XT3302

GaAs MMIC 6-BIT DIGITAL PHASE SHIFTER
1.2～1.6GHz

Rev 2.0

Features

- Frequency：1.2～1.6GHz
- RMS of Phase Accuracy：1.4°
- Low Insertion Loss：5dB
- Negative Voltage Control：0/-5V
- Die Size:3.1mm×1.25mm×0.1mm

Typical Applications

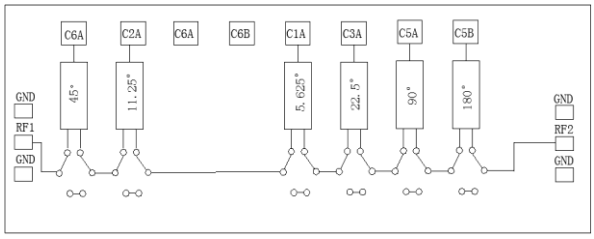
- EW
- Military Radar and Weather Radar
- SATCOM
- Beamforming
- Phase Cancellation

General Description

XT3302 is a 6-bit digital phase shifter which works from 1.2 to 1.6GHz, providing 360 degrees of phase coverage with a LSB of 5.625 degrees.

XT3302 features very low RMS phase error of 1.4degrees and extremely low insertion loss variation of ±0.5 dB across all phase states. This high accuracy phase shifter is controlled with negative control logic of 0/-5V.

Functional Diagram



Electrical Performance (T_A=+25℃ , Control Voltage=0/-5V,Z_O=-50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency	1.2～1.6			GHz
Input VSWR	—	1.3	—	:1
Output VSWR	—	1.3	—	:1
Insertion Loss	—	-5	—	dB
IL Variation	—	0.8	—	dB
Phase Accuracy	-2.2	—	3	°
RMS of Phase Accuracy	—	1.4	—	°

Truth Table (0 : 0V , 1 : -5V)

Phase	C1A	C2A	C3A	C4A	C5A	C5B	C6A	C6B
REF	0	0	0	0	0	1	0	1
-5.625°	1	0	0	0	0	1	0	1
-11.25°	0	1	0	0	0	1	0	1
-22.5°	0	0	1	0	0	1	0	1
-45°	0	0	0	1	0	1	0	1
-90°	0	0	0	0	1	0	0	1
-180°	0	0	0	0	0	1	1	0
-354.375°	1	1	1	1	1	0	1	0

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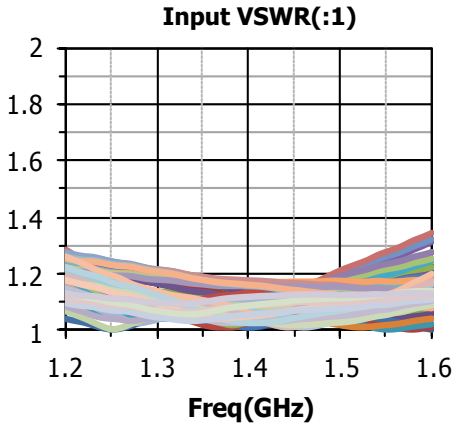
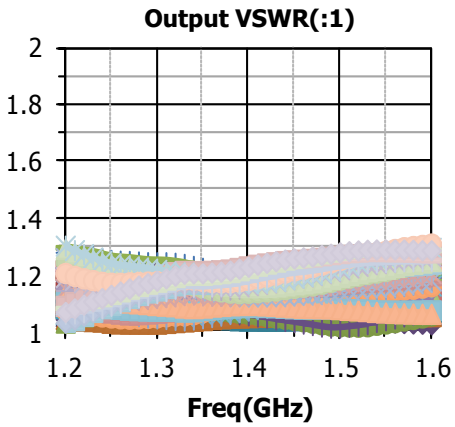
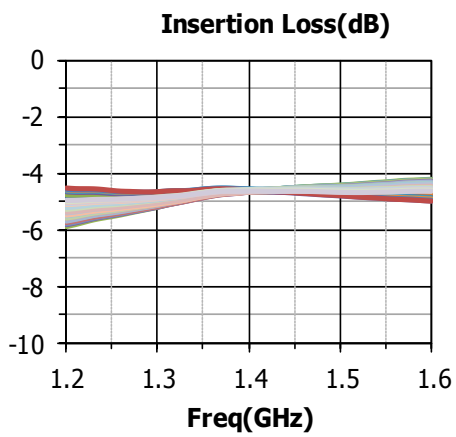
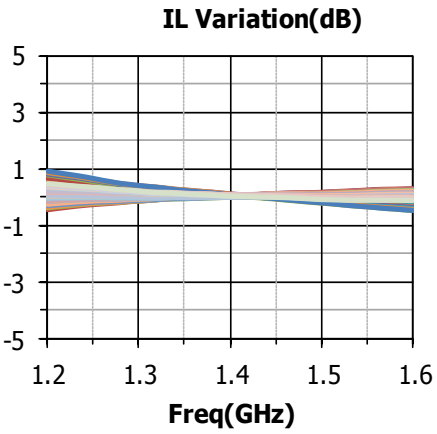
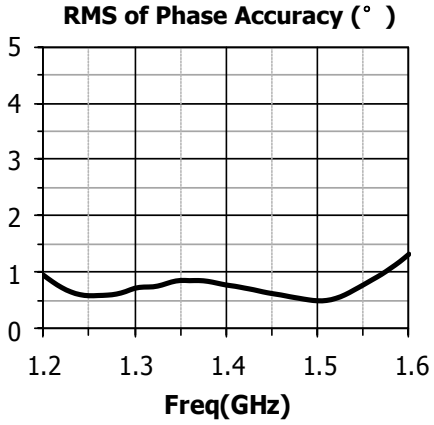
Typical Performance Curve







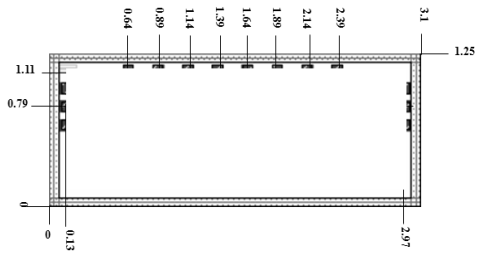




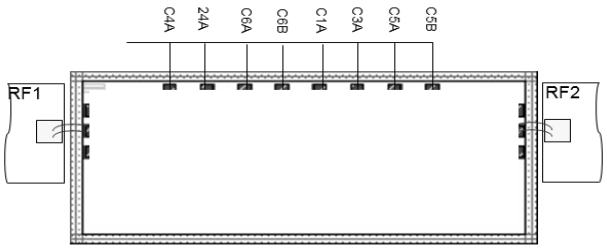
Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55℃～+85℃
Negative Voltage Control	0/-5V	Storage Temperature	-65℃～+150℃

Die Outline
(all dimensions in mm)



Assembly Diagram



Attention:

GaAs MMIC devices are susceptible to damage from electrostatic discharge. Proper precautions should be observed during handling, assembly and test.