

## Reflective Coaxial SP2T Switch 20 - 500MHz



Note: Photo is for illustration purposes only.  
Please refer to outline drawing.

### Features

- Wide Band Operation 20-500MHz
- 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,  $T_A = +25\text{ }^{\circ}\text{C}$ ,  $V_{dd} = +5\text{V}$ ,  $TTL = 0 / +5\text{V}$

| Description                                              | PN: RFSP2TR0005MK              |       |      |                        |
|----------------------------------------------------------|--------------------------------|-------|------|------------------------|
|                                                          | SP2T Reflective Switch         |       |      |                        |
|                                                          | High Power Cold Switching      |       |      |                        |
| Parameters                                               | Min.                           | Typ.  | Max. | Units                  |
| Frequency Range                                          | 20                             |       | 500  | MHz                    |
| Insertion Loss                                           |                                |       | 1.0  | dB                     |
| Insertion Loss Temperature Coefficient                   |                                | 0.003 |      | dB/ $^{\circ}\text{C}$ |
| Isolation                                                | 40                             |       |      | dB                     |
| Input VSWR                                               |                                |       | 1.5  | :1                     |
| Output VSWR                                              |                                |       | 1.5  | :1                     |
| RF Input Power<br>Pulse 1% duty cycle (1 $\mu\text{s}$ ) |                                |       | 500  | W                      |
| DC Power Dissipation                                     |                                | 1     |      | W                      |
| 0.1dB Compression Point (Po.1dB )                        |                                | 50    |      | dBm                    |
| IIP3                                                     |                                | 55    |      | dBm                    |
| Switching Speed                                          |                                | 2.5   | 3    | $\mu\text{s}$          |
| Weight                                                   |                                |       |      | ounces                 |
| Impedance                                                | 50                             |       |      | $\Omega$               |
| Bias Current (+5V)                                       | 200                            |       |      | mA                     |
| Input / Output Connectors                                | N-Female                       |       |      |                        |
| Finish                                                   | Gold Plated                    |       |      |                        |
| Material                                                 | Aluminum                       |       |      |                        |
| Sealing                                                  | Hermetically Sealed (Optional) |       |      |                        |

**Absolute Maximum Ratings**

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

**Ordering Information**

| Part No.      | Description                     |
|---------------|---------------------------------|
| RFSP2TR0005MK | SP2T 20-500MHz PIN Diode Switch |

**Notes:**

1. If the device operates in high power state, case temperature must be lower than 60°C.
2. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

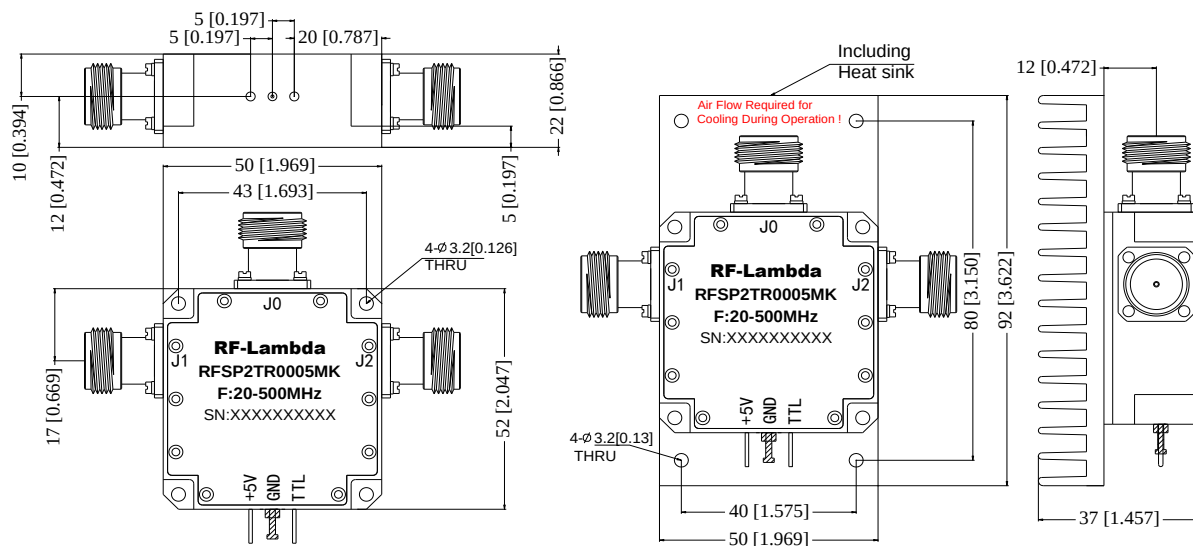
**Environmental Specifications and Test Standards**

| 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)                                                                                                                                                                    |

## Outline Drawing:

All Dimensions in mm [inches]

Housing Tolerances  $\pm 0.2$  [0.008]



### Notes:

- . Heatsink Included - Mandatory for Operation .
- . Heatsink NOT Included - Mandatory for Operation.

### Truth Table

|                                                  |                   |
|--------------------------------------------------|-------------------|
| TTL Control Voltage THRESHOLD                    | Low(0)=0~0.8V     |
|                                                  | High(1)=2.8~5V    |
| Control Input TTL                                | Signal Path State |
| 0                                                | J1                |
| 1                                                | J2                |
| Control Pin Customization available upon request |                   |



**ATTENTION**  
STATIC SENSITIVE DEVICES  
HANDLE ONLY AT  
STATIC SAFE WORK STATIONS

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