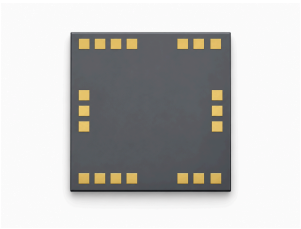
100–20000 MHz GaAs SP3T MMIC Switch Die — IL ≤ 2.8 dB (2000–20000 MHz)

LCI-SW-100-20000-SP3T-D · 100–20000 MHz · GaAs SP3T MMIC Switch Die.



The RF table specifies: Insertion loss (100–2000 MHz) ≤ 1.4 dB; Isolation (100–2000 MHz) ≤ 65 dB. RF test conditions: TA = +25 °C.

Die dimensions: 1.5 × 1.55 × 0.1 mm.

A1 / B1 (V) = 0; A2 / B2 (V) = 0; RF = RFin ↔ RF1

A1 / B1 (V) = 0; A2 / B2 (V) = 5; RF = RFin ↔ RF2

A1 / B1 (V) = 5; A2 / B2 (V) = 5; RF = RFin ↔ RF3

RF characteristics

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Value	Unit
Operating frequency	f	100	-	20000	-	MHz
Insertion loss (100–2000 MHz)	-	-	-	1.4	f = 100–2000 MHz	dB
Insertion loss (2000–20000 MHz)	-	-	-	2.8	f = 2000–20000 MHz	dB
Isolation (100–2000 MHz)	-	-	-	65	f = 100–2000 MHz	dB
Isolation (2000–20000 MHz)	-	-	-	43	f = 2000–20000 MHz	dB
Input/output VSWR (on)	-	-	1.2	-	-	-
Input/output VSWR (off)	-	-	1.4	-	-	-
Input power at 1 dB compression	-	23	-	-	-	dBm

Control voltages

TA = +25 °C

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Negative-supply quiescent current	-	-	-	0.002	A
Input drive current [1]	-	-	0.0002	-	A
High-level input voltage	-	3	-	5.5	V
Low-level input voltage	-	0	-	0.8	V
Negative supply voltage	-	-5.5	-5	-4.5	V

[1] TTL = +5 V

Absolute limits

Absolute limits; these are not normal operating targets.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Maximum input power	-	-	-	25	dBm
Storage temperature	-	-65	-	150	°C
Operating temperature	-	-55	-	125	°C
Minimum negative supply voltage	-	-6	-	-	V

Die dimensions

Parameter	Value	Unit
Die dimensions	1.5 × 1.55 × 0.1	mm
Plan-view outline tolerance	±100	µm

Bond-pad assignments

Pins	Symbol	mm
2	RFin	0.100 × 0.100
9	RF1	0.100 × 0.100
12	RF2	0.100 × 0.100
15	RF3	0.100 × 0.100
4, 20	VEE	0.100 × 0.100
5, 7	A1	0.100 × 0.100
17, 19	B1	0.100 × 0.100
6	A2	0.100 × 0.100
18	B2	0.100 × 0.100
1, 3, 8, 10, 11, 13, 14, 16	GND	0.100 × 0.100

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Integration notes

A1 / B1 (V) = 0; A2 / B2 (V) = 0; RF = RFin ↔ RF1 A1 / B1 (V) = 0; A2 / B2 (V) = 5; RF = RFin ↔ RF2 A1 / B1 (V) = 5; A2 / B2 (V) = 5; RF = RFin ↔ RF3

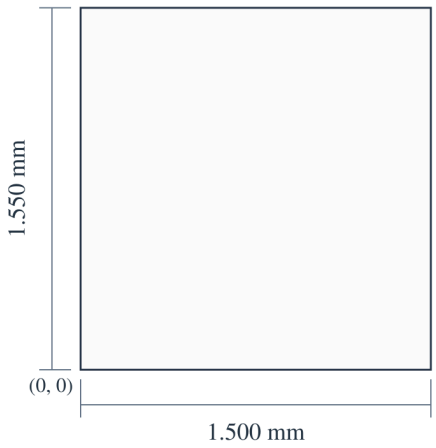
Pad connection notes

The listed GND pads are test ground pads. For VEE, use one of pads 4, 20; only one is required. For A1 / B1, use one of pads 5, 7, 17, 19; only one is required. For A2 / B2, use one of pads 6, 18; only one is required.

Mechanical Outline

Outline and dimensioned coordinates in mm. Use this drawing as a dimensional reference. Fabrication and wire bonding require complete drawings.

LCI-SW-100-20000-SP3T-D



X (mm)
VEE: 0.125
A1 / B1 (5, 19): 0.275
A2 / B2: 0.425
A1 / B1 (7, 17): 0.575
RF1 / RF3: 1.200

Y (mm)
RFin / RF2: 0.775

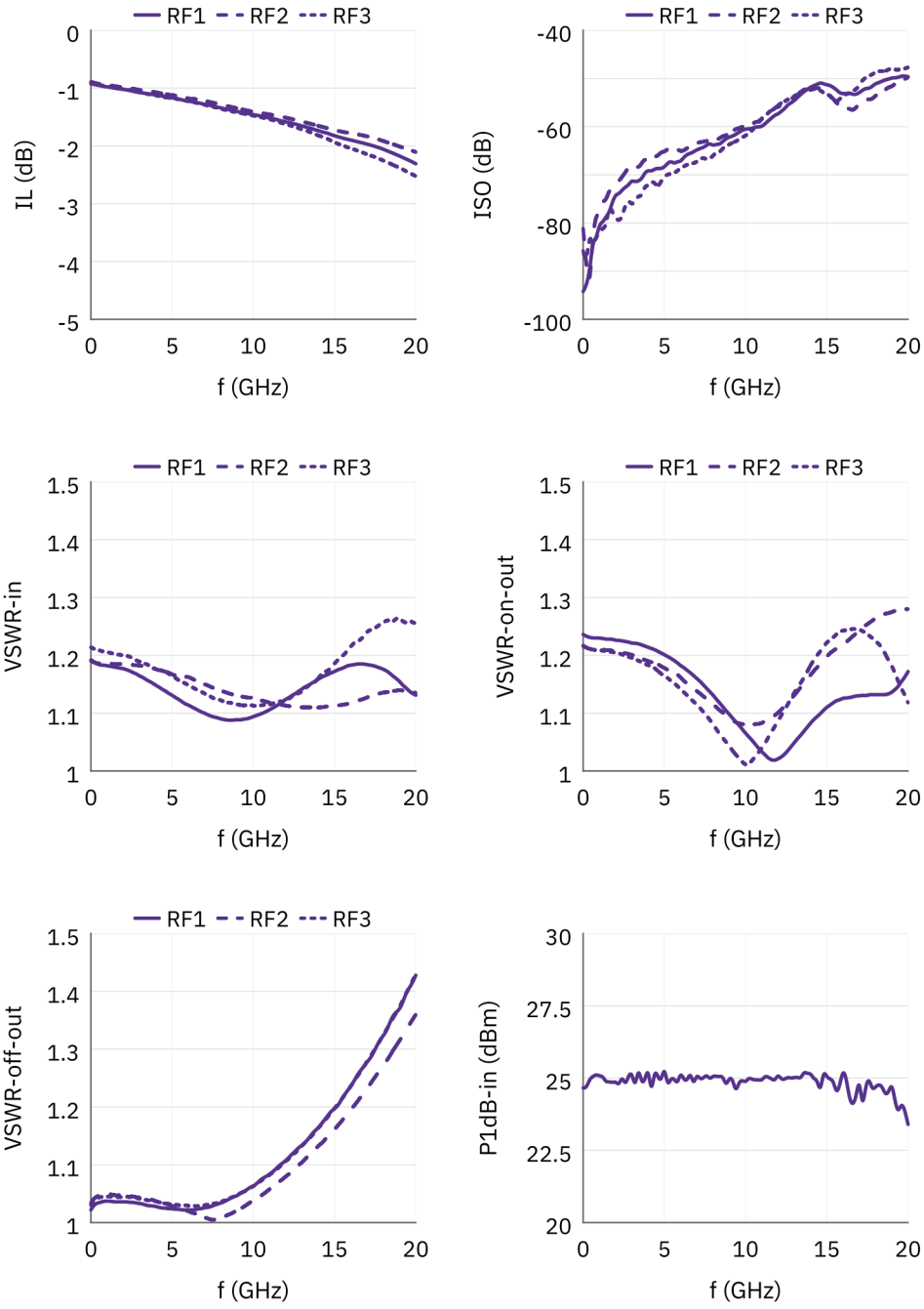
1.500 × 1.550 × 0.100 mm
X, Y: ±0.100 mm
X → · Y ↑ · X, Y: mm

Performance curves

Each performance plot applies to its stated operating conditions.

Output matching; Input matching; Isolation; Insertion loss; Input power at 1 dB compression.

Readings are approximate.



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.