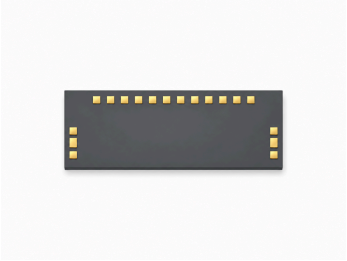
25000–33000 MHz 6-Bit GaAs MMIC Digital Phase Shifter Die

RMS phase error: 1.6 ° (typical); Insertion loss: 9.5 dB (typical); Phase shift range: 5.625 ° (minimum) / 354.375 ° (maximum). Die dimensions: 3.1 × 1.1 × 0.1 mm.



RF characteristics · TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating frequency	-	25000	-	33000	25000–33000	MHz
Insertion loss	-	-	9.5	-	-	dB
Phase shift range	-	5.625	-	354.375	-	°
RMS phase error	-	-	1.6	-	-	°
Phase-induced amplitude variation	-	-	±0.5	-	-	dB
Input VSWR	-	-	1.3	-	-	-
Output VSWR	-	-	1.5	-	-	-

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
Minimum negative supply voltage	-	-6	-	-	V
Maximum control voltage	-	-	-	0.5	V
Maximum input power	-	-	-	20	dBm

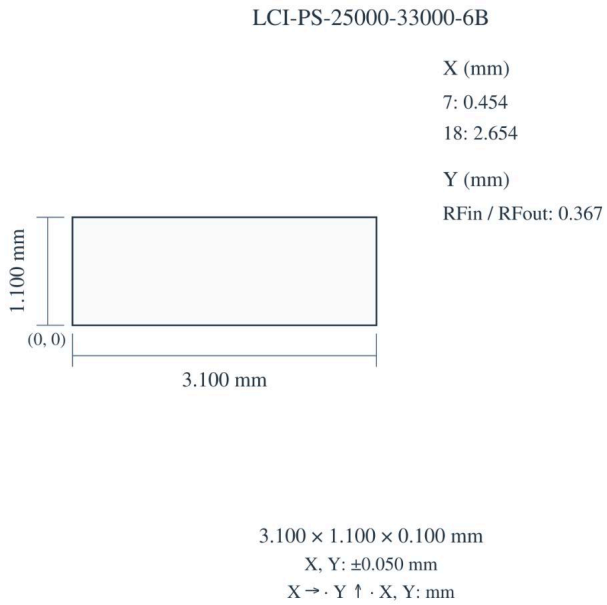
Environmental specifications

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

Die dimensions

Parameter	Value	Unit
Die dimensions	3.1 × 1.1 × 0.1	mm

Mechanical Outline



All dimensions are in mm [in].

Bond-pad assignments

Pins	Symbol	Function	Notes
1	RF_in	RF input	-
2	RF_out	RF output	-
3, 4, 5, 6	GND	Ground; no wire bond required	-
7	1B	Phase control	0 / −5 V
8	1A	Phase control	0 / −5 V
9	2B	Phase control	0 / −5 V
10	2A	Phase control	0 / −5 V
11	3B	Phase control	0 / −5 V
12	3A	Phase control	0 / −5 V
13	4B	Phase control	0 / −5 V
14	4A	Phase control	0 / −5 V
15	5B	Phase control	0 / −5 V
16	5A	Phase control	0 / −5 V
17	6B	Phase control	0 / −5 V

Bond-pad assignments

Pins	Symbol	Function	Notes
18	6A	Phase control	0 / −5 V

Control truth table

State	1B	1A	2B	2A	3B	3A	4B	4A	5B	5A	6B	6A
Reference state	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V
5.625°	−5 V	0 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V
11.25°	0 V	−5 V	−5 V	0 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V
22.5°	0 V	−5 V	0 V	−5 V	−5 V	0 V	0 V	−5 V	0 V	−5 V	0 V	−5 V
45°	0 V	−5 V	0 V	−5 V	0 V	−5 V	−5 V	0 V	0 V	−5 V	0 V	−5 V
90°	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	−5 V	0 V	0 V	−5 V
180°	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	−5 V	0 V
354.375°	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V	−5 V	0 V

Current publication record · 1.3 · 2026-10-27. Product description or editorial content updated. Replaces revision 1.2.

Mechanical reference scope

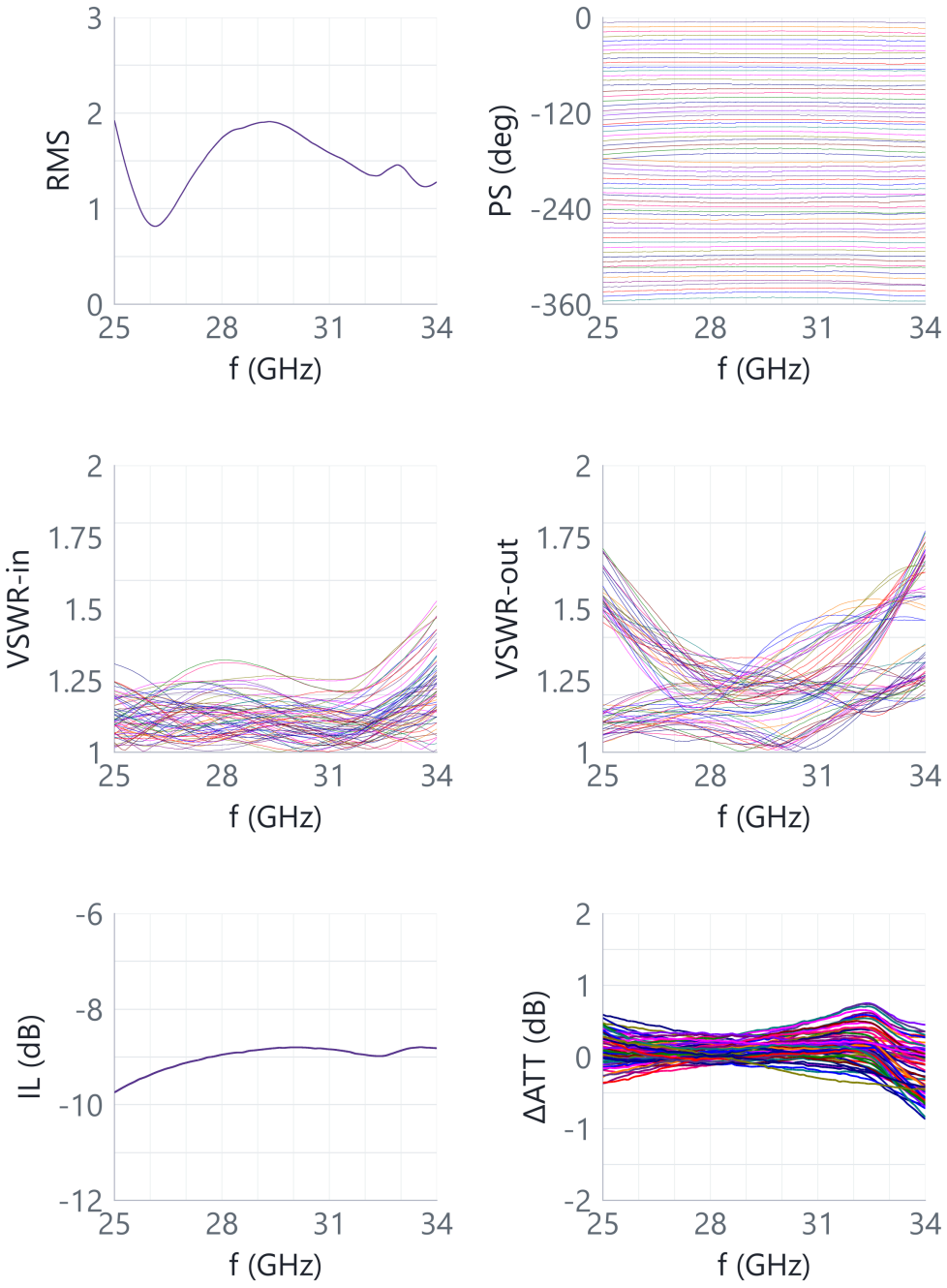
Source-based dimensional guide in mm. Partial information; not a complete fabrication or wire-bonding drawing.

Performance curves

Plots from the source datasheet. Read each figure with its stated operating conditions.

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

Redrawn from the source figure; readings are approximate. The source does not state the unit of the RMS ordinate.



Source

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.