

**Features**

- Frequency: 10-40GHz
- Insertion Loss: 1.2dB typ.
- Isolation: 42dB typ.
- P-1dB: 24dBm
- Input/Output: 50Ω
- Die Size: 2.12x 1.52x 0.1 mm

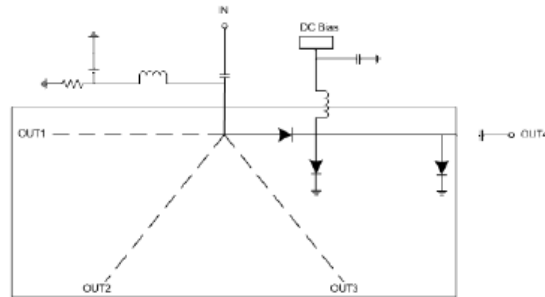
**Typical Applications**

- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

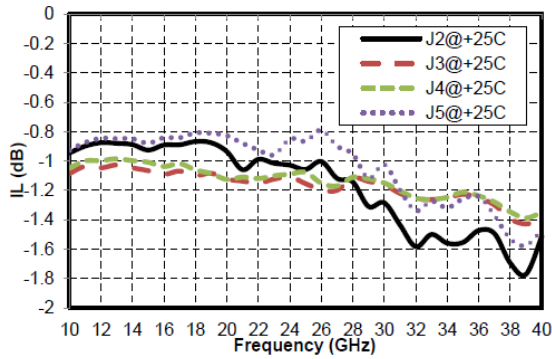
**Electrical Specifications**

TA = +25°C

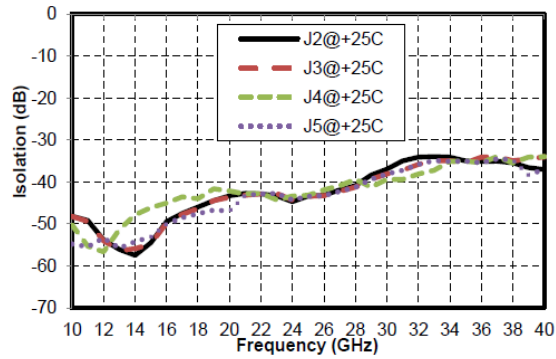
| Parameters         | Min.  | Typ. | Max. | Units |
|--------------------|-------|------|------|-------|
| Frequency Range    | 10-40 |      |      | GHz   |
| Insertion Loss     | -     | 1.2  | 1.8  | dB    |
| Isolation          | 33    | 42   | -    | dB    |
| Input Return Loss  | 9     | 12   | -    | dB    |
| Output Return Loss | 9     | 16   | -    | dB    |
| P-1dB              | -     | 24   | -    | dBm   |
| Switching Speed    | -     | 30   | -    | ns    |

**Functional Block Diagram**


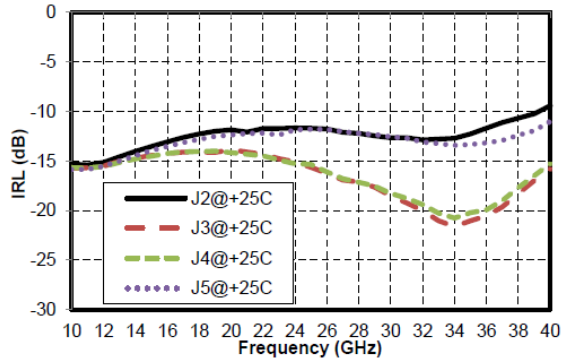
Insertion Loss vs. Operating Frequency



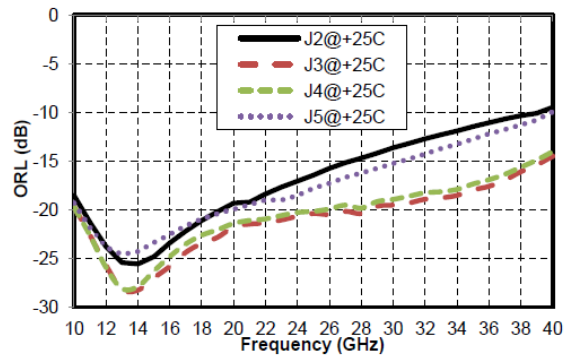
Isolation vs. Operating Frequency



Input Return Loss vs. Operating Frequency



Output Return Loss vs. Operating Frequency



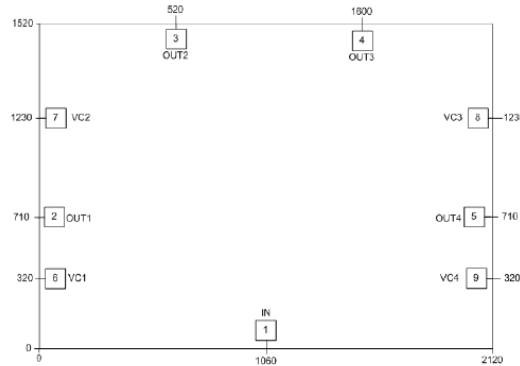
Typical Driver Connections

| CONTROL LEVEL (DC CURRENT) |       |       |       | RF OUTPUT STATE |           |           |           |
|----------------------------|-------|-------|-------|-----------------|-----------|-----------|-----------|
| VC1                        | VC2   | VC3   | VC4   | J2-J1           | J3-J1     | J4-J1     | J5-J1     |
| -10mA                      | +10mA | +10mA | +10mA | Low Loss        | Isolation | Isolation | Isolation |
| +10mA                      | -10mA | +10mA | +10mA | Isolation       | Low Loss  | Isolation | Isolation |
| +10mA                      | +10mA | -10mA | +10mA | Isolation       | Isolation | Low Loss  | Isolation |
| +10mA                      | +10mA | +10mA | -10mA | Isolation       | Isolation | Isolation | Low Loss  |



### Outline Drawing

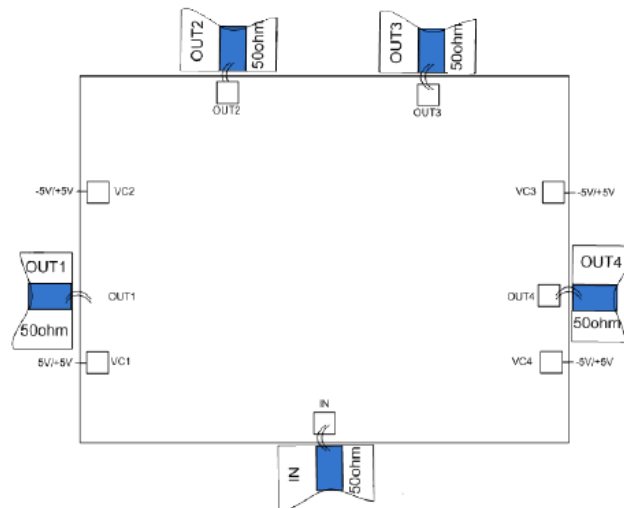
All Dimensions in  $\mu\text{m}$



### Pad Description

| Pad        | Function                               | Description                                   |
|------------|--|---|
| 1          | IN(J1)                                 | RF signal input port                          |
| 2,3,4,5    | OUT1(J2), OUT2(J3), OUT3(J4), OUT4(J5) | RF signal output port                         |
| 6,7,8,9    | VC1, VC2, VC3, VC4                     | Signal control port                           |
| Die bottom | GND                                    | Die bottom must be connected to RF/DC ground. |

### Assembly Drawing



#### Notes:

1. Die thickness: 100 $\mu\text{m}$
2. Typical bond pad is 100\*100  $\mu\text{m}^2$
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

#### Maximum Ratings:

1. Maximum input voltage: 25V
2. Maximum input power: +31dBm CW
3. Operating temperature: -55 $^{\circ}\text{C}$  to +85 $^{\circ}\text{C}$
4. Storage temperature: -65 $^{\circ}\text{C}$  to +150 $^{\circ}\text{C}$