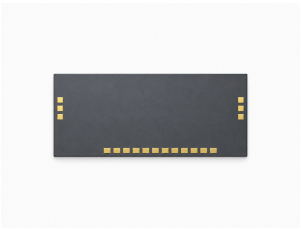
1200–1400 MHz 6-Bit GaAs MMIC Digital Phase Shifter Die

LCI-PS-1200-1400-6B-D is a 6-bit GaAs pHEMT digital phase-shifter bare die for 1200–1400 MHz, providing stepped RF phase control.

RMS phase error: 0.5 ° (minimum) / 0.7 ° (typical) / 1 ° (maximum); Phase shift range: 5.625 ° (minimum) / 354.375 ° (maximum); Insertion loss: ≈5 dB. Die dimensions: 4 × 1.7 × 0.1 mm.



RF characteristics

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating frequency	-	1200	-	1400	-	MHz
Phase shift range	-	5.625	-	354.375	-	°
RMS phase error	-	0.5	0.7	1	-	°
Phase-induced amplitude variation	-	-	±0.5	-	-	dB
Input VSWR	-	-	1.4	-	-	-
Output VSWR	-	-	1.4	-	-	-
Insertion loss	-	-	-	-	≈5	dB

DC bias and current

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Control voltage	-	-	-	-	0 / -5	V
Phase step	-	-	-	-	5.625	°

Absolute limits

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum input power	-	-	-	20	dBm

Environmental specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Storage temperature	-	-65	-	150	°C
Operating temperature	-	-55	-	85	°C

Bond-pad assignments

Pins	Symbol	Function	Notes
1, 3, 4, 6	GND	Ground; no wire bond required	-
2	RF_in	RF input	-
5	RF_out	RF output	-
7	P1	Phase control	5.625°; 0 / −5 V
8	P2	Phase control	5.625°; 0 / −5 V
9	P3	Phase control	11.25°; 0 / −5 V
10	P4	Phase control	11.25°; 0 / −5 V
11	P5	Phase control	22.5°; 0 / −5 V
12	P6	Phase control	22.5°; 0 / −5 V
13	P7	Phase control	45°; 0 / −5 V
14	P8	Phase control	45°; 0 / −5 V
15	P9	Phase control	90°; 0 / −5 V
16	P10	Phase control	90°; 0 / −5 V
17	P11	Phase control	180°; 0 / −5 V
18	P12	Phase control	180°; 0 / −5 V

Control truth table

State	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Reference state	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V
5.625°	0 V	−5 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V
11.25°	−5 V	0 V	0 V	−5 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V
22.5°	−5 V	0 V	−5 V	0 V	0 V	−5 V	−5 V	0 V	−5 V	0 V	−5 V	0 V
45°	−5 V	0 V	−5 V	0 V	−5 V	0 V	0 V	−5 V	−5 V	0 V	−5 V	0 V
90°	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	0 V	−5 V	−5 V	0 V
180°	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	0 V	−5 V

Die dimensions

Parameter	Value	Unit
Die dimensions	4 × 1.7 × 0.1	mm

Partial dimensional reference in mm. Fabrication and wire bonding require complete drawings.

LCI-PS-1200-1400-6B-D



X (mm)
P12 (18): 1.102
P1 (7): 3.302

Y (mm)
RFin / RFout: 1.0105

4.000 × 1.700 × 0.100 mm
X, Y: ±0.050 mm
X → · Y ↑ · X, Y: mm

Current publication record · 1.4 · 2026-11-10. Product description or editorial content updated. Replaces revision 1.3.

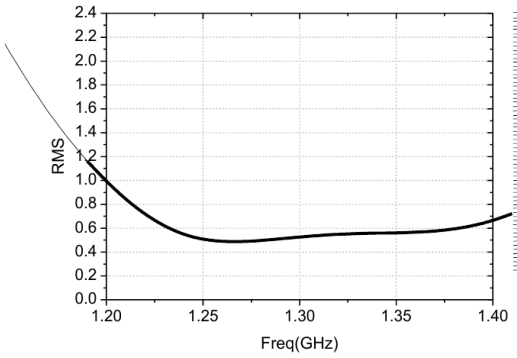
Performance curves

Each performance plot applies to its stated operating conditions.

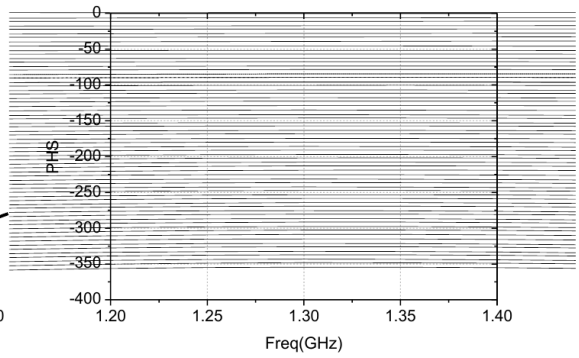
Insertion loss; Input matching; Output matching; Phase shift; RMS phase error; Phase-induced amplitude variation.

典型曲线

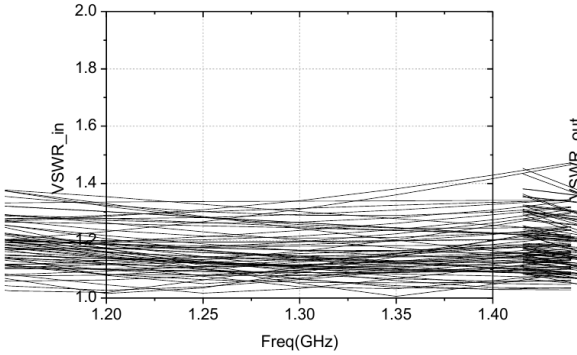
64态移相均方根误差vs.频率



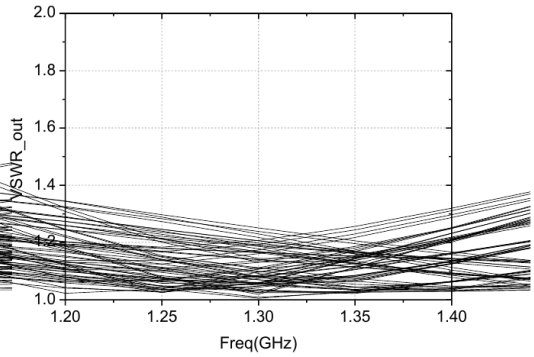
64态相移vs.频率



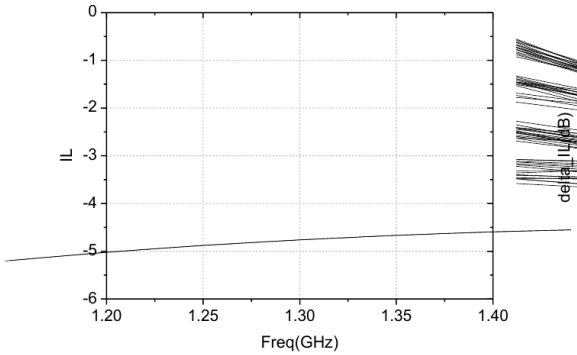
输入电压驻波比vs.频率



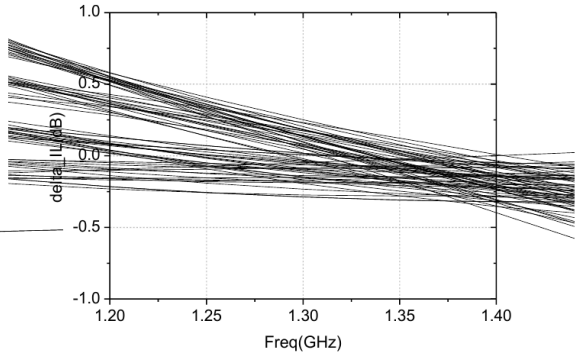
输出电压驻波比vs.频率



基态插入损耗



64态寄生调幅vs.频率



Document notice

Specifications are subject to revision. Before design release, confirm the current document revision and product-specific requirements with LCRF. The approved quotation and order documentation define the supplied configuration.