



# RF-LAMBDA

LEADER OF BROADBAND SOLUTIONS

RFSP4TR0125M

## Reflective 115-140MHz Coaxial SP4T Switch



### Features

- Wide Band Operation 115-140MHz
- TTL compatible driver include
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Temperature Range -45°C~+85°C
- Customization available upon request
- Hermetically sealed package up to 60,000ft available upon request.

Electrical Specifications, TA = +25° C, With Vdd = +5V,+15V, & VCTL = 0/ +5V

| Description                            | PN: RFSP4TR0125M                 |       |     |        |
|----------------------------------------|----------------------------------|-------|-----|--------|
|                                        | SP4T Reflective Switch           |       |     |        |
|                                        | Low Power Cold Switching         |       |     |        |
| Parameters                             | Min                              | Typ.  | Max | Units  |
| Frequency Range                        | 0.115-0.14                       |       |     | GHz    |
| Insertion Loss                         |                                  |       | 5.1 | dB     |
| Insertion Loss Temperature Coefficient |                                  | 0.003 |     | dB/°C  |
| Isolation                              | 40                               |       | 90  | dB     |
| Input VSWR                             |                                  |       | 1.3 |        |
| Output VSWR                            |                                  |       | 1.3 |        |
| RF Input power (CW)                    | 7                                | 8     | 10  | dBm    |
| Power Dissipation (CW)                 |                                  | 0.3   |     | W      |
| IM3                                    |                                  | 40    |     | dBc    |
| IIP3                                   |                                  | 50    |     | dBm    |
| 0.1dB Compression Po.1dB               |                                  | 23    |     | dBm    |
| Switching Speed                        |                                  |       | 500 | ns     |
| Weight                                 | 3                                |       |     | ounces |
| Impedance                              | 50                               |       |     | Ω      |
| Biasing(+5V/+15V)                      | 300/100                          |       |     | mA     |
| Input /Output Connector                | SMA-Female/SMA-Female (Standard) |       |     |        |
| Finishing                              | Gold Plating                     |       |     |        |
| Material                               | Aluminum                         |       |     |        |
| Seal                                   | Hermetically Sealed ( optional ) |       |     |        |

Reflective Coaxial Single Pole Four Throw Switch 115-140MHz



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## Absolute Maximum Ratings

|                           |                              |
|---------------------------|------------------------------|
| Biasing                   | +5V $\pm$ 10%/+15V $\pm$ 10% |
| TTL Control Voltage       | 0~0.8V/2~5V                  |
| Operating Temperature(°C) | -45 ~ +85                    |
| Storage Temperature(°C)   | -50 ~ +125                   |

## Ordering Information

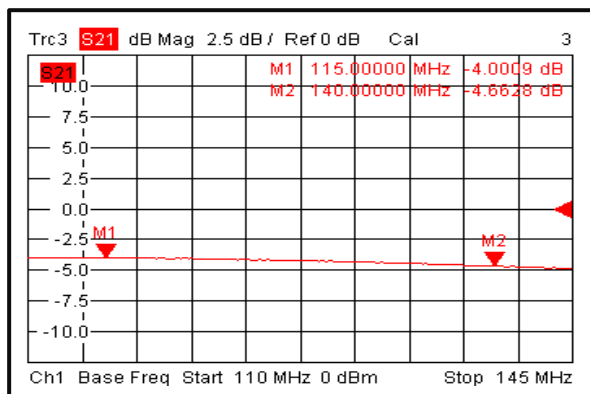
| Part No      | ECCN  | Description                      |
|--------------|-------|----------------------------------|
| RFSP4TR0125M | EAR99 | SP4T 115-140MHz PIN Diode Switch |

## Environment specifications

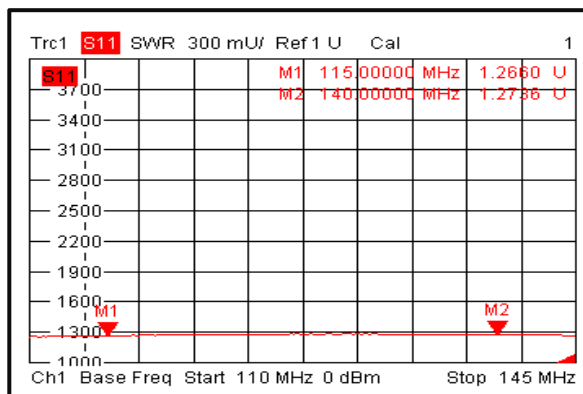
|                              |                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature (°C) | -45 ~ +85                                                                                                                            |
| Storage Temperature (°C)     | -50 ~ +125                                                                                                                           |
| Altitude                     | 30,000 ft. (Epoxy Seal Controlled environment)<br>60,000 ft 1.0psi min<br>(Hermetically Seal Un-controlled environment) ( Optional ) |
| Vibration                    | 25g rms (15 degree 2KHz) endurance, 1 hour per axis                                                                                  |
| Humidity                     | 100% RH at 35c, 95%RH at 40°C                                                                                                        |
| Shock                        | 20G for 11msc half sin wave,3 axis both directions                                                                                   |

## Typical performance plots

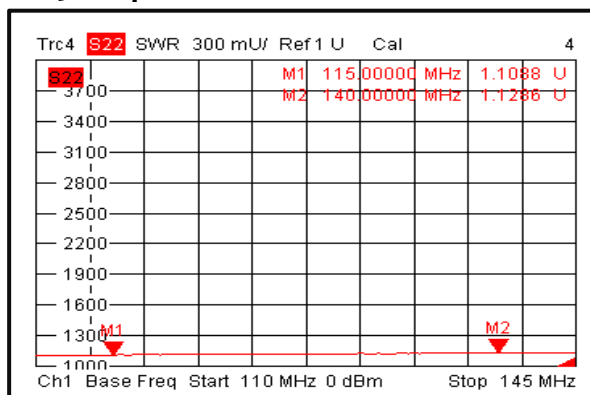
### J1-J3 Insertion Loss



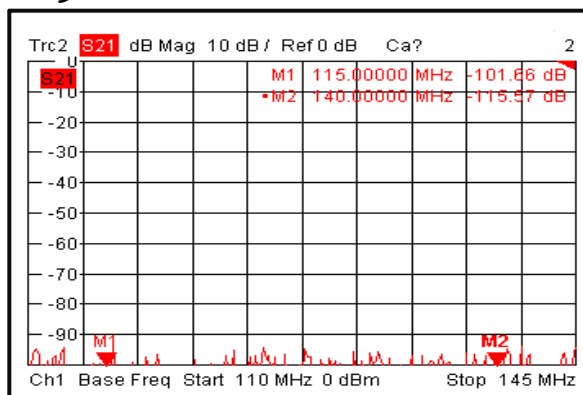
### J1-J3 Input VSWR



### J1-J3 Output VSWR



### J1-J3 Isolation



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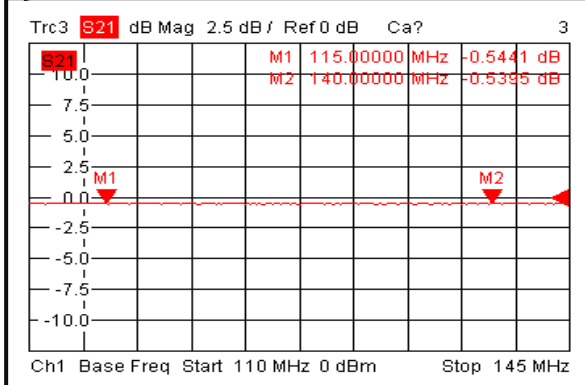


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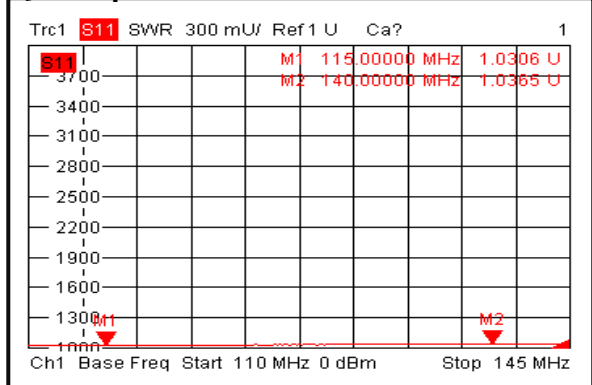
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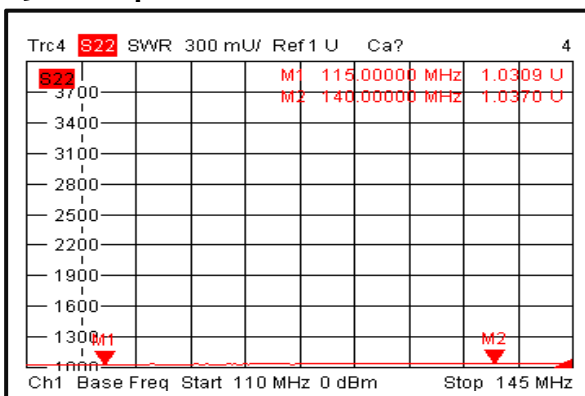
## J3-J4 Insertion Loss



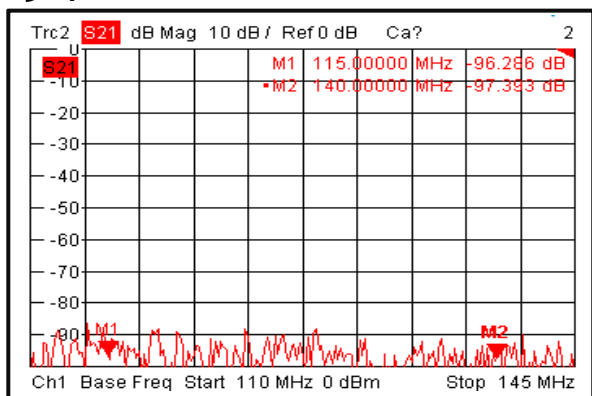
## J3-J4 Input VSWR



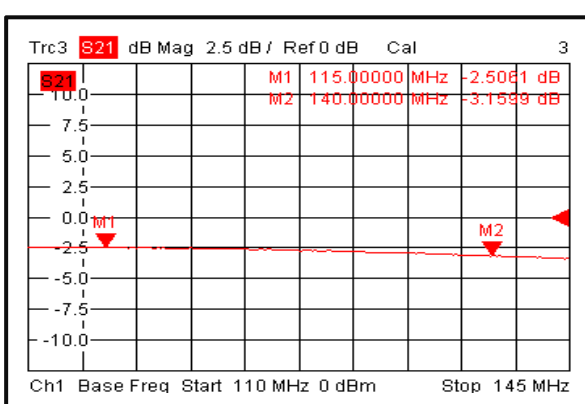
## J3-J4 Output VSWR



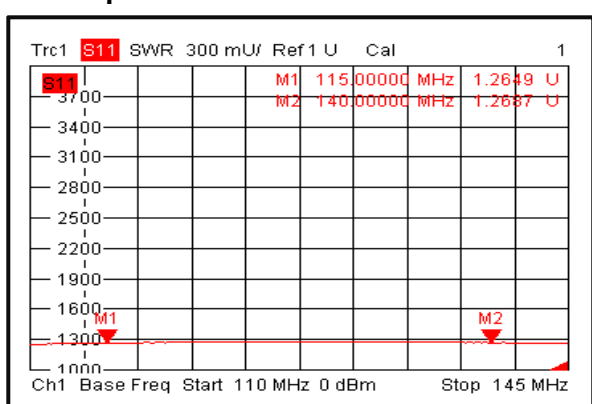
## J3-J4 Isolation



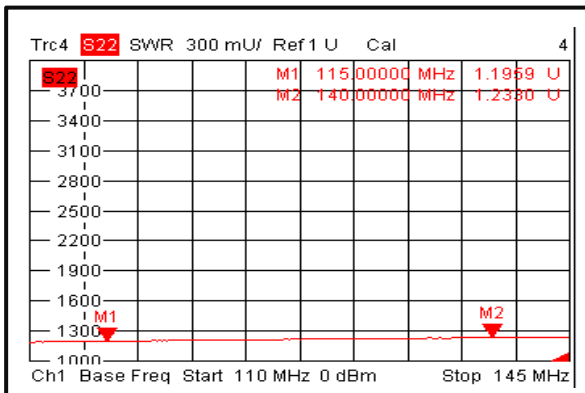
## J1-J2 Insertion Loss



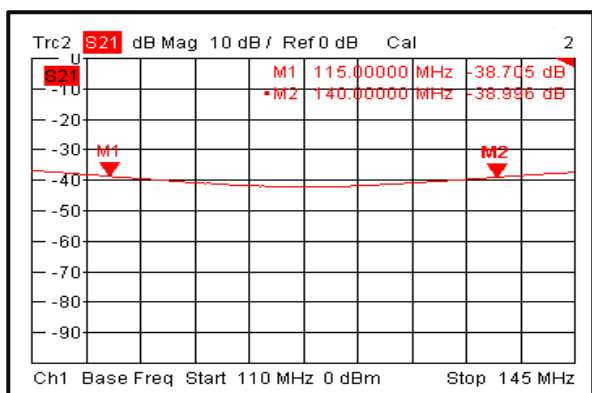
## J1-J2 Input VSWR



## J1-J2 Output VSWR



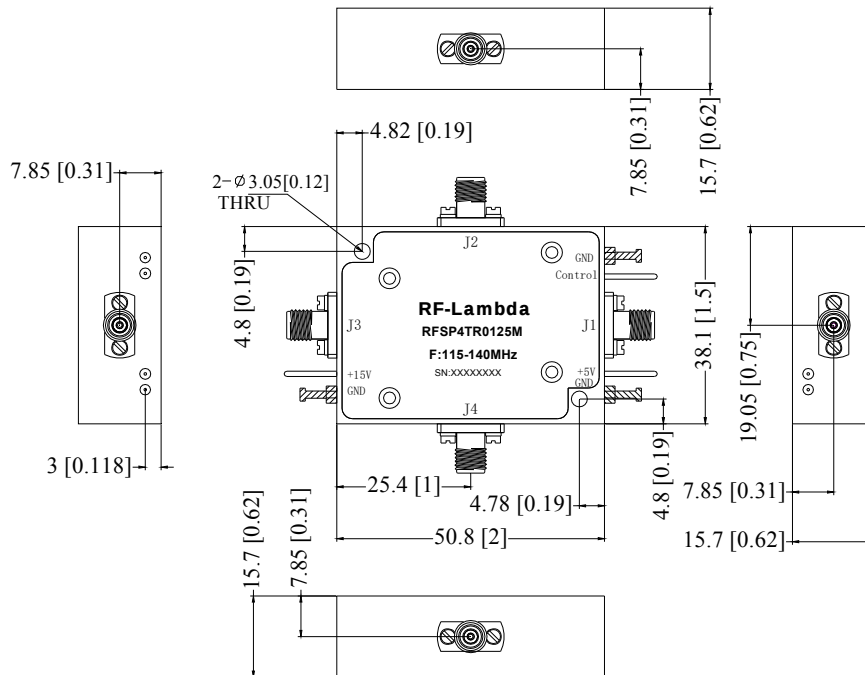
## J2-J3 Isolation



Reflective Coaxial Single Pole Four Throw Switch 115-140MHz

### Outline Drawing:

All Dimensions in mm (inches)



## Truth Table

| Control Input TTL | State          |
|-------------------|----------------|
| 1                 | J1-J3<br>J1-J2 |
| 0                 | J3-J4<br>J1-J2 |

Control Pin Customization available upon request



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