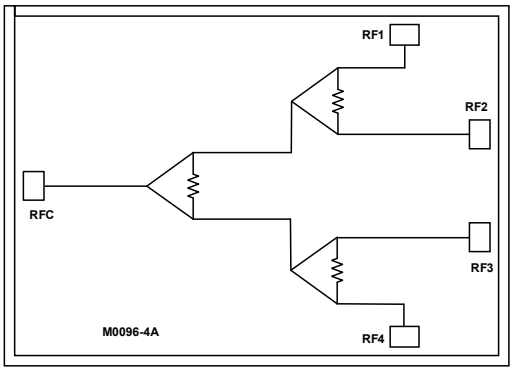
1. Description

- The M0096-4A is a 4-way 0° splitter/combiner fabricated on GaAs IPD process. It operates over 2-18GHz, provides insertion loss of 2.4dB.



M0096-4A-PDS-F01

Figure 1. M0096-4A Functional Block Diagram

2. Applications

- Phased Array
- Microwave Radio & VSAT
- Military & Space

3. Features[1]

- Frequency Range: 2-18GHz
- Insertion Loss: 2.4dB
- Isolation: 12.5dB
- Input/Output Return Loss: -12dB
- Input/Output Impedance: 50Ohm
- Die Size: 2.40 x 1.70 x 0.16mm

[1] Fixture Test

4. Brief Typical Performance

Table 1. Brief Typical Performance

Parameter	2-18GHz	Units
Insertion Loss	2.4	dB
Isolation	12	dB
Input Return Loss	-12	dB
Output Return Loss	-11.5	dB

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5. Recommended Operating Conditions

Table 2. Recommended Operating Conditions

Parameter	Min.	Typ.	Max.	Units
Operating Temperature Range	-55	25	125	°C

6. RF Characteristics (T_C = 25˚C)

Table 3. RF Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units
Frequency Range	Freq.	2	-	18	GHz
Insertion Loss	IL	-	2.4	-	dB
Isolation	ISO	-	12	-	dB
Input Return Loss	RFC	-	-11	-	dB
Output Return Loss	RL_RF1/RL_RF2 RL_RF3/RL_RF4	-	-11.5	-	dB

7. Typical Performance Curve

■ Small-signal Characteristics Curve

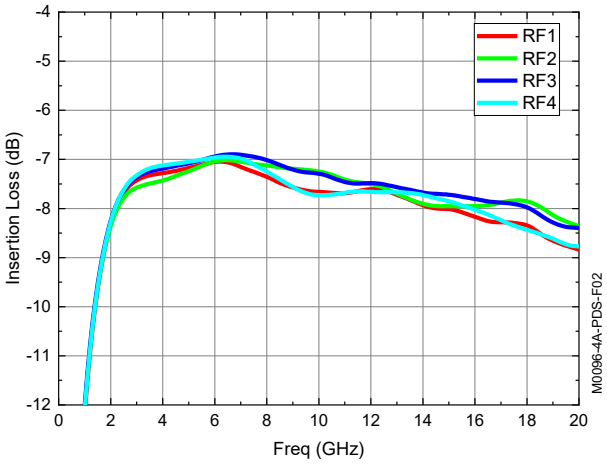


Figure 2. Insertion Loss Characteristics

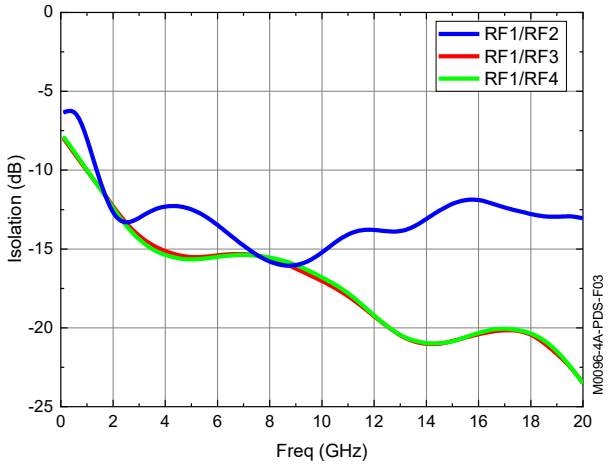


Figure 3. Isolation Characteristics

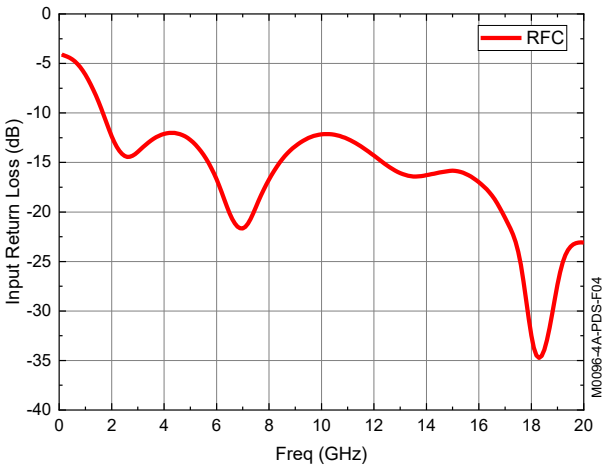


Figure 4. Input Return Loss Characteristics

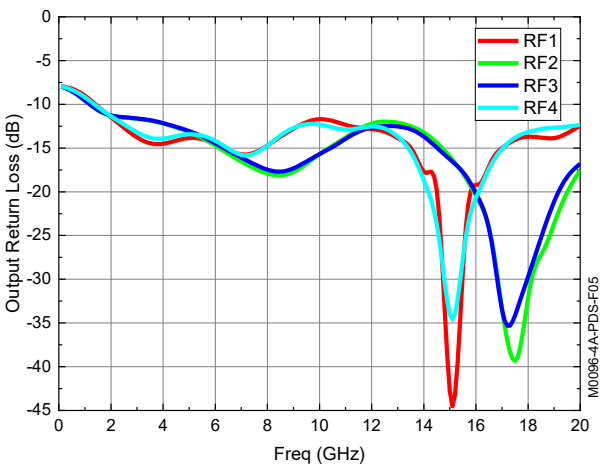
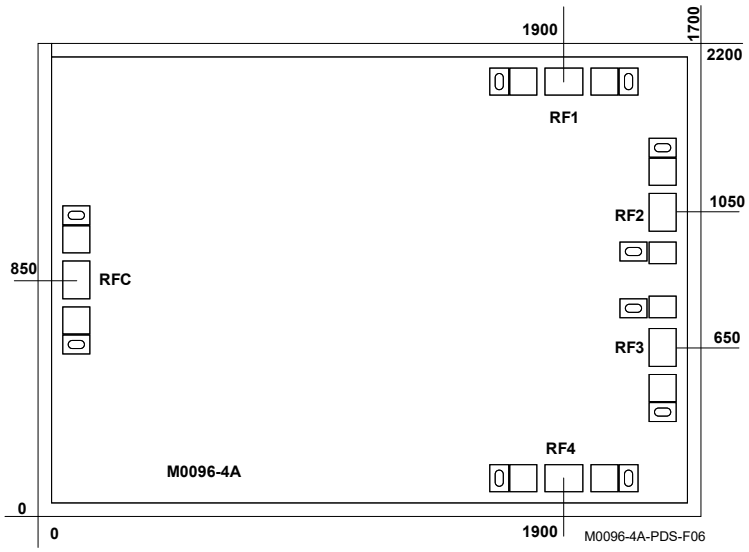


Figure 5. Output Return Loss Characteristics

8. Outline Dimensions



• Dimensions shown in micrometre

Figure 6. M0096-4A Outline Dimensions

Table 4. Pad Description

Pad	Symbol	Description
1	RFC	RF Input
2	RF1	RF Output 1
3	RF2	RF Output 2
4	RF3	RF Output 3
5	RF4	RF Output 4

9. Assembly Information

■ Assembly Diagram

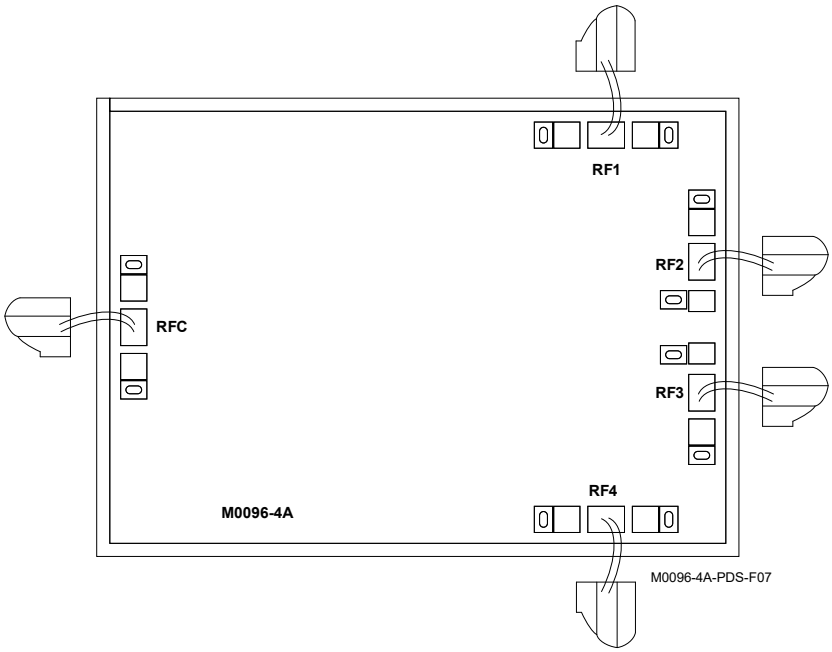


Figure 7. M0096-4A Assembly Diagram

- **Eutectic Die Attach:** It is best to use an 80% Au/20% Sn preform. Do not expose the chip to a temperature greater than 300°C for more than 30sec.
- **Wire Bonding:** RF bonds made with 1mil gold wire are recommended for the RF ports. Keep all bonds as short as possible, less than 0.35mm.

10. Handling Precautions

■ Storage

All bare dies ship in either Waffle or Gel Pak, which is an ESD protective container, and then sealed in an ESD protective bag. After opening the sealed ESD protective bag, all dies must be stored in a dry nitrogen environment.

■ Cleanliness

Handle the dies in a clean environment. Never use liquid cleaning systems to clean the dies.

■ ESD Caution

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore proper ESD precautions should be taken to avoid performance degradation or loss of functionality.



11. Contact Information

For the latest specifications, additional product information, technical support and sales support, please contact:

- **Email:** RF.support@raytrontek.com
- **Web:** www.raytrontek.com

12. Disclaimer

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