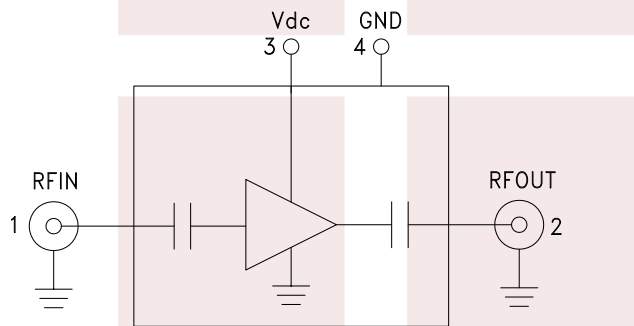


Low Phase Noise Amplifier Operating From 7 GHz to 11 GHz with 9 dB Gain, 22 dBm P1dB and SMA

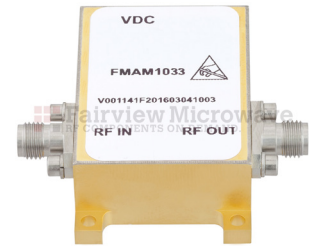
The FMAM1033 is a low phase noise amplifier that operates across the frequency range from 7 GHz to 11 GHz. The design utilizes GaAs HBT MMIC technology and exhibits ultra low phase noise of -170 dBc/Hz @ 1 kHz offset frequency. The design also exhibits high dynamic range with typical performance that includes 9 dB of small signal gain, 6 dB noise figure, up to +25 dBm of output power at P1dB, +33 dBm output IP3, while using a +7V single DC supply. The wideband distributed amplifier design input/output ports are internally matched to 50 ohms and are DC blocked. The drop-in package is hermetically sealed with field replaceable SMA connectors and has an operating temperature range of -55°C to +85°C. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.

Functional Block Diagram



Electrical Specifications (TA = +25°C , DC Voltage = 7Vdc , DC Current = 300mA)

| Description | Min | Typ | Max | Unit |
|----------------------------------|-----|-----|-----|-------|
| Frequency Range | 7 | | 11 | GHz |
| Small Signal Gain | | 9 | | dB |
| Output at 1 dB Compression Point | | +22 | | dBm |
| Output 3rd Intercept Point | | +33 | | dBm |
| Operating DC Voltage | | 7 | | Volts |
| Operating DC Current | | 300 | | mA |
| Operating Temperature Range | -55 | | +85 | °C |



Features:

- Low Phase Noise Amplifier
- Wide frequency band
- Highly Linear GaAs HBT MMIC Technology
- Phase Noise -170 dBc/Hz @ 1KHz offset
- Gain 9 dB
- High Output IP3 +33 dBm
- P1dB up to +25 dBm
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable SMA Connectors
- -54°C to +85°C Operating Temperature

Applications:

- Electronic Warfare
- Microwave Radio
- VSAT
- Radar
- Space Systems
- Test Instrumentation
- Telecom Infrastructure

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sales@fairviewmicrowave.com

Performance by Frequency

| Description | Min. | Typ. | Max. | Units |
|--|------|--------|------|--------|
| Frequency Range | | 7 - 11 | | GHz |
| Vdc Range | 6 | 7 | 8 | V |
| Gain | 5 | 9 | | dB |
| Gain Variation Over Temperature | | 0.02 | | dB/ °C |
| Noise Figure | | 6 | | dB |
| Input Return Loss | | 12 | | dB |
| Output Return Loss | | 15 | | dB |
| Output Power For 1 dB Compression (P1dB) | 20 | 22 | | dBm |
| Saturated Output Power (Psat) | | 25 | | dBm |
| Output Third Order Intercept (IP3) | | 33 | | dBm |
| Phase Noise @ 100 Hz, Psat, 9 GHz | | -160 | | dBc/Hz |
| Phase Noise @ 1 KHz, Psat, 9 GHz | | -170 | | dBc/Hz |
| Phase Noise @ 10 KHz, Psat, 9 GHz | | -180 | | dBc/Hz |
| Supply Current | | 300 | 360 | mA |

Mechanical Specifications

Size

| | |
|--------|----------------------|
| Length | 1.14 in [28.96 mm] |
| Width | 1.9 in [48.26 mm] |
| Height | 0.56 in [14.22 mm] |
| Weight | 0.408 lbs [185.07 g] |

| | |
|------------------|-------------------|
| Connector Option | Field Replaceable |
| Input Connector | SMA Female |
| Output Connector | SMA Female |

Environmental Specifications

Temperature

| | |
|-----------------|-------------------|
| Operating Range | -55 to +85 deg C |
| Storage Range | -65 to +150 deg C |

| | |
|---------------------|--|
| Temperature Cycling | MIL-STD-883, Method 101C, Cond B |
| Hermetic Seal | Gross Leak MIL-STD-883 Method 1014C1/Fine Leak MIL-STD-883, Method 1014A2, 5 x 10-8 atm cc |
| ESD Sensitivity | ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation. |



Compliance Certifications (see [product page](#) for current document)

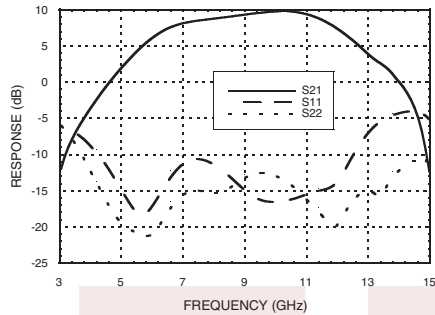
Plotted and Other Data

Notes:

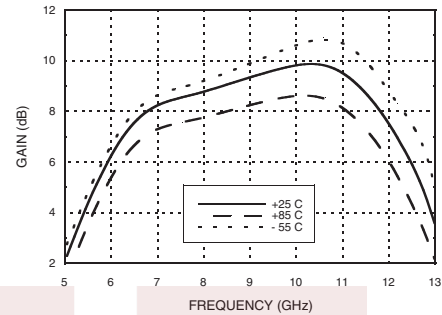
- Values at 25 °C, sea level

Typical Performance Data

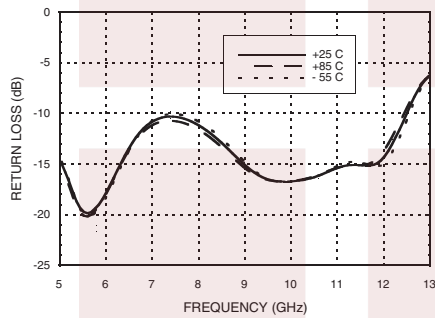
Broadband, Gain & Return Loss



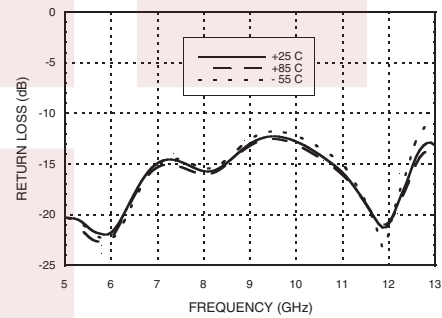
Gain vs. Temperature



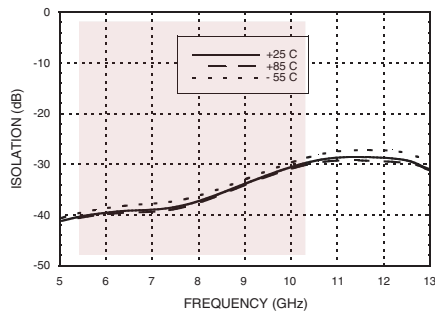
Input Return Loss vs. Temperature



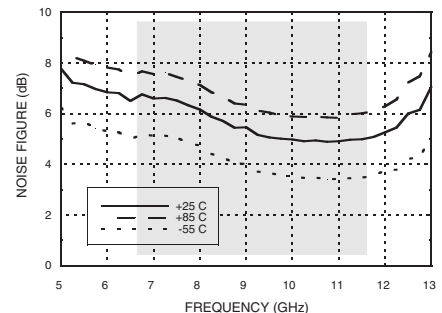
Output Return Loss vs. Temperature



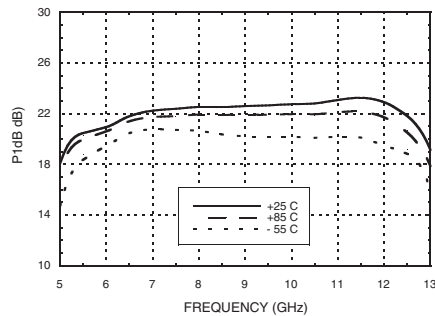
Reverse Isolation vs. Temperature



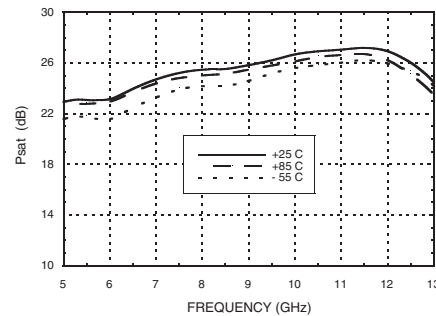
Noise Figure vs. Temperature



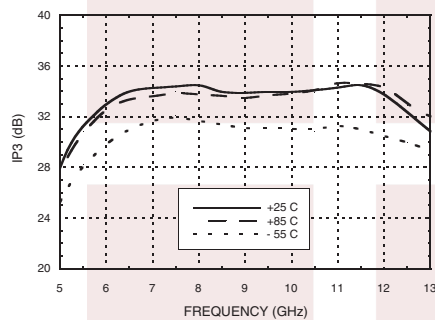
Output P1dB vs. Temperature



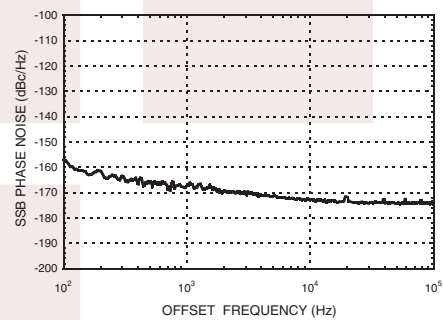
Output Psat vs. Temperature



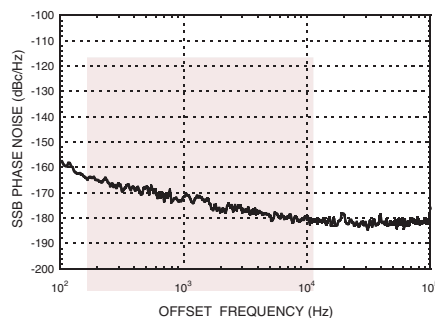
Output IP3 vs. Temperature



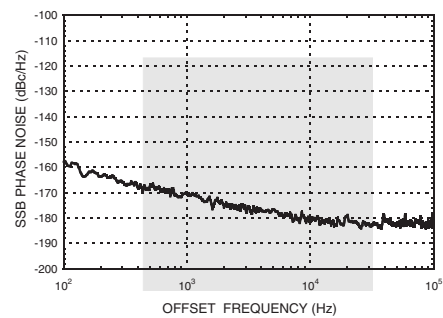
Phase Noise at Pout = 10 dBm @ 9 GHz



Phase Noise at Pout = P1dB @ 9 GHz



Phase Noise at Pout = Psat @ 9 GHz

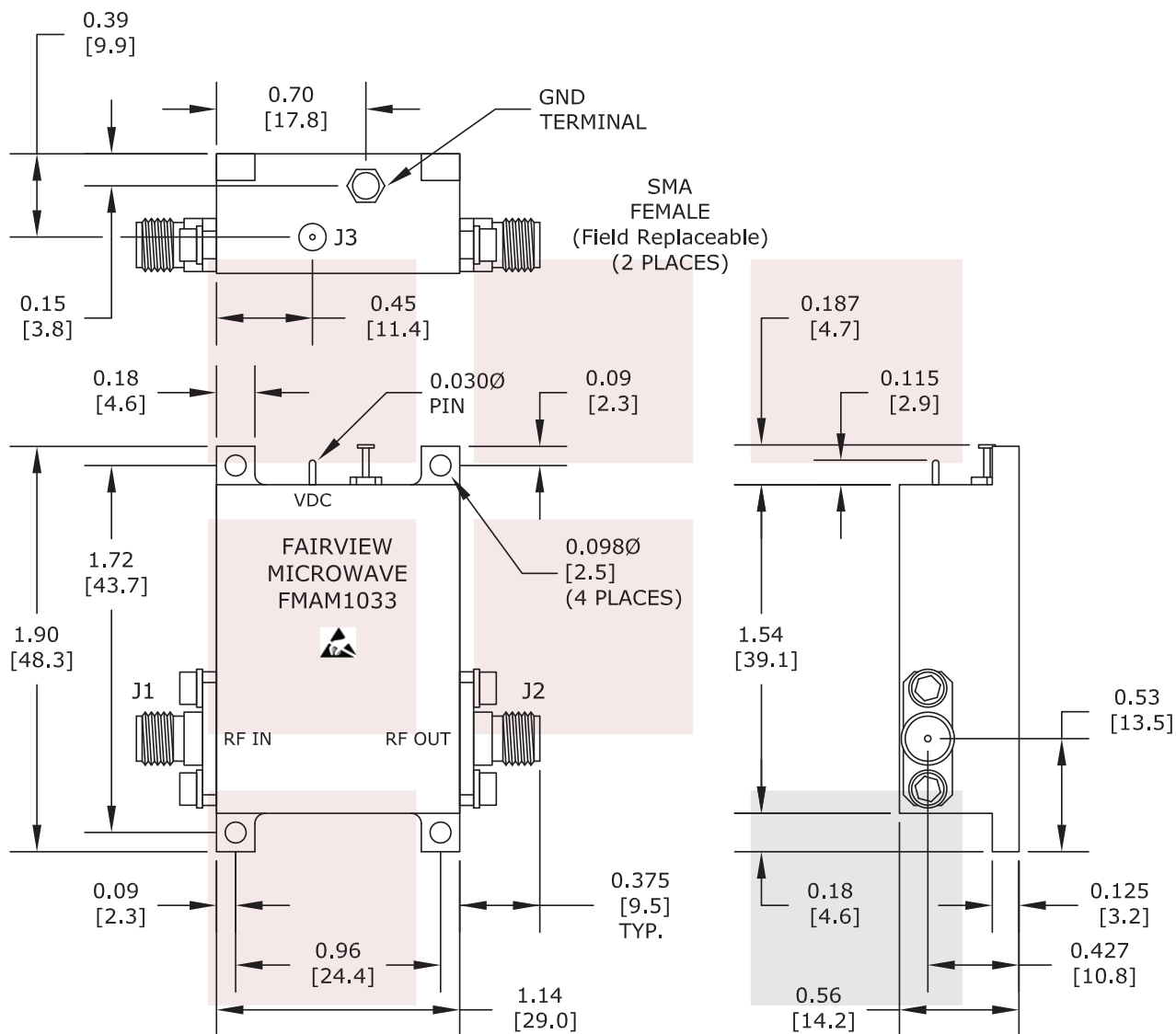


Low Phase Noise Amplifier Operating From 7 GHz to 11 GHz with 9 dB Gain, 22 dBm P1dB and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Low Phase Noise Amplifier Operating From 7 GHz to 11 GHz with 9 dB Gain, 22 dBm P1dB and SMA FMAM1033](https://www.fairviewmicrowave.com/low-phase-noise-amplifier-9db-fmam1033-p.aspx)

URL: <https://www.fairviewmicrowave.com/low-phase-noise-amplifier-9db-fmam1033-p.aspx>

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| | | | | | |
|---|--------|---|-------|--------------------|-------------|
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| TITLE Low Phase Noise Amplifier Operating From 7 GHz to 11 GHz with 9 dB Gain, 22 dBm P1dB and SMA | | DWG NO FMAM1033 | | CAGE CODE 3FKR5 | |
| CAD FILE | 020217 | SHEET | SCALE | N/A | SIZE A 2233 |