

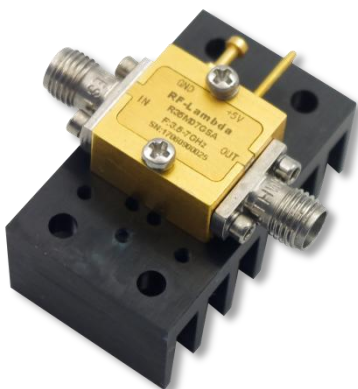


# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

## R35M07GSA

### Low Noise Amplifier 3.5GHz~7GHz



#### Features

- Gain: 16.5dB Typical
- Noise Figure: 2.0dB Typical
- P1dB Output Power: +16dBm Typical
- Supply Voltage: +5V

#### Typical Applications

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

Electrical Specifications, TA = +25 °C, Vcc = +5V

| Parameter                                   | Min.                                                  | Typ. | Max. | Units  |
|---------------------------------------------|-------------------------------------------------------|------|------|--------|
| Frequency Range                             | 3.5                                                   |      | 7    | GHz    |
| Gain                                        | 16                                                    | 16.5 |      | dB     |
| Gain Flatness                               |                                                       | ±0.5 | ±0.8 | dB     |
| Gain Variation Over Temperature (-45 ~ +85) |                                                       |      | ±1.5 | dB     |
| Noise Figure                                |                                                       | 2.0  | 3.2  | dB     |
| Input VSWR                                  |                                                       | 1.9  |      | : 1    |
| Output VSWR                                 |                                                       | 2.0  |      | : 1    |
| Output 1dB Compression Point (P1dB)         | 14                                                    | 16   |      | dBm    |
| Saturated Output Power (Psat)               |                                                       | 19   |      | dBm    |
| Output Third Order Intercept (IP3)          |                                                       | 28   |      | dBm    |
| Supply Current (Vcc=+5V)                    |                                                       | 60   | 70   | mA     |
| Isolation S12                               |                                                       | -43  |      | dB     |
| Weight                                      | 1.06                                                  |      |      | ounces |
| Impedance                                   | 50                                                    |      |      | Ohms   |
| Input / Output Connectors                   | SMA-Female                                            |      |      |        |
| Finish                                      | Standard: Gold 40 micron; Nickel 220 micron thickness |      |      |        |
|                                             | Option: Gold 80 micron; Nickel 180 micron thickness   |      |      |        |
| Material                                    | Aluminum                                              |      |      |        |
| Package Sealing                             | Epoxy Sealed (Standard)                               |      |      |        |
|                                             | Hermetically Sealed (Optional)                        |      |      |        |

Low Noise Amplifier 3.5GHz~7GHz



### Absolute Maximum Ratings

|                   |        |
|-------------------|--------|
| Operating Voltage | +6V    |
| RF Input Power    | +20dBm |

### Biasing Up Procedure

|                     |                          |
|---------------------|--------------------------|
| Step 1              | Connect Ground Pin       |
| Step 2              | Connect input and output |
| Step 3              | Connect +5V biasing      |
| Power OFF Procedure |                          |
| Step 1              | Turn off +5V 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              |               | -55°C~+125°C                                                                                                                                                                                                    |
| Thermal Shock                    |               | 1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)                                                                                                                                                                       |
| Random Vibration                 |               | Acceleration Spectral Density 6 (m/s)<br>Total 92.6 RMS                                                                                                                                                         |
| 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)                                                                                                                                                                     |



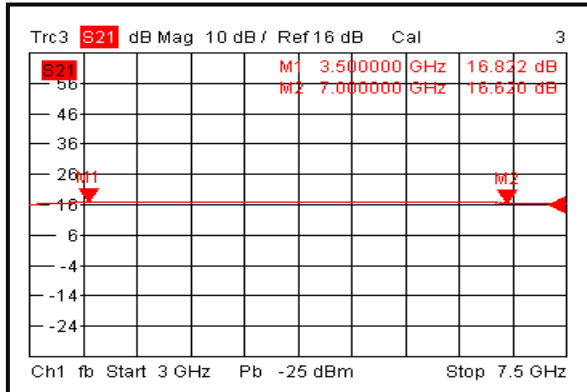
# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

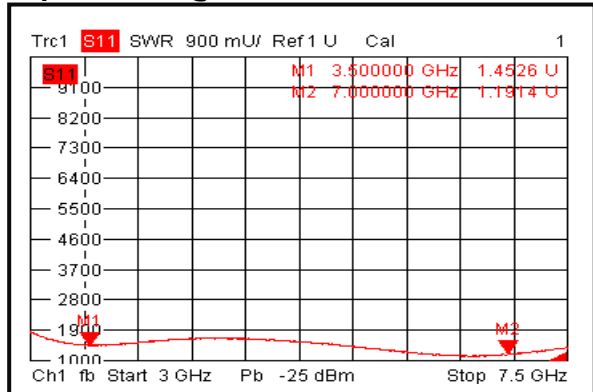
## R35M07GSA

### Typical Performance Plots

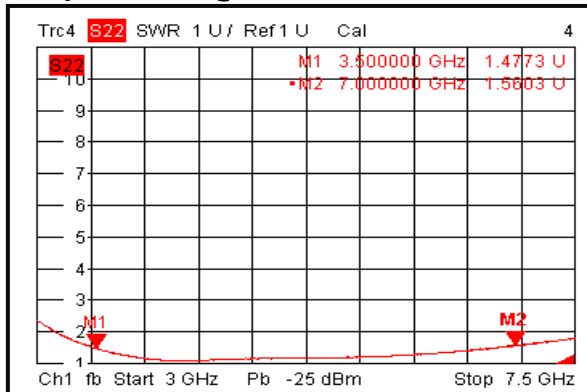
#### Gain @+25°C



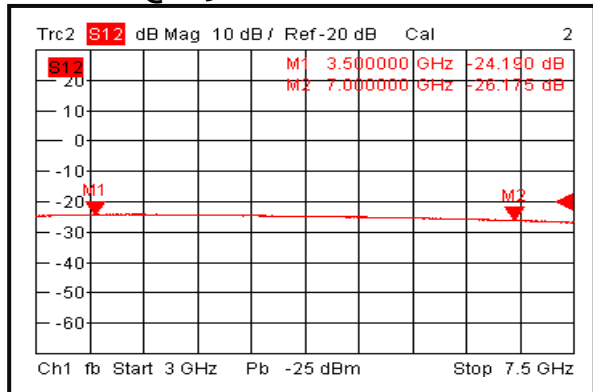
#### Input VSWR @+25°C



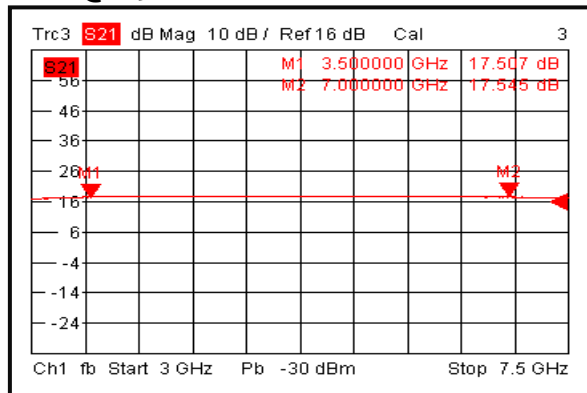
#### Output VSWR @+25°C



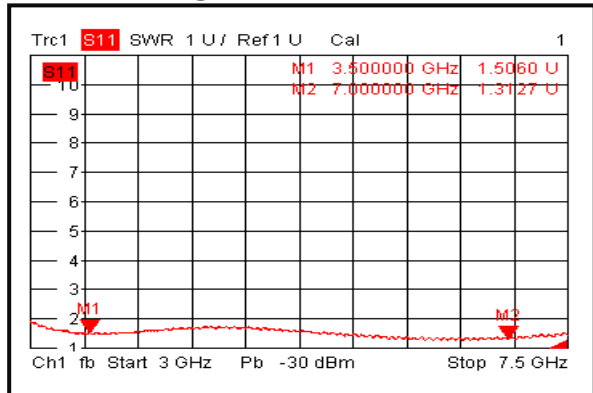
#### Isolation @+25°C



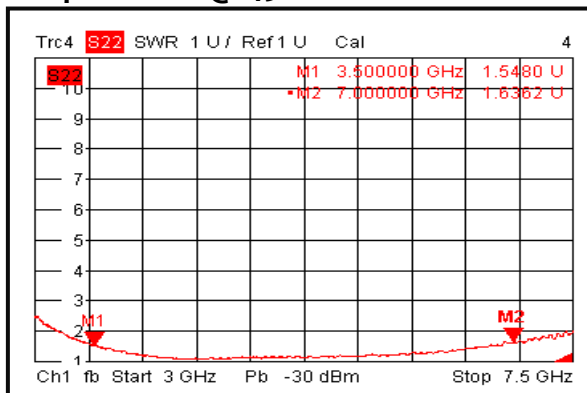
#### Gain @-45°C



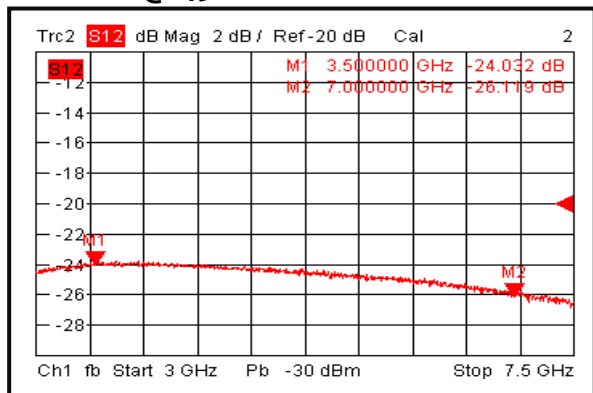
#### Input VSWR @-45°C



#### Output VSWR @-45°C



#### Isolation @-45°C



LOW NOISE Amplifier 3.5GHz~7GHz

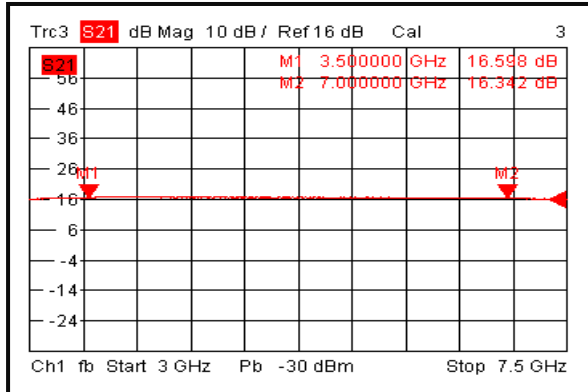


# RF-LAMBDA

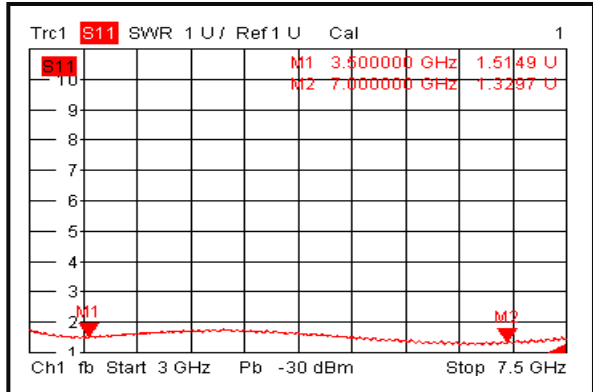
LEADER OF RF BROADBAND SOLUTIONS

## R35M07GSA

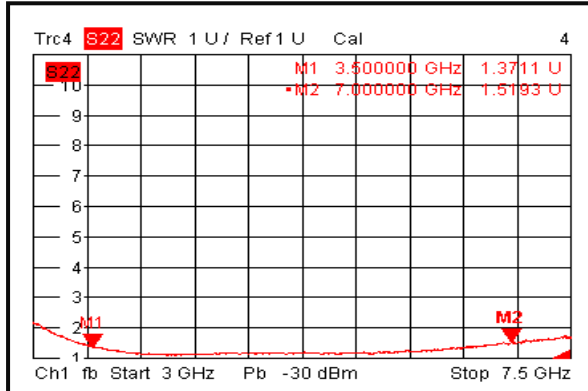
### Gain @+85°C



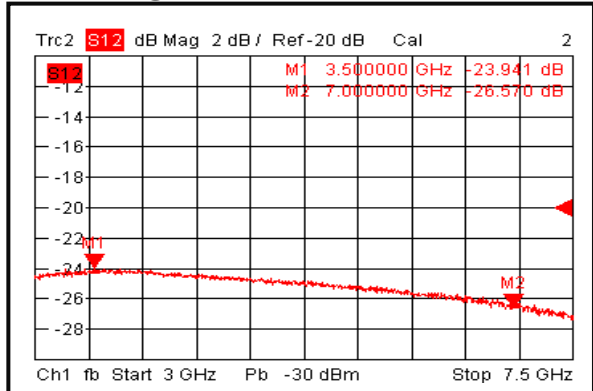
### Input VSWR @+85°C



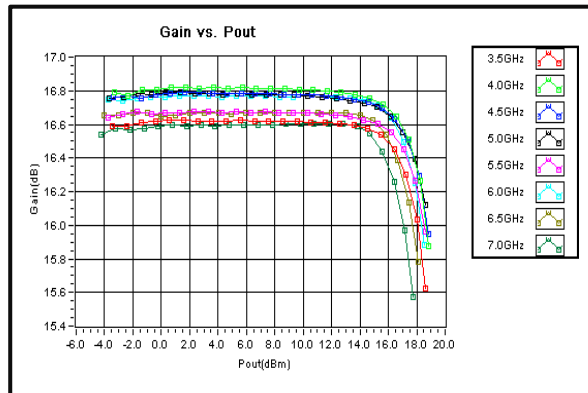
### Output VSWR @+85°C



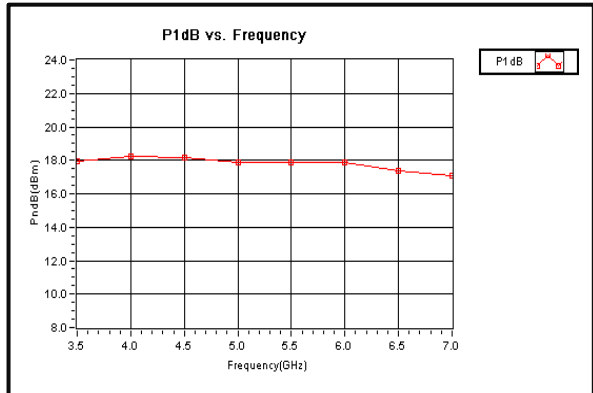
### Isolation @+85°C



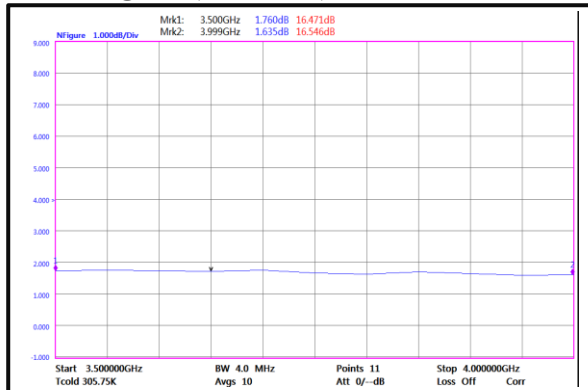
### Gain vs. Output Power



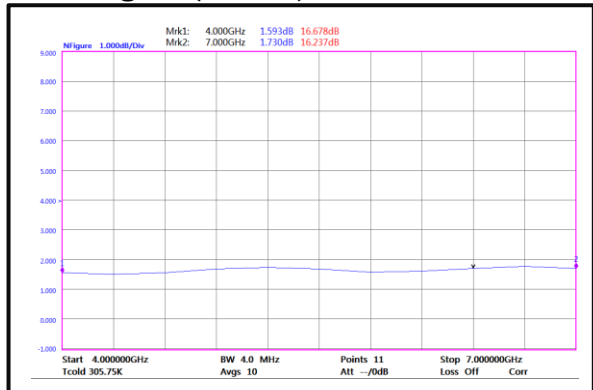
### P1dB vs. Frequency



### Noise Figure (3.5-4GHz)



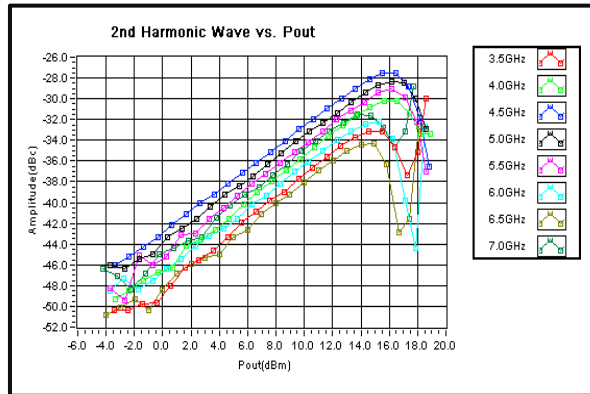
### Noise Figure (4-7GHz)



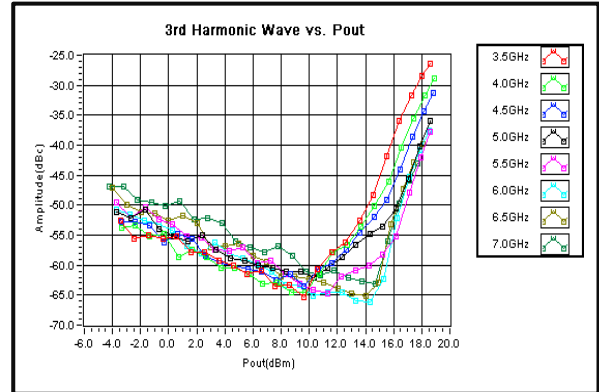
LOW NOISE Amplifier 3.5GHz~7GHz



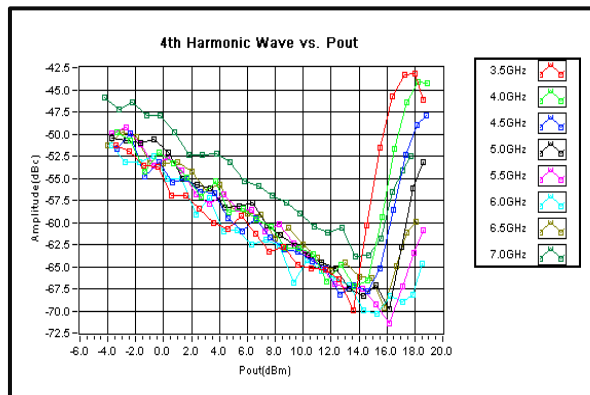
### 2nd Harmonic Wave Output Power



### 3rd Harmonic Wave Output Power



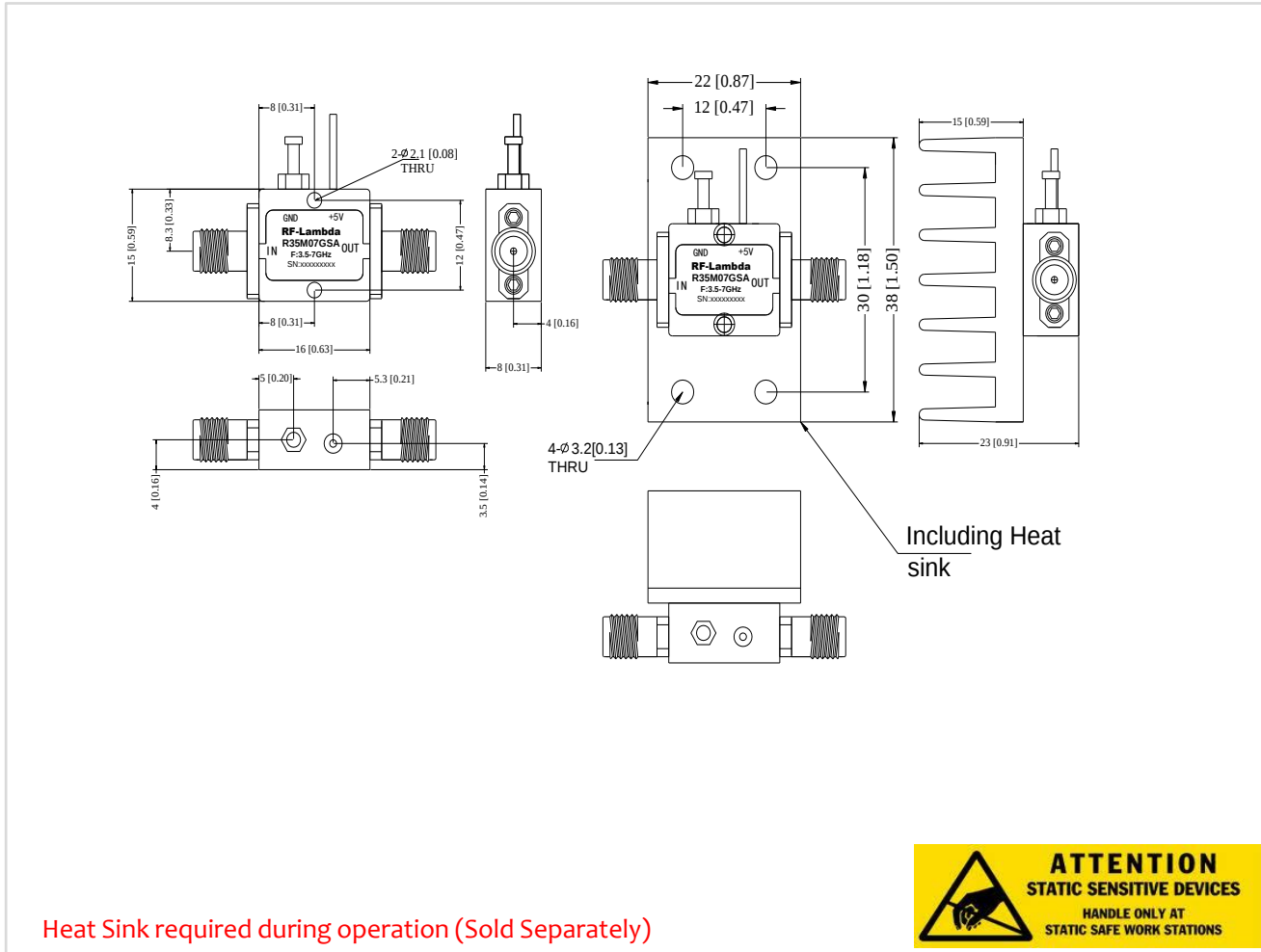
### 4th Harmonic Wave Output Power





### Outline Drawing:

All Dimensions in mm [inches]



Heat Sink required during operation (Sold Separately)

### Ordering Information

| Part No.  | ECCN  | Description                  |
|-----------|-------|------------------------------|
| R35M07GSA | EAR99 | 3.5-7GHz Low Noise Amplifier |

### Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.