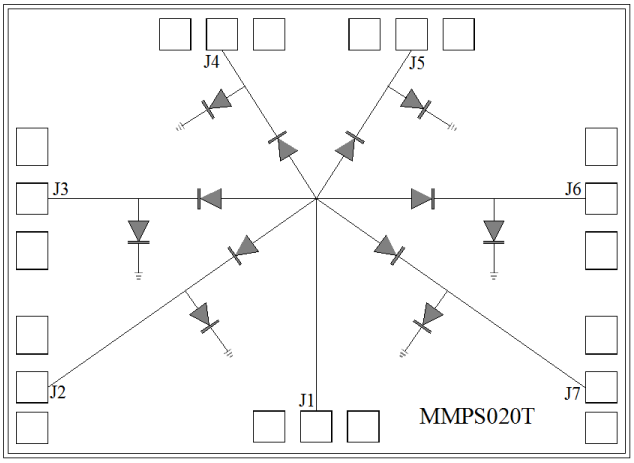
## Features

- PIN Diode SP6T Reflective design
- Frequency: 0.1-40GHz
- Isolation: 45dB Typical
- Insertion Loss: 1.2dB Typical
- Control Voltage:+5/-5V
- Switching Speed: 20ns Typical
- Die Size: 2.0 x 1.45 x 0.1 mm

## Functional Block Diagram




## Typical Applications

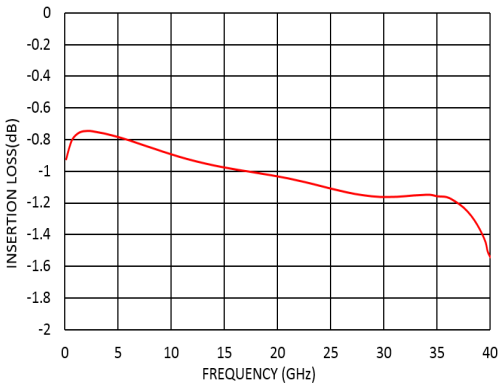
- Voltage control
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

## Electrical Specifications

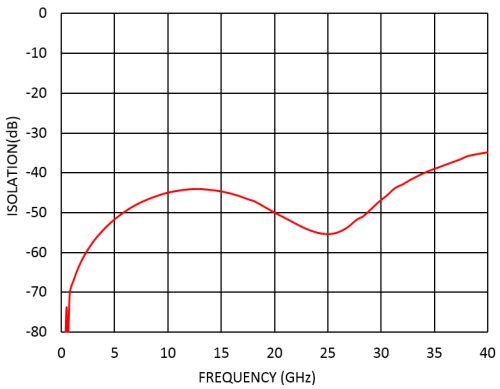
**TA = +25°C, VCTL=+5/-5V , +12mA /-10mA Typical**

| Parameters | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency | 0.1 | | 40 | GHz |
| Insertion Loss | | 1.2 | 1.8 | dB |
| Isolation | | 45 | | dB |
| Input Return Loss (ON State) | | 15 | | dB |
| Output Return Loss (OFF State) | | 18 | | dB |
| P1dB - Output 1dB Compression | | 26 | | dBm |
| IIP3-Input Third Order Intercept | | 40 | | dBm |
| Switching Speed | | 20 | | ns |

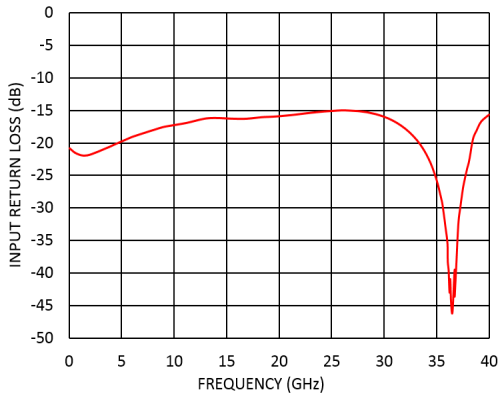
## Insertion Loss vs. Frequency



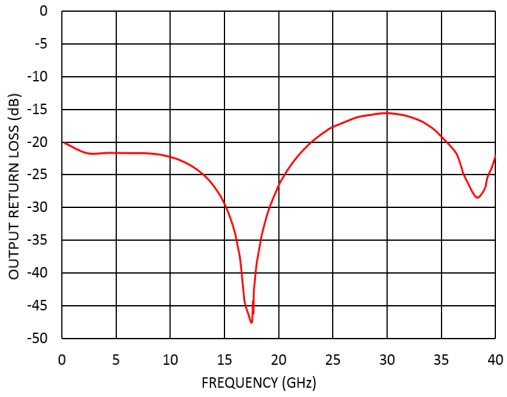

## Isolation vs. Frequency




## Input Return Loss vs. Frequency




## Output Return Loss vs. Frequency



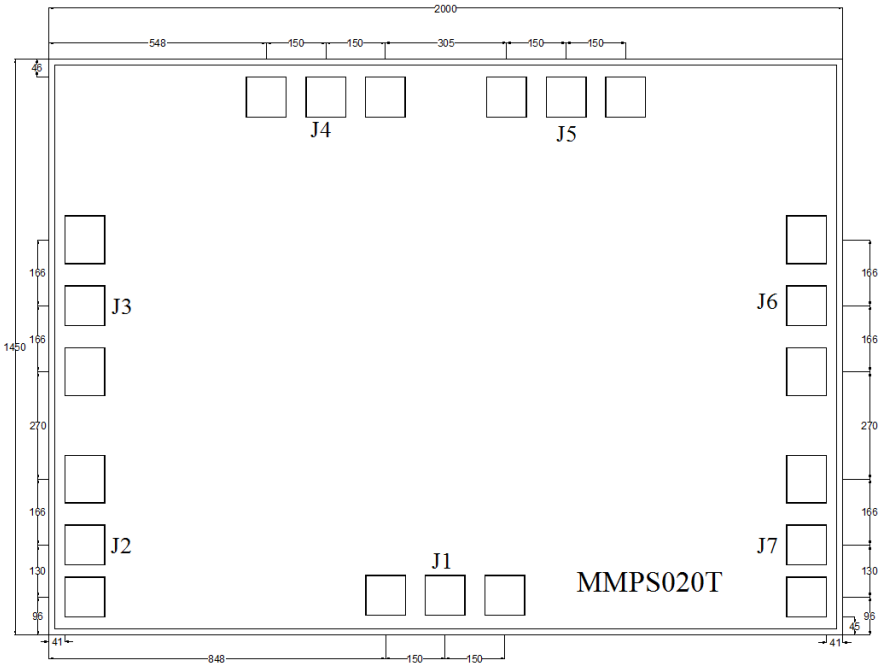
## Absolute Maximum Ratings

| | |
|---|---|
| Max Incident C.W. RF Power | +31dBm |
| DC Reverse Voltage | 25V |
| Bias Current | ±50 mA |
| Operating Temperature | -55°C to +85 °C |
| Storage Temperature | -65°C to +150 °C |

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

## Outline Drawing:

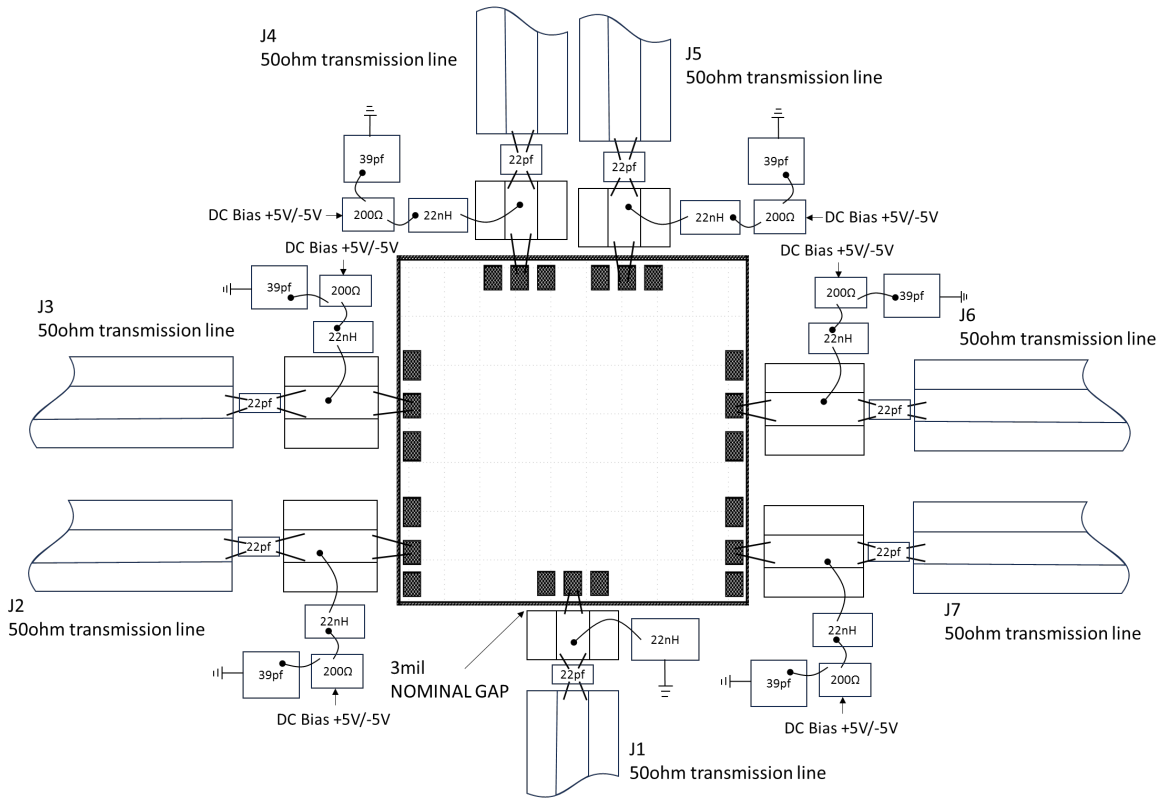
All Dimensions in µm




## True Table

| Control Voltage | | | | | | State | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| J2 | J3 | J4 | J5 | J6 | J7 | J2→J1 | J3→J1 | J4→J1 | J5→J1 | J6→J1 | J7→J1 |
| -5V | +5V | +5V | +5V | +5V | +5V | ON | OFF | OFF | OFF | OFF | OFF |
| +5V | -5V | +5V | +5V | +5V | +5V | OFF | ON | OFF | OFF | OFF | OFF |
| +5V | +5V | -5V | +5V | +5V | +5V | OFF | OFF | ON | OFF | OFF | OFF |
| +5V | +5V | +5V | -5V | +5V | +5V | OFF | OFF | OFF | ON | OFF | OFF |
| +5V | +5V | +5V | +5V | -5V | +5V | OFF | OFF | OFF | OFF | ON | OFF |
| +5V | +5V | +5V | +5V | +5V | -5V | OFF | OFF | OFF | OFF | OFF | ON |

# Assembly Drawing




**Notes:**

1. **Die thickness: 100µm**
2. **Typical bond pad is 100*100 µm²**
3. **Bond pad mentalization: Gold**
4. **Backside metallization: Gold**
5. **Backside of the die (GND)**
6. **No connection required for unlabeled bond pads**