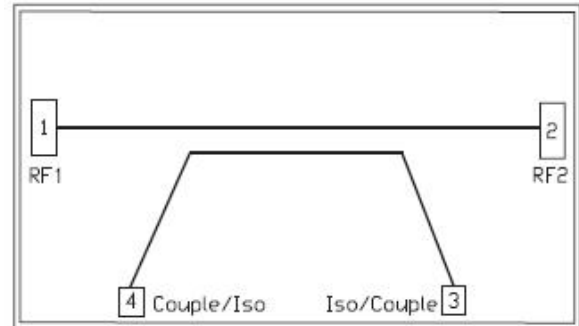


GaAs MMIC Monolithic Integrated Directional Coupler , 4-20GHz

Performance characteristics

- Frequency range: 4 -20 GHz
- Insertion loss : 0.45 dB (typ.)
- Coupling: 14.5dB
- Coupling flatness: 4.5dB
- VSWR: 1.2
- 50Ohm input / output
- 100% on-wafer testing
- Chip size: 1.925 x 1.66 x 0.1mm

Functional Block Diagram



Product Introduction

The GDC-042015 single-chip coupler chip covers a frequency range of 4 GHz to 20 GHz , with a coupling degree of 14.5 dB . The chip has an insertion loss of 0.45 dB , a coupling flatness of 4.5 dB , and a port VSWR of 1.2 in the entire operating frequency band. The chip uses an on-chip through-hole metallization process to ensure good grounding, does not require additional grounding measures, and is simple and convenient to use.

Use restriction parameter ¹

Maximum input power	+40dBm
Operating temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of these maximum limits may cause permanent damage.

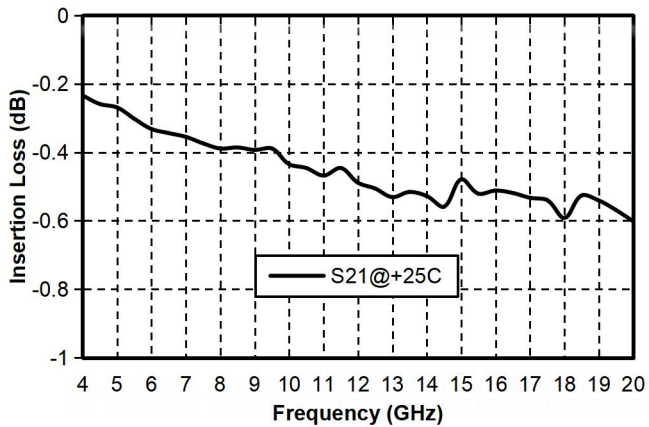
Electrical performance parameters (TA = +25°C)

Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	4-20			GHz
Insertion loss		0.45	0.65	dB
Coupling	12.5	14.5	17.5	dB
Input return loss	21	26	-	dB
Output return loss	21	25	-	dB
Coupled output return loss	12	15	-	dB
Isolation		23		dB

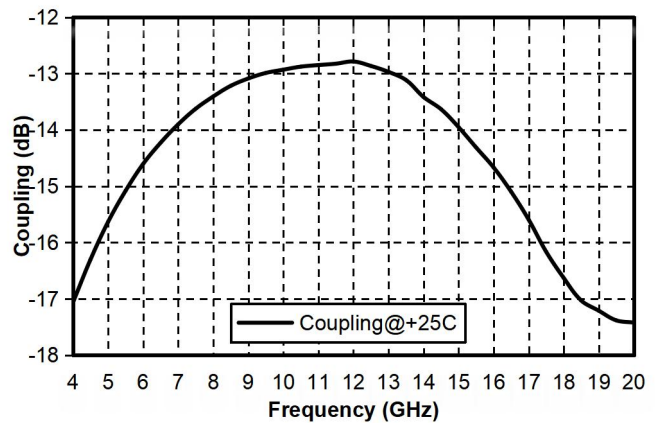
GaAs MMIC Monolithic Integrated Directional Coupler , 4-20GHz

Main index test curve

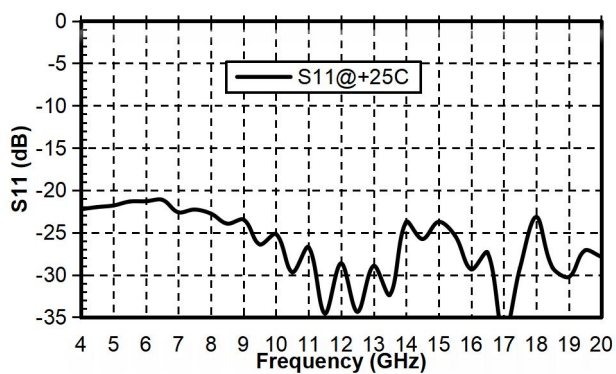
Insertion Loss vs. Operating Frequency



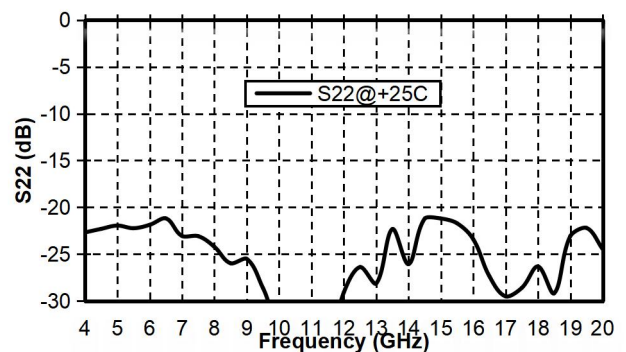
Coupling Degree vs. Operating Frequency



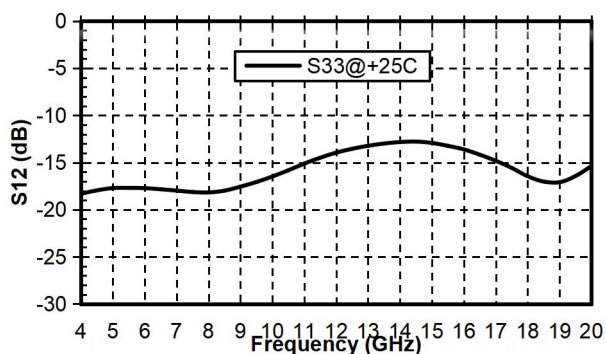
Input Return Loss vs. Operating Frequency



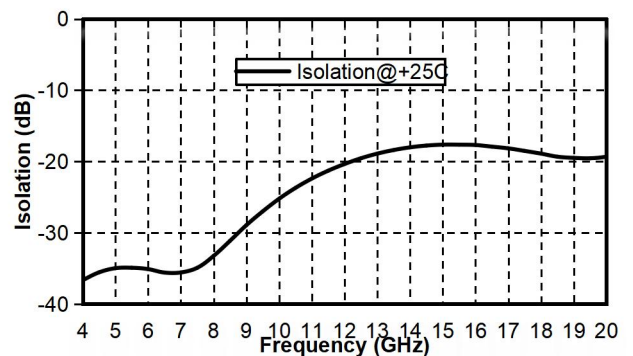
Output Return Loss vs. Operating Frequency



Coupled Output Return Loss vs. Operating Frequency

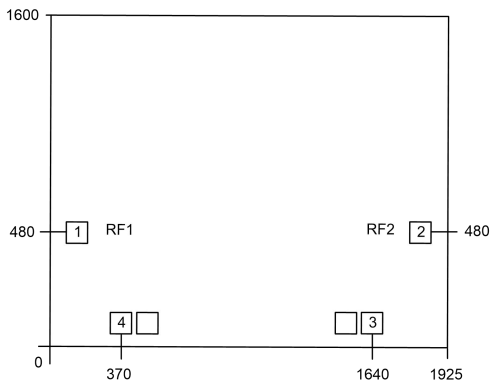


Isolation vs. Operating Frequency



GaAs MMIC Monolithic Integrated Directional Coupler , 4-20GHz

Appearance structure ²



【 2 】 All units in the figure are micrometers

Bonding point definition Ω		
Bonding point number	Function Symbol	Functional Description
1	RF 1	RF signal input /output terminal
2	RF2	RF signal input /output terminal
3	Coupling/Termination	Coupled RF signal output and /or load
4	Coupling/Termination	Coupled RF signal output and /or load
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

* At the coupled RF signal output end, users can choose the internal integrated load of the chip or connect an external load.

