



# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

## R05G11GSMB

### Low Noise Amplifier 5GHz ~ 11GHz

#### Features

- Gain: 22.5dB Typical
- Noise Figure: 1.4dB Typical
- P1dB Output Power: +9.5dBm Typical
- Supply Voltage: +3.6V

#### Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument



Electrical Specifications, TA = +25 °C, Vcc = +3.6V

| Parameter                                        | Min.                                                  | Typ. | Max. | Units  |
|--------------------------------------------------|-------------------------------------------------------|------|------|--------|
| Frequency Range                                  | 5                                                     |      | 11   | GHz    |
| Gain                                             |                                                       | 22.5 |      | dB     |
| Gain Flatness                                    |                                                       | -    |      | dB     |
| Gain Variation Over Temperature<br>(-45°C~+85°C) |                                                       | -    |      | dB     |
| Noise Figure                                     |                                                       | 1.4  |      | dB     |
| Input VSWR                                       |                                                       | 1.5  |      | : 1    |
| Output VSWR                                      |                                                       | 1.5  |      | : 1    |
| Output 1dB Compression Point (P1dB)              |                                                       | 9.5  |      | dBm    |
| Saturated Output Power (Psat)                    |                                                       | -    |      | dBm    |
| Output Third Order Intercept (IP3)               |                                                       | 22   |      | dBm    |
| Supply Current(Vcc=+3.6V)                        |                                                       | 30   |      | mA     |
| Isolation S12                                    |                                                       | -    |      | dB     |
| Weight                                           | -                                                     |      |      | Ounces |
| Impedance                                        | 50                                                    |      |      | Ohms   |
| Input / Output Connectors                        | SMA                                                   |      |      |        |
| Finish                                           | Standard: Gold 40 micron; Nickel 220 micron thickness |      |      |        |
|                                                  | Option: Gold 80 micron; Nickel 180 micron thickness   |      |      |        |
| Material                                         | Aluminum / copper                                     |      |      |        |
| Package Sealing                                  | Epoxy Sealing (Standard)                              |      |      |        |
|                                                  | Hermetically Sealed (Optional)                        |      |      |        |

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### Absolute Maximum Ratings

|                   |        |
|-------------------|--------|
| Operating Voltage | +5V    |
| RF Input Power    | +20dBm |

### Biasing Up Procedure

|                     |                          |
|---------------------|--------------------------|
| Step 1              | Connect Ground Pin       |
| Step 2              | Connect input and output |
| step3               | Connect +3.6V biasing    |
| Power OFF Procedure |                          |
| Step 1              | Turn off +3.6V biasing   |
| Step 2              | Remove RF connection     |
| Step 3              | Remove Ground.           |

### Environmental Specifications and Test Standards

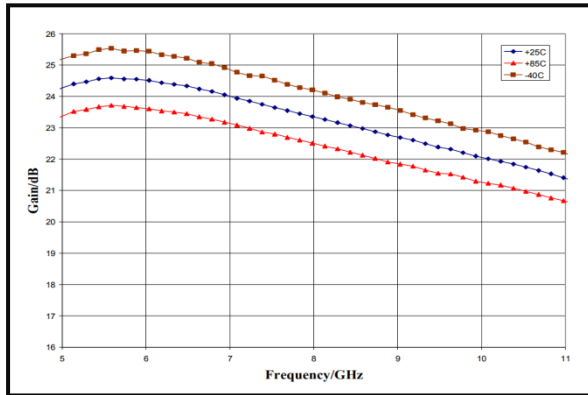
| Parameter                        | Standard      | Description                                                                                                                                                                                                     |
|----------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature          | MIL-STD-39016 | -45°C~+85°C                                                                                                                                                                                                     |
| Storage Temperature              |               | -50°C~+125°C                                                                                                                                                                                                    |
| Thermal Shock                    |               | 1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)                                                                                                                                                                       |
| Electrical & Temperature Burn In |               | Temperature +85°C for 72 Hours                                                                                                                                                                                  |
| Shock                            |               | 1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s<br>2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s<br>3. Total 18 times (6 directions, 3 repetitions per direction). |
| Altitude                         | MIL-STD-883   | Standard: 30,000 Ft (Epoxy Sealed Controlled Environment)<br>Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)                                                                                             |
| Hermetically Sealed (Optional)   |               | MIL-STD-883 (For Hermetically Sealed Units)                                                                                                                                                                     |
| Random Vibration                 |               | Test Method 214A. Test Condition I. Test Condition Letter C.<br>Duration 15 minutes                                                                                                                             |

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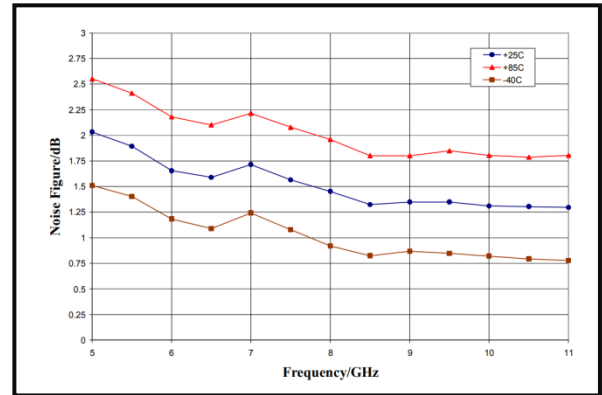


### Typical Performance Plots

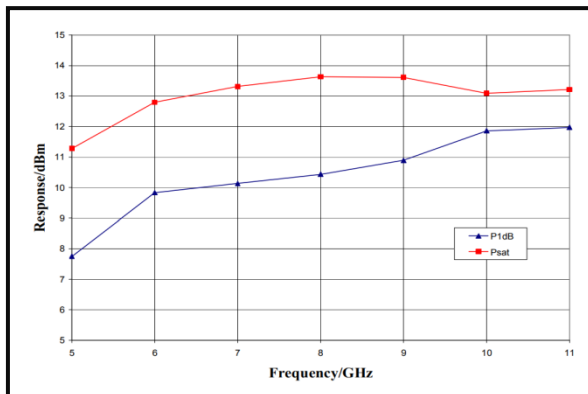
#### Gain vs. Temperature



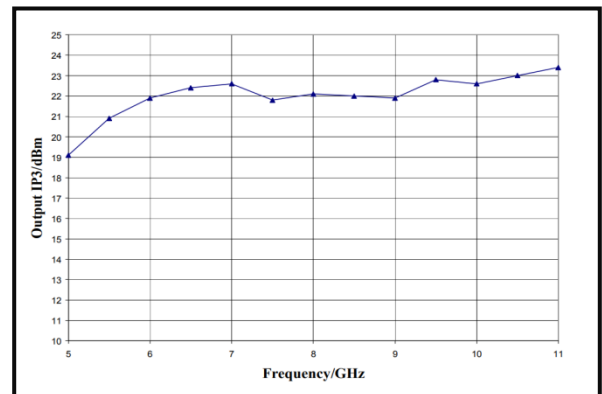
#### Noise Figure vs. Temperature



#### Output Power



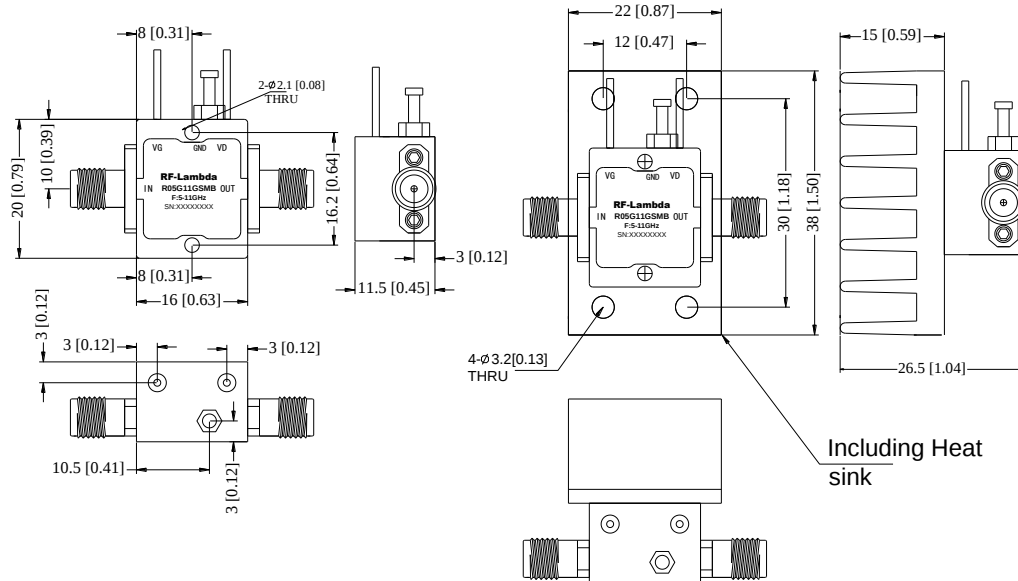
#### Output Third Order Intercept (IP3)





### Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)



### Ordering Information

| Part No.   | ECCN  | Description                 |
|------------|-------|-----------------------------|
| R05G11GSMB | EAR99 | 5-11GHz Low Noise Amplifier |

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