

## 6-Bit Digital Phase Shifter

Step 5.625° / 0-360° / 0.3-3GHz /

Model: TLDP-0.3G3G-360-6

The TLDP0.3G3G-360-6 is a 6-bit digital phase shifter, Step size is 5.6° providing phase shift from 0° to 360° in 5.6° steps. This design has been optimized to minimize variation in attenuation over the phase shift range. The TLDP0.3G3G-360-6 is ideally suited for use where high phase accuracy with minimum loss variation over the phase shift range are required. Typical applications include communications antennas and phased array radars.

### Features:

- Ultra Wide Band: 0.3-3GHz
- High Phase Shift Accuracy
- High Phase Shift Range
- Low Phase Error

### Applications:

- Communications antennas
- Phased array radars

### Electrical Characteristics:

| Parameter                                 | Min | Typ   | Max | Units |
|---|-----|-------|-----|-------|
| Frequency range                           | 0.3 |       | 3   | GHz   |
| Insertion Loss                            |     | 17    |     | dB    |
| Input VSWR                                |     | 2     |     | :1    |
| Output VSWR                               |     | 2     |     | :1    |
| Phase Shift Range                         |     | 360   |     | °     |
| Phase accuracy                            |     | ±3    |     | °     |
| Power Handling                            |     |       | 25  | dBm   |
| Insertion loss variation over phase range |     |       | ±1  | dB    |
| Switching speed                           |     | 20    |     | ns    |
| DC Voltage                                |     | +5&-5 |     | V DC  |
| DC Supply Current                         |     | 30    |     | mA    |
| Number of Bits                            |     | 6     |     | Bit   |

### Absolute Maximum Ratings :

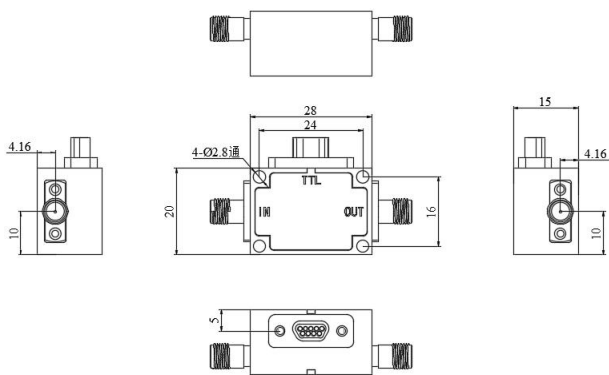
| Description           | Parameter            | Units |
|-----------------------|----------------------|-------|
| Supply Bias Voltage   | ±5 (±5%)             | V     |
| RF Input Power        | 25                   | dBm   |
| ESD sensitivity (HBm) | Class 0, passed 150V |       |

## Environmental And Physical Characteristics:

| Description              | Parameter   | Units |
|--------------------------|-------------|-------|
| Operating Temperature    | -55 To +125 | °C    |
| Storage Temperature      | -55 to +125 | °C    |
| Material                 | Al          |       |
| Finish                   | Gold Plated |       |
| Input /Output Connector  | SMA Female  |       |
| DC and control interface | J30J-9ZKP   |       |

## Outline Drawing:

Unit:mm



| Truth Table       |      |      |      |      |      |           | Signal Path State |
|-------------------|------|------|------|------|------|-----------|-------------------|
| TTL Control Input |      |      |      |      |      |           |                   |
| Bit1              | Bit2 | Bit3 | Bit4 | Bit5 | Bit6 |           |                   |
| 0                 | 0    | 0    | 0    | 0    | 0    | Reference |                   |
| 1                 | 0    | 0    | 0    | 0    | 0    | 5.625     |                   |
| 0                 | 1    | 0    | 0    | 0    | 0    | 11.25     |                   |
| 0                 | 0    | 1    | 0    | 0    | 0    | 22.5      |                   |
| 0                 | 0    | 0    | 1    | 0    | 0    | 45        |                   |
| 0                 | 0    | 0    | 0    | 1    | 0    | 90        |                   |
| 0                 | 0    | 0    | 0    | 0    | 1    | 180       |                   |
| 1                 | 1    | 1    | 1    | 1    | 1    | 354.375   |                   |

Note: +3.3V~+5V is "1"; 0V is "0"

| PIN      | 1-6       | 7   | 8   | 9   |
|----------|-----------|-----|-----|-----|
| Function | Bit1~Bit6 | -5V | +5V | GND |

## Ordering Information:

| Base Number      | Description                              | Revision |
|------------------|--|----------|
| TLDP0.3G3G-360-6 | 6-Bit Digital Phase Shifter,0.3-3GHz,SMA | Rev.1.1  |