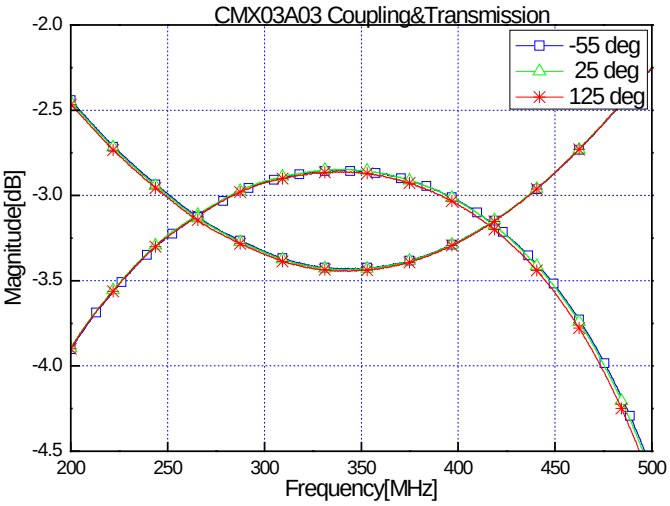


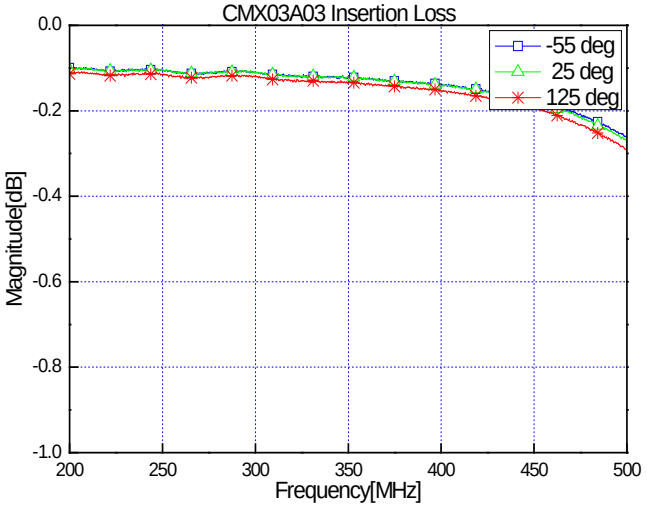


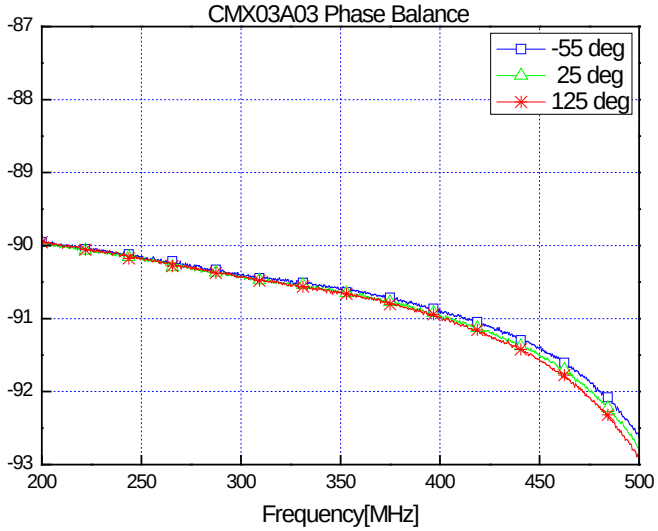


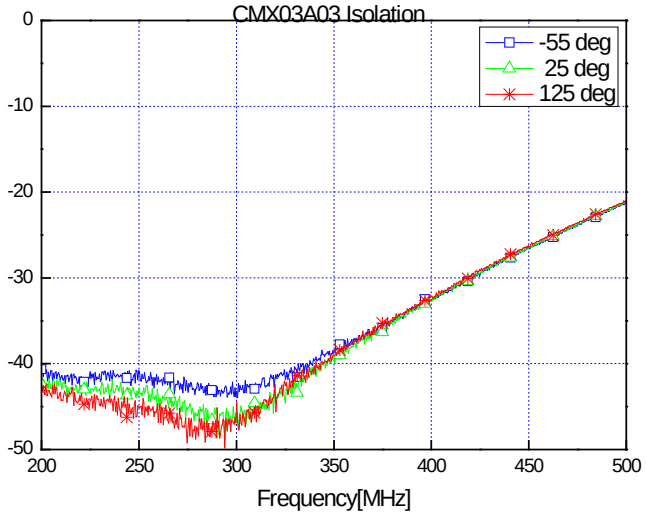


7. Operating Temperature Curve (2)

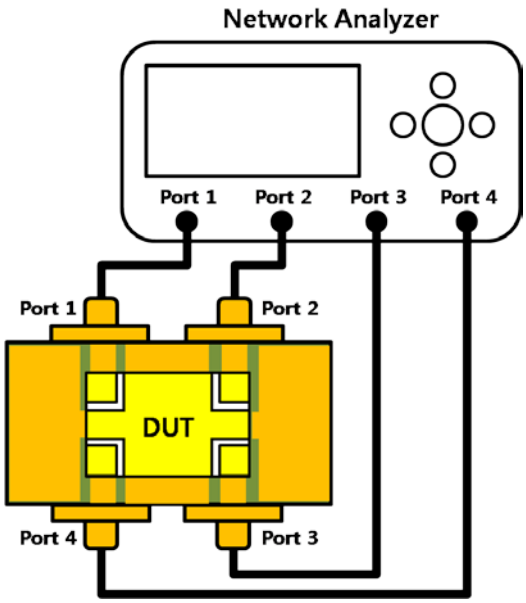


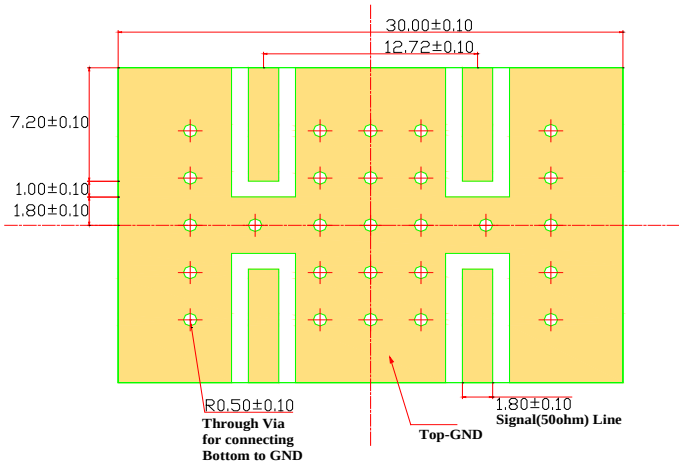






8. Test Method





* RN2 Test Board
- Taconic RF35 board
- Dielectric constant 3.5
- Board thickness 0.8mm
- Copper 1 Oz

To recognize the specified performance of the part, it has to be evaluated on the RN2 test board shown above.

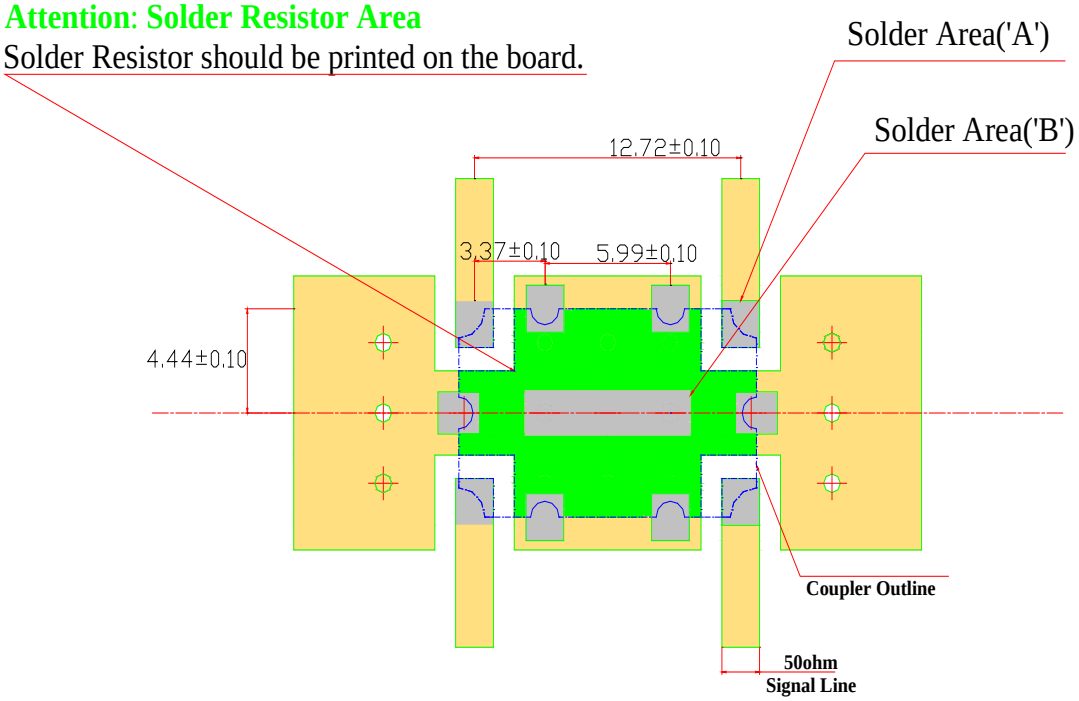
1. Calibrate the network analyzer
2. Measure the data of **Return Loss** through Port 1 to Port 1 (S11)
3. Measure the data of **Coupling** through Port 1 to Port 4 (S41)
4. Measure the data of **Transmission** through Port 1 to Port 3 (S31)
5. Measure the data of **Isolation** through Port 1 to Port 2 (S21)
6. Calculate **Insertion Loss** and **Amplitude Balance** in function of the below mathematical formula.

Parameter	Mathematical formula
Insertion Loss (dB)	$10 \cdot \log\left(\frac{P_{in}}{P_{cou}+P_{out}}\right)$
Amplitude Balance (dB)	$10 \cdot \log\left(\frac{P_{cou}}{\frac{P_{cou}+P_{out}}{2}}\right)$

9. Recommended PCB layout and Solder mask pattern

PROJECTION	No.	DATE	REVISION & DESCRIPTION	SIGNATURE REVIEWED	SIGNATURE CHECKED
	1	2011.07.21	New - Drawing		
	2				
	3				

Attention: Solder Resistor Area
Solder Resistor should be printed on the board.



NOTE.
1. Test Solder Cream : SAC-305 (Alpa Metal)
2. Lead Free Solder Alloy : Sn/Ag/Cu Ratio Of 96.5/3.0/0.5
3. Solder Area ('A') Demension : 2.0 mm by 1.8 mm
4. Solder Area ('B') Demension : 2.0 mm by 8.0 mm

No.	DESCRIPTION	UNIT QUANTITY	TOTAL	PERUNIT	TOTAL

TITLE	A size - Recommended Solder Quantity &Area	RN2 DWG No.	11-0721-01	SCALE	1/1		
				SIZE	A4	DIMENSION	mm