

V-Band Reflective FET Switch

50-75 GHz/SP8T/ WR-15

Model: TMSP8T-050075-15

The TMSP8T-050075-15 is a V-Band switch with a TTL driver that operates between 50 and 75 GHz. The SP8T switch offers 75 dB port-to-port isolation with a typical switching speed of 100 nanoseconds. The input and output connectors of the switch are WR-15.

Features:

- Frequency range: 50-75GHz
- Low Insertion Loss: 13 dB
- Power Handling : 20 dBm
- High Isolation
- Switch Type: Reflective

Applications:

- Communication Systems
- Automatic Test Equipment
- Switching Network

Electrical Characteristics:

| Parameter | Min | Typ | Max | Units |
|---------------------|-----|------------------|-----|-------|
| Frequency range | | 50-75 | | GHz |
| Insertion Loss | | 13 | | dB |
| Isolation | | 75 | | dB |
| Switch Speed | | 100 | | ns |
| Input VSWR | | 1.8 | | :1 |
| Output VSWR | | 1.8 | | :1 |
| P1dB Output P1dB | | 20 | | dBm |
| DC Voltage | | +5 | | V DC |
| Control Voltage TTL | | "0"=Low;"1"=High | | V |
| DC Supply Current | | -800 | | mA |
| Switch type | | Reflective | | |

Absolute Maximum Ratings :

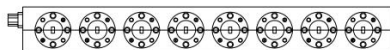
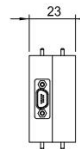
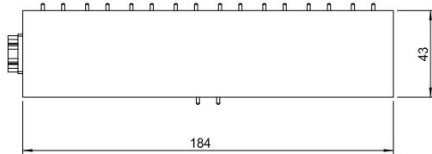
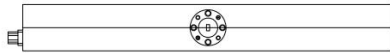
| Description | Parameter | Units |
|-----------------------|----------------------|-------|
| Supply Bias Voltage | -5 (+5%) | V |
| RF Input Power | 27 | dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V | |

Mechanical Specifications:

| Description | Parameter | Units |
|-------------------------|----------------|-------|
| Input /Output Connector | WR-15/UG-385/U | |
| Control Bias | J30J-9ZKP | |
| Size | 184*43*23 | mm |

Outline Drawing:

Unit:mm



| Truth Table | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------------------|
| TTL Control Input | | | | | | | Signal Path State |
| Bit 1 | Bit 2 | Bit 3 | Bit 4 | Bit 5 | Bit 6 | Bit 7 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | J0-J1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | J0-J2 |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | J0-J3 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | J0-J4 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | J0-J5 |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | J0-J6 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | J0-J7 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | J0-J8 |

| TTL Control Voltages &VDD | |
|---------------------------|----------------|
| Stage | Bias Condition |
| VDD | +5V (± 5%) |
| Low (0) | 0 to 0.8Vdc |
| High (1) | +3.3 Vdc |



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

Environmental Conditions:

| Parameter | Min | Typ | Max | Units |
|---------------------------------|---|-----|------|-------|
| Operating Temperature | -45 | | +85 | °C |
| Non-operating Temperature | -55 | | +125 | °C |
| Relative humidity | | 95 | | % |
| Altitude | 10,000 | | | feet |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis | | | |
| Shock(non operating) | 20G for 11msc half sin wave,3 axis both directions | | | |

Ordering Information:

| Base Number | Description | Revision |
|------------------|--|----------|
| TMSP8T-050075-15 | V-Band Reflective FET Switch 50-75 GHz,SP8T,WR-15 | Rev.1.1 |