RFMD
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# RFAM9000

## 100MHZ TO 24GHZ, HIGH RELIABILITY MILITARY/SPACE AMP CONNECTORIZED

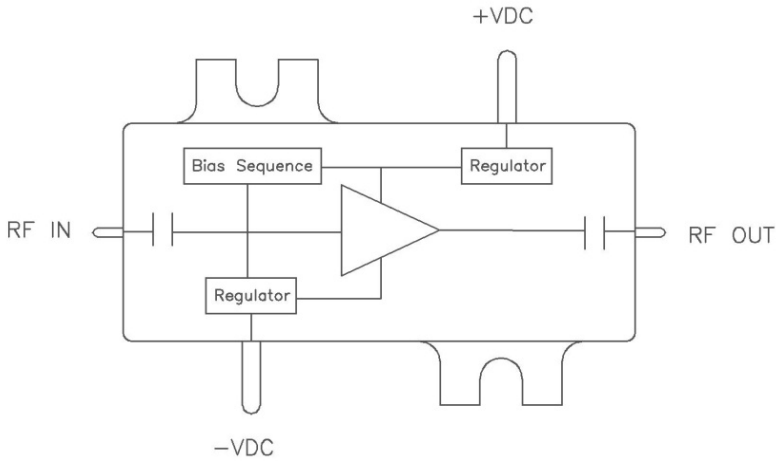
**Package: Module, 2 RF Connectors, 2 DC Pins, 21.34mmx7.77mmx4.69mm**

## Features

- Wideband Operation
- 50Ω I/O, Field Replaceable SMA
- Gain=16dB at 10GHz
- P1dB=24dBm at 10GHz
- Internal DC Blocking
- Internal Bias Sequencing
- Internal Voltage Regulators Allow for Wide Range of DC Inputs

## Applications

- Driver for Single-ended (SE) MZM, NRZ, DPSK, ODB, RZ
- Clock Driver for RZ and CS Pulse Carver
- Broadband ATE
- Instrumentation
- Military
- Aerospace




Functional Block Diagram

## Product Description

RFMD's RFAM9000 is a hermetic, SMA Connectorized module which uses RFMD's SDA-3000 GaAs MMIC to provide broadband performance from DC to 24GHz. The internally biased amplifier provides 15dB of gain, 3dB to 4dB noise figure and 24dBm of output power at P1dB. The flat gain response support applications including fiber optic modulator drivers, clock drivers for RZ and CS pulse carvers and may different ATE and instrumentation requirements. The module is 50Ω matched at the input and output and provides internally DC blocks.

### Ordering Information

| | |
|---|---|
| RFAM9000 | Wideband Power Amplifier Module |

### Optimum Technology Matching® Applied

| | | | |
|---|---|---|---|
| ☐ GaAs HBT | ☐ SiGe BiCMOS | ☑ GaAs pHEMT | ☐ GaN HEMT |
| ☐ GaAs MESFET | ☐ Si BiCMOS | ☐ Si CMOS | ☐ BiFET HBT |
| ☐ InGaP HBT | ☐ SiGe HBT | ☐ Si BJT | ☐ LDMOS |





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## Absolute Maximum Ratings

| Parameter | Rating | Unit |
|---|---|---|
| Supply Voltage ($+V_{DC}$) | | V |
| Supply Voltage ($-V_{DC}$) | | V |
| Maximum Current | 220 | mA |
| Maximum VSWR | 5:1 | |
| Storage Temperature | -40 to +150 | °C |
| Operating Temperature | -40 to +85 | °C |
| ESD JESD22 - A114 Human Body Model (HBM) | CLASS 0 MIL-STD-883H, METHOD 3015.8 | |

**Caution!** ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

RoHS status based on EUDirective2002/95/EC (at time of this document revision).



| Parameter | Specification | | | Unit | Condition |
|---|---|---|---|---|---|
| | Min. | Typ. | Max. | | |
| **Electrical Specifications** | | | | | |
| **Frequency Range** | 1 | | 24 | GHz | |
| Supply Voltage ($+V_{DC}$) | 9.0 | 12.0 | 18.0 | V | Recommended operating range. |
| Supply Voltage ($-V_{DC}$) | -7.0 | -12.0 | -18.0 | V | Recommended operating range. |
| Supply Current | | 220 | | mA | Quiescent |
| Gain (S21) | 15 | 16 | | dB | 10GHz |
| P1dB | 23 | 24 | | dBm | 10GHz |
| P3dB | | 32 | | dBm | |
| OIP3 | | 45 | | dBm | |
| Input Return Loss | 10 | | | dB | |
| Output Return Loss | 10 | | | dB | |
| Noise Figure | | -50 | | dBc | |
| Spurious Response | | -50 | | dBc | |

Test Conditions: $+V_{DC}$=+10V, $-V_{DC}$=-10V, $+I_{DC}$=220mA Typical T=25°C unless noted otherwise.



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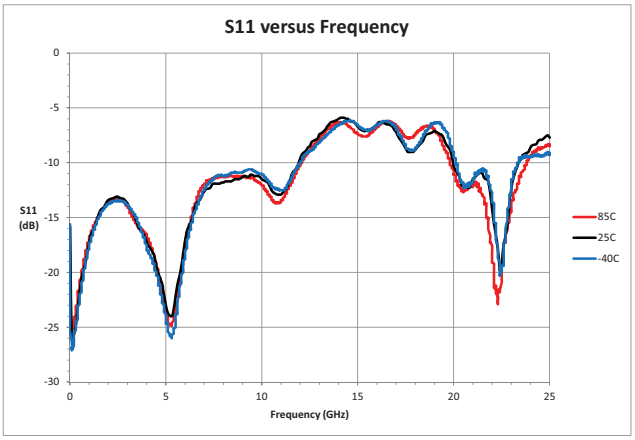
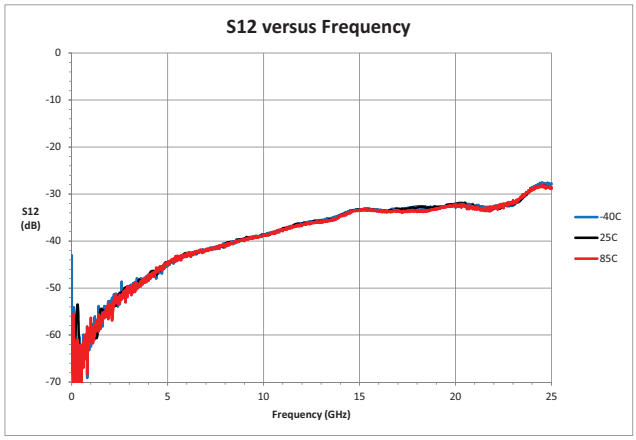
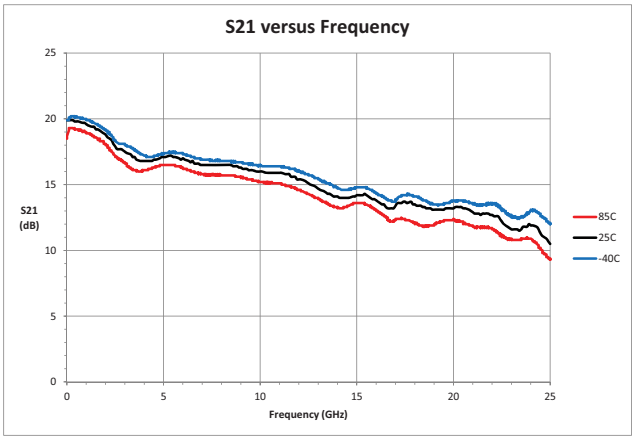
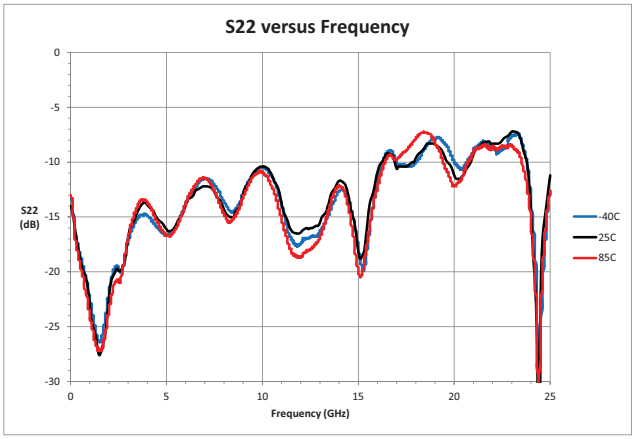
## Typical Electrical Performance



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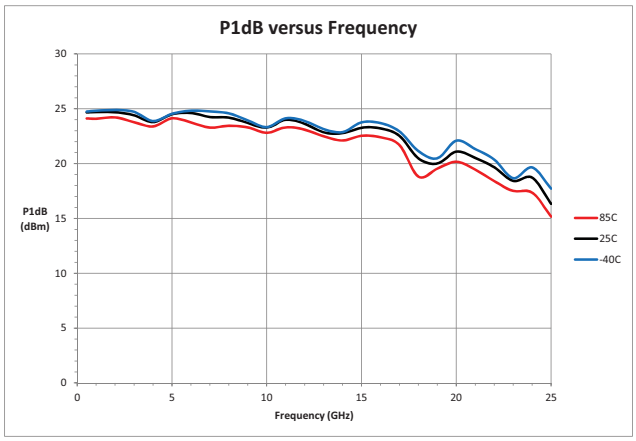


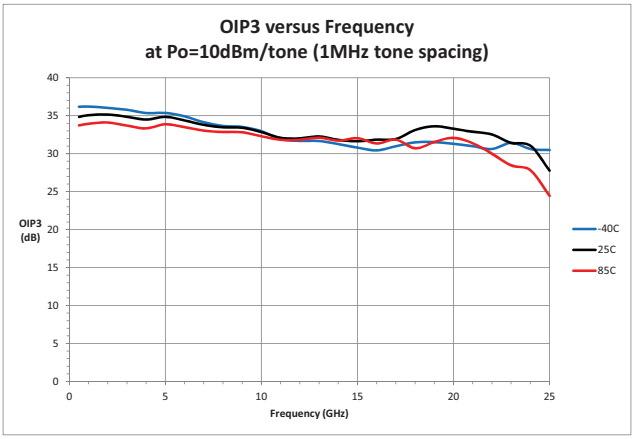


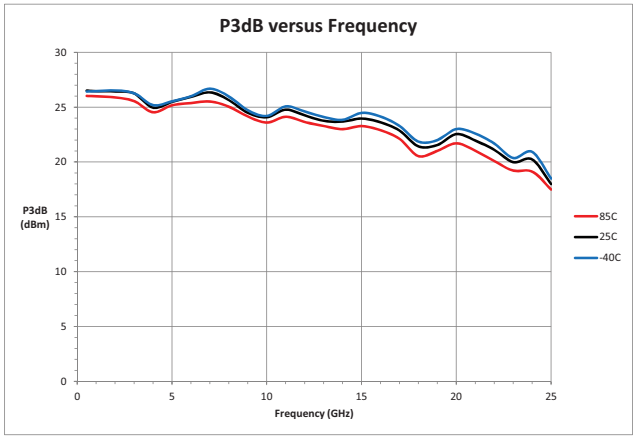


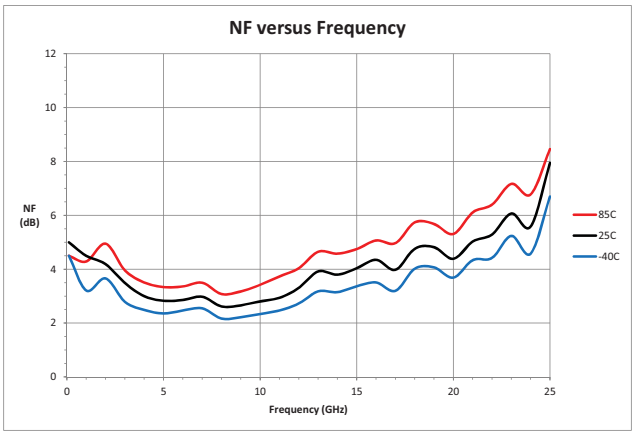


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## Package Drawing