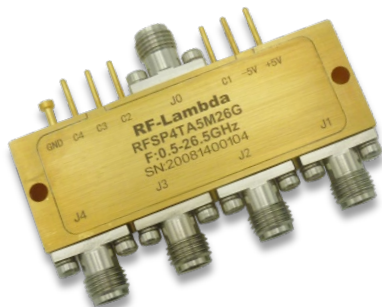


## Absorptive Coaxial SP4T Switch 0.5 – 26.5GHz



### Features

- Ultra Wide Band Operation 0.5-26.5GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

### Typical Applications

- Wireless Infrastructure
- Test and Measurement
- Military and Aerospace

Electrical Specifications,  $T_A = +25^\circ\text{C}$ ,  $V_{dd} = +5\text{V} / -5\text{V}$ ,  $TTL = 0 / +5\text{V}$

| Description                             | PN: RFSP4TA5M26G               |       |      |      |       |      |         |       |      |          |
|-----------------------------------------|--------------------------------|-------|------|------|-------|------|---------|-------|------|----------|
|                                         | SP4T Absorptive Switch         |       |      |      |       |      |         |       |      |          |
|                                         | Low Power Cold Switching       |       |      |      |       |      |         |       |      |          |
| Parameter                               | Min.                           | Typ.  | Max. | Min. | Typ.  | Max. | Min.    | Typ.  | Max. | Units    |
| Frequency Range                         | 0.5-6                          |       |      | 6-12 |       |      | 12-26.5 |       |      | GHz      |
| Insertion Loss                          |                                | 2.5   | 2.8  |      | 3.0   | 3.5  |         | 3.8   | 4.5  | dB       |
| Insertion Loss Temperature Coefficient  |                                | 0.003 |      |      | 0.003 |      |         | 0.003 |      | dB/°C    |
| Isolation                               | 60                             | 65    |      | 50   | 55    |      | 45      | 50    |      | dB       |
| Input VSWR                              |                                | 1.8   | 2.3  |      | 1.6   | 2.0  |         | 1.8   | 2.0  | : 1      |
| Output VSWR                             |                                | 1.8   | 2.3  |      | 1.6   | 2.0  |         | 1.8   | 2.0  | : 1      |
| RF Input Power                          |                                |       | 23   |      |       | 23   |         |       | 23   | dBm      |
| DC Power Dissipation                    |                                | 0.9   |      |      | 0.9   |      |         | 0.9   |      | W        |
| 0.1dB Compression Point ( $P_{0.1dB}$ ) |                                | 23    |      |      | 23    |      |         | 23    |      | dBm      |
| IIP3                                    |                                | 40    |      |      | 45    |      |         | 42    |      | dBm      |
| Switching Speed                         | 100 Max.                       |       |      |      |       |      |         |       |      | ns       |
| Weight                                  | 1.5 Max.                       |       |      |      |       |      |         |       |      | Ounces   |
| Impedance                               | 50                             |       |      |      |       |      |         |       |      | $\Omega$ |
| Bias Current (+5V/-5V)                  | 160/50 Max.                    |       |      |      |       |      |         |       |      | mA       |
| Input / Output Connectors               | SMA-Female                     |       |      |      |       |      |         |       |      |          |
| Finish                                  | Gold Plated                    |       |      |      |       |      |         |       |      |          |
| Material                                | Aluminum                       |       |      |      |       |      |         |       |      |          |
| Sealing                                 | Hermetically Sealed (Optional) |       |      |      |       |      |         |       |      |          |

### Absolute Maximum Ratings

|         |                 |
|---------|-----------------|
| Biasing | +5V±10%/-5V±10% |
|---------|-----------------|

**Note:** TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

### Ordering Information

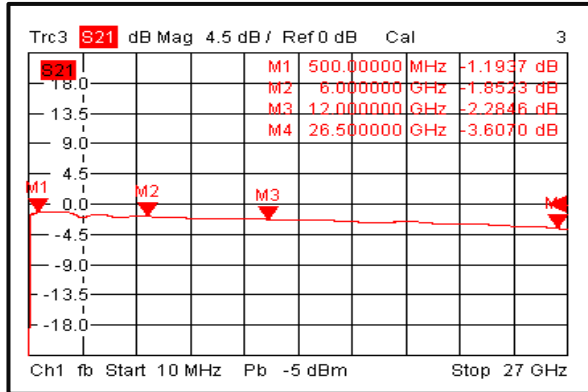
| Part No.     | Description                       |
|--------------|-----------------------------------|
| RFSP4TA5M26G | SP4T 0.5-26.5GHz PIN Diode Switch |

### Environmental Specifications and Test Standards

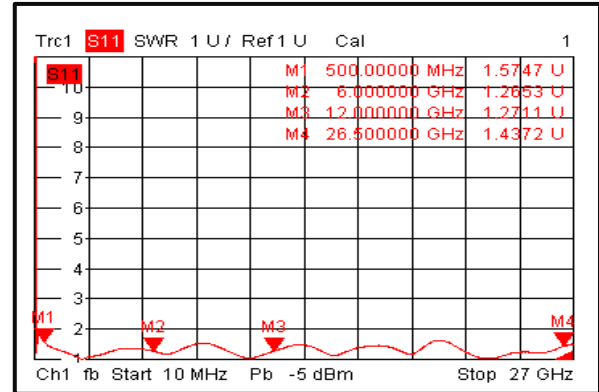
| Parameter                      | Description                                                                                                                                                                                                     |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature        | -40°C~+85°C<br>(Case Temperature)                                                                                                                                                                               |
| Storage Temperature            | -50°C~+105°C                                                                                                                                                                                                    |
| Thermal Shock                  | -40°C → +85°C<br>(5 Cycles / 10 hours)                                                                                                                                                                          |
| Random Vibration               | MIL-STD-202G<br>Table 214-I, Test Condition Letter C<br>1.5 Hours Per Axis                                                                                                                                      |
| High 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                       | 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)                                                                                                                                                                     |

## Typical Performance Plots

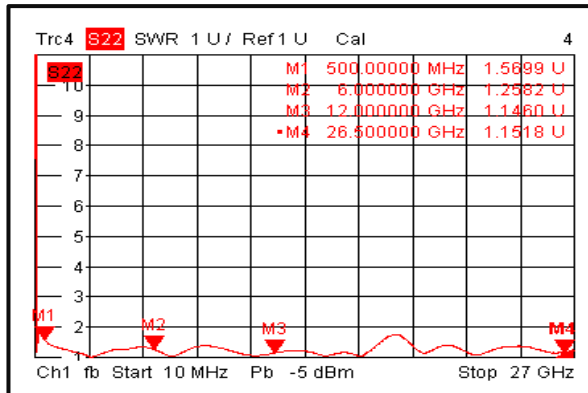
### Insertion Loss @+25°C



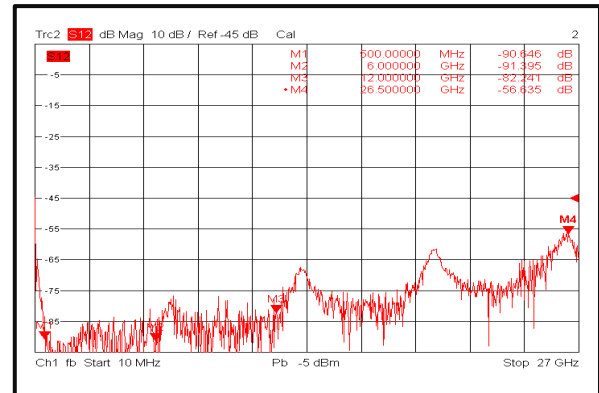
### Input VSWR @+25°C



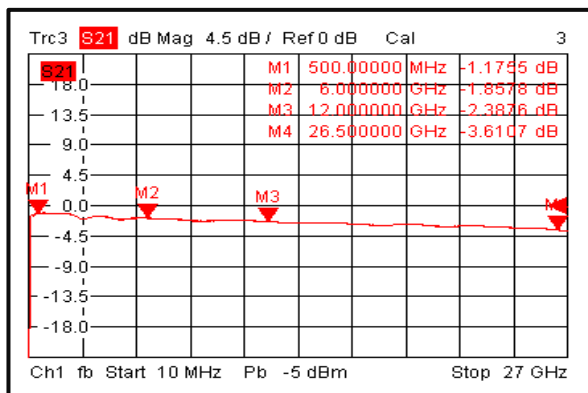
### Output VSWR @+25°C



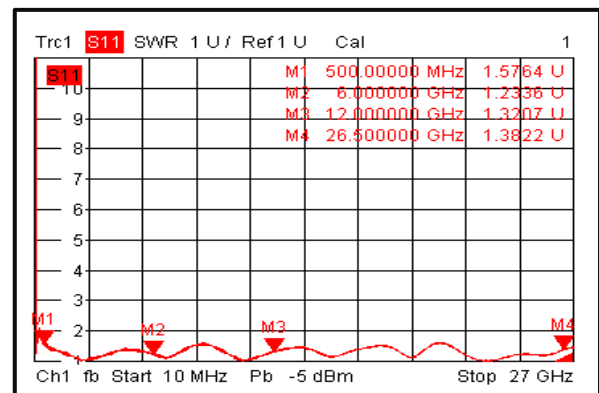
### Isolation @+25°C



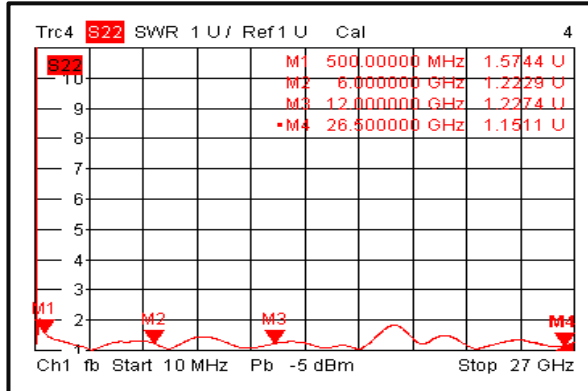
### Insertion Loss @-40°C



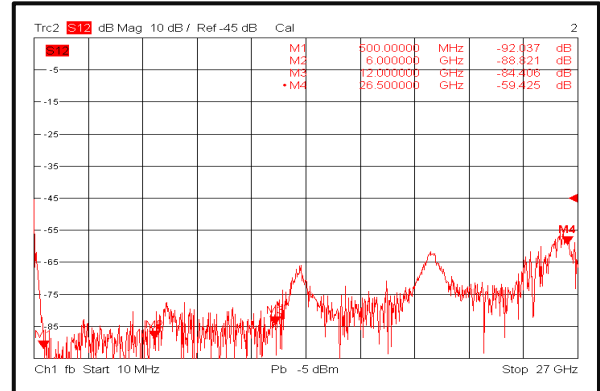
### Input VSWR @-40°C



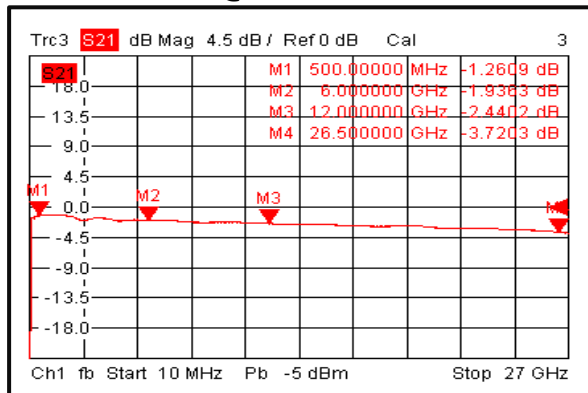
**Output VSWR @-40°C**



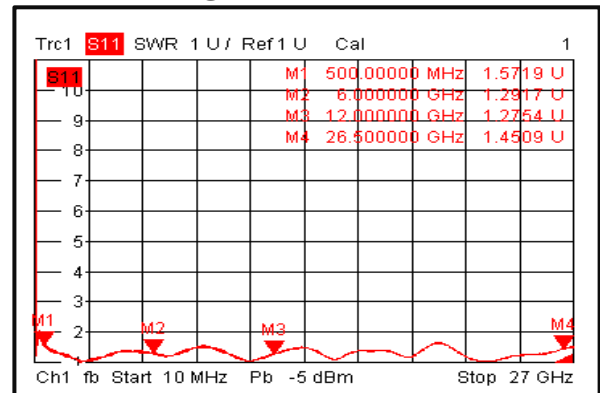
**Isolation @-40°C**



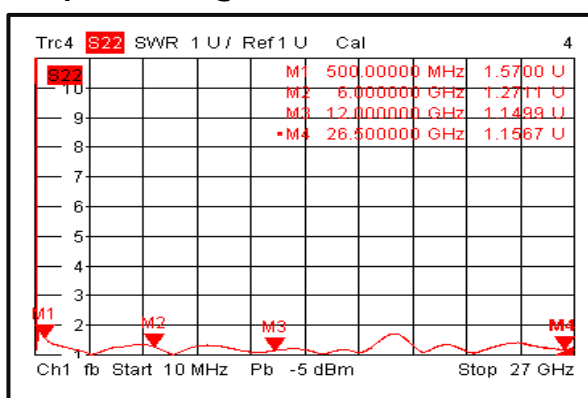
**Insertion Loss @+85°C**



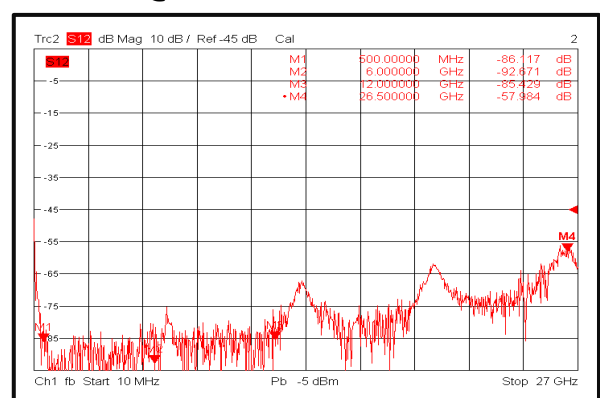
**Input VSWR @+85°C**



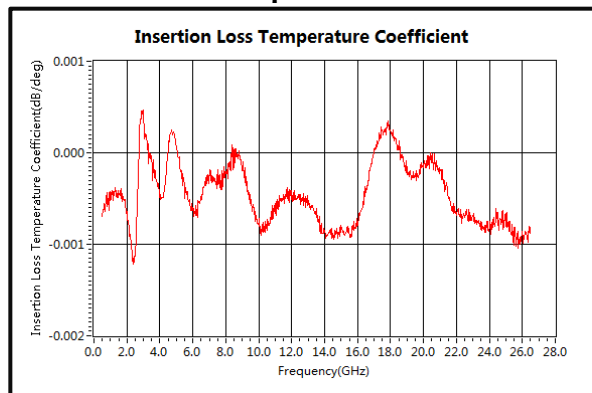
**Output VSWR @+85°C**



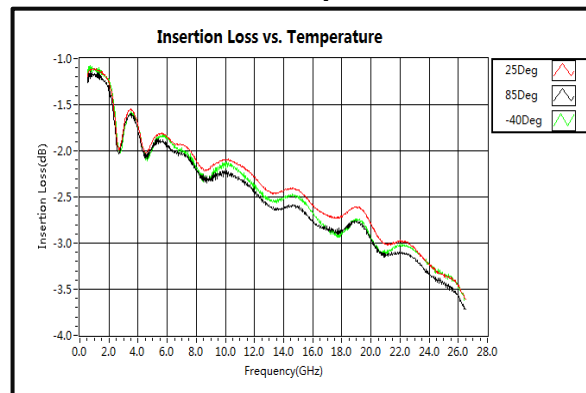
**Isolation @+85°C**



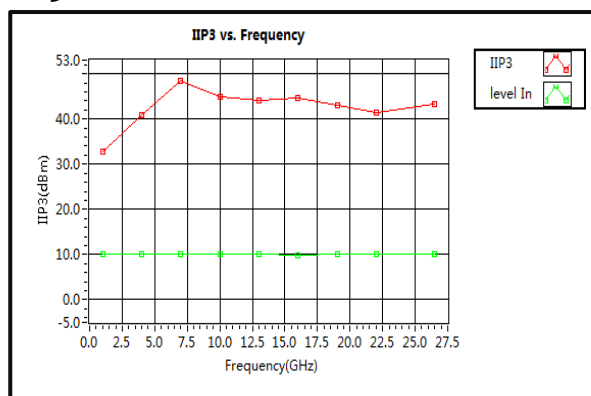
### Insertion Loss Temperature Coefficient



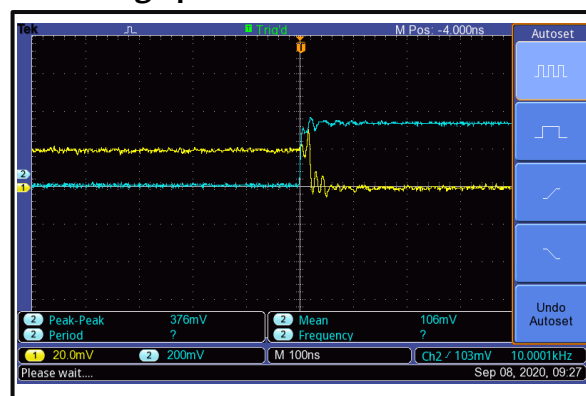
### Insertion Loss vs. Temperature



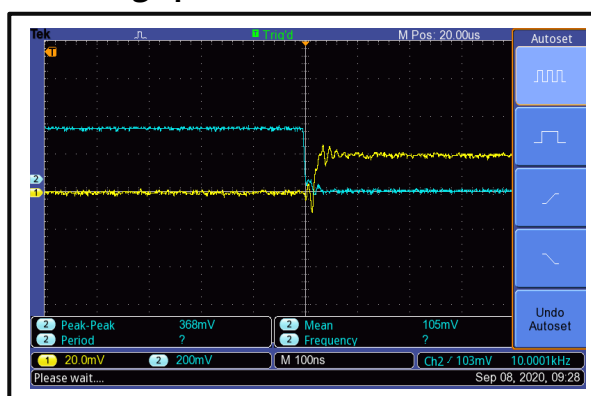
### IIP3



### Switching Speed



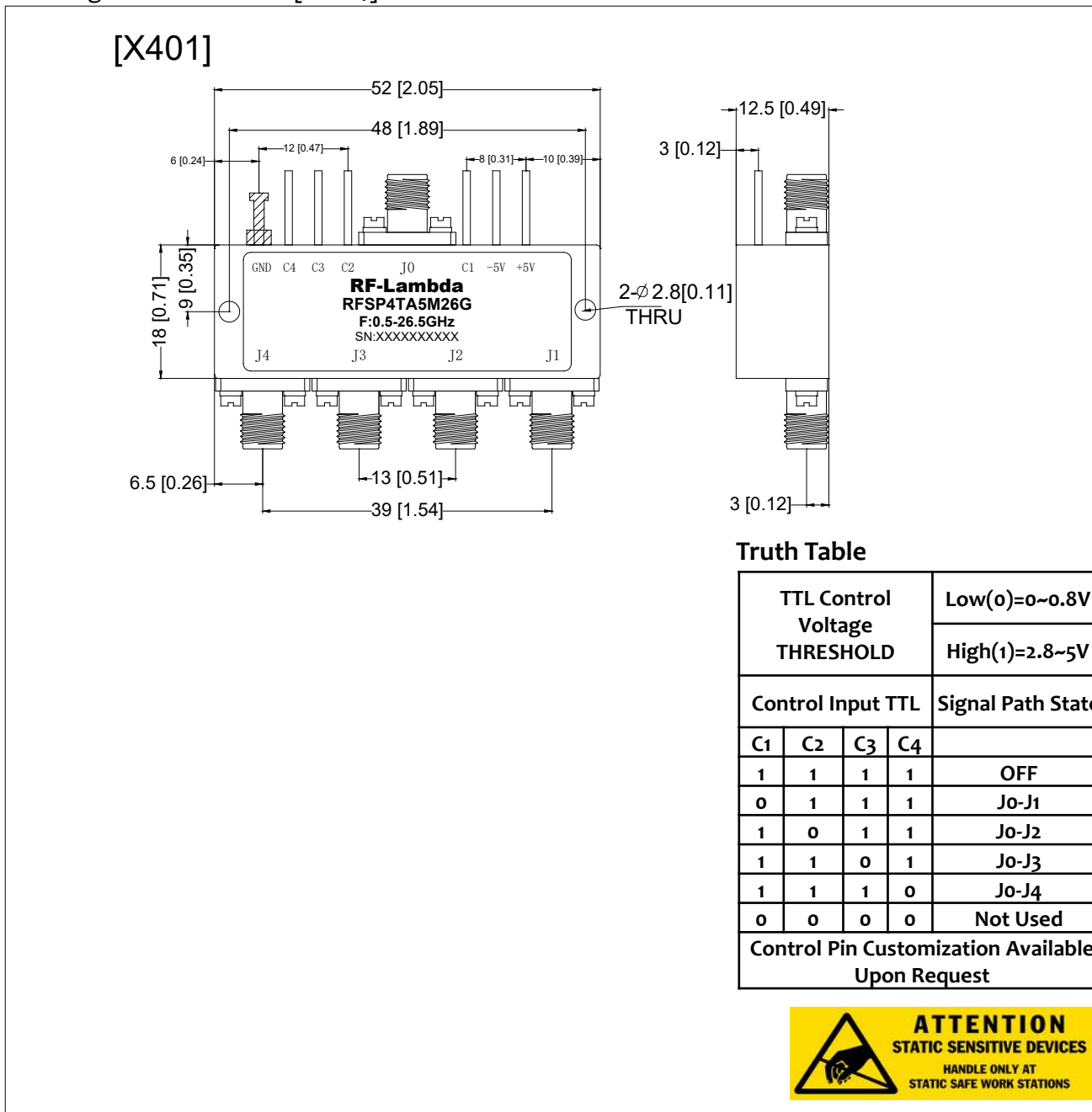
### Switching Speed



## Outline Drawing:

All Dimensions in mm [inches]

Housing Tolerances  $\pm 0.1$  [0.004]



## 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.