

## 6-Bit Digital Phase Shifter

Step 5.625°/0-360°/ 0.3-3GHz

Model: TLDP0.3G3G-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:

- Frequency range: 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		V DC
DC Supply Current		20		mA
Number of Bits		6		Bit
Impedance		50		Ohms

## Environmental And Physical Characteristics:

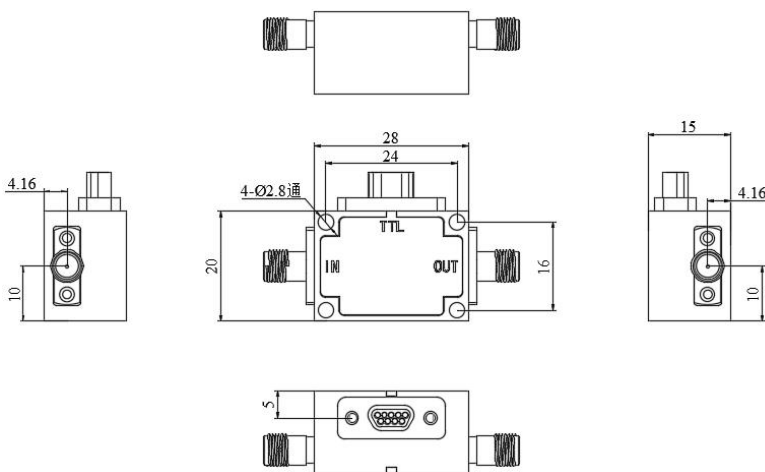
Description	Parameter	Units
Input /Output Connector	SMA Female/SMA Female	
DC and control interface	J30J-9ZKP	
Size	28*20*15	mm

## Absolute Maximum Ratings :

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

## Outline Drawing:

Unit:mm



Truth Table						
TTL Control Input						Signal Path
Bit1	Bit2	Bit3	Bit4	Bit5	Bit6	State
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	NC	+5V	GND



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			

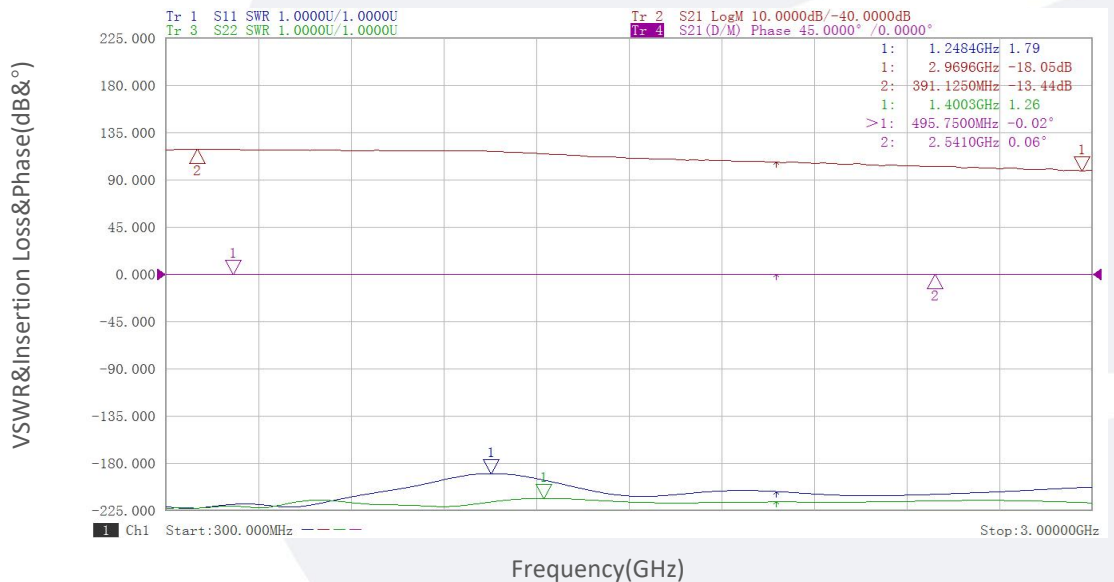
### Ordering Information:

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

### Typical Performance Data:

0° :

#### VSWR&Insertion Loss&Phase vs Frequency

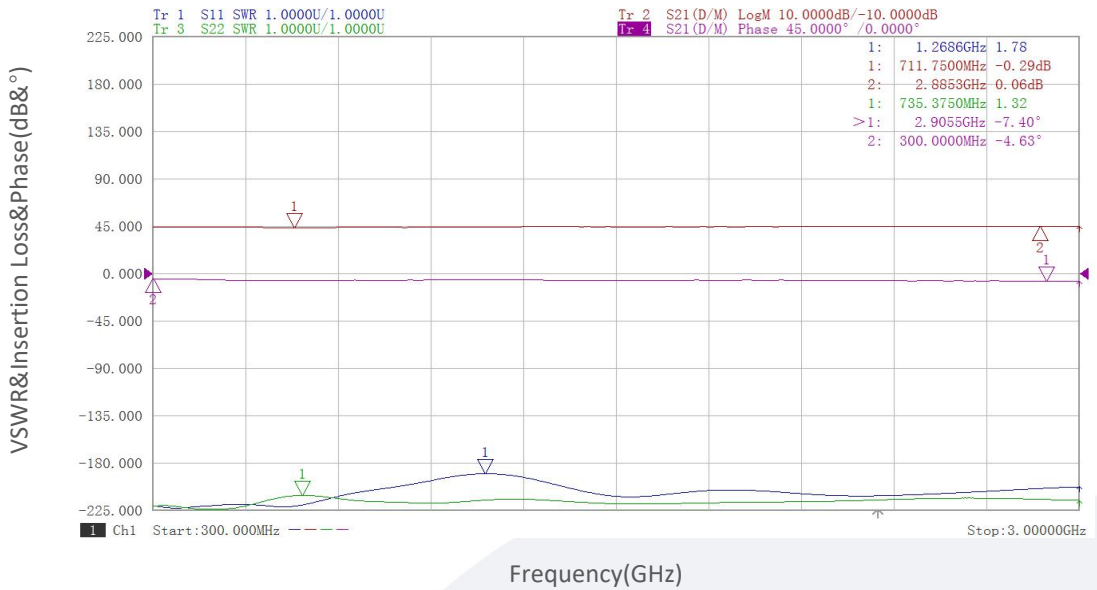


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

5.625° :

**VSWR&Insertion Loss&Phase vs Frequency**



11.25° :

**VSWR&Insertion Loss&Phase vs Frequency**

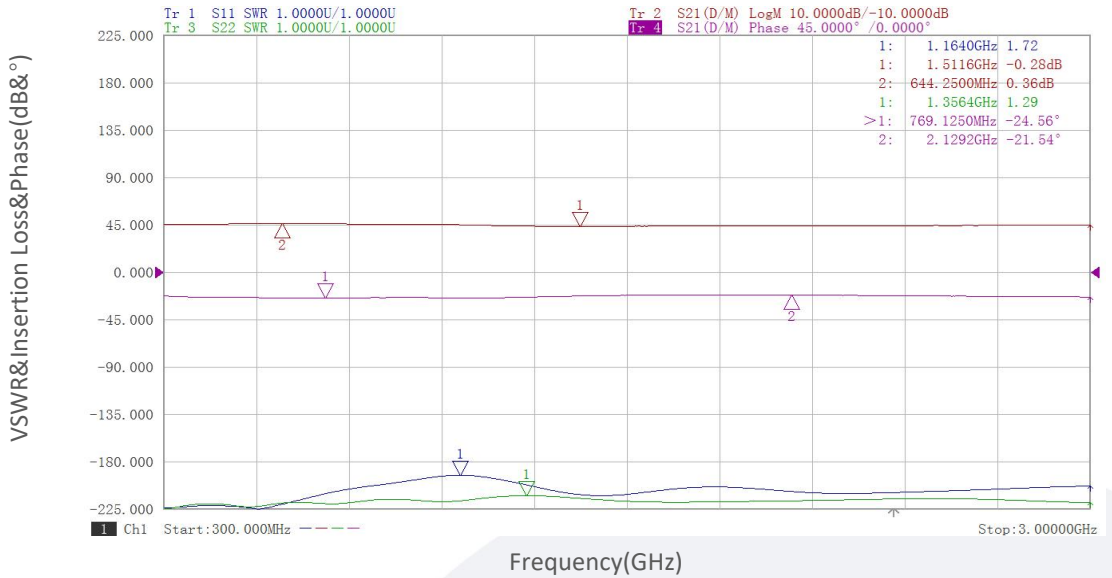


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

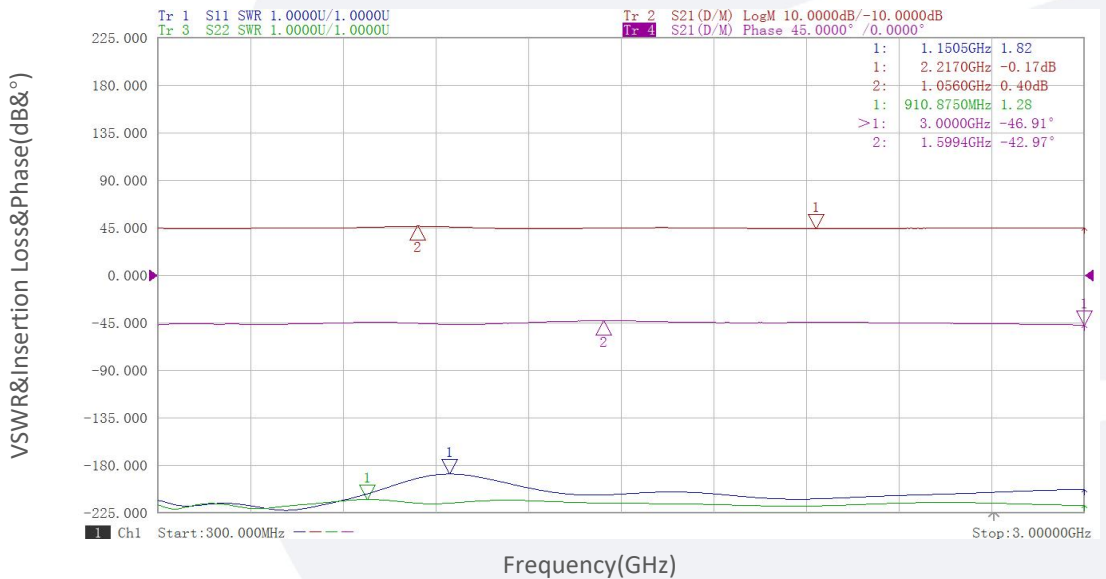
22.5° :

**VSWR&Insertion Loss&Phase vs Frequency**



45° :

**VSWR&Insertion Loss&Phase vs Frequency**

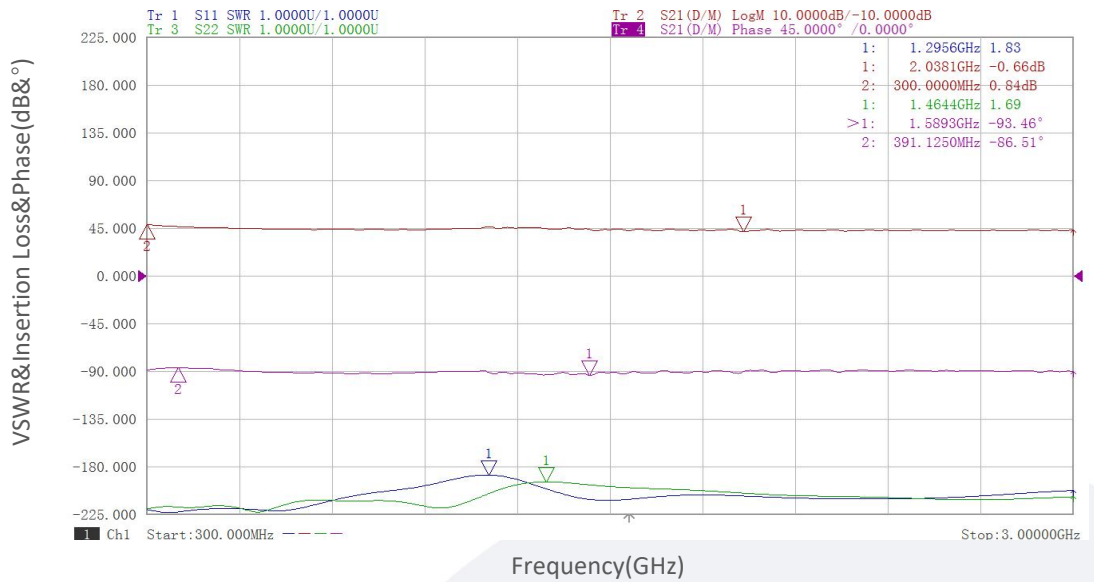


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

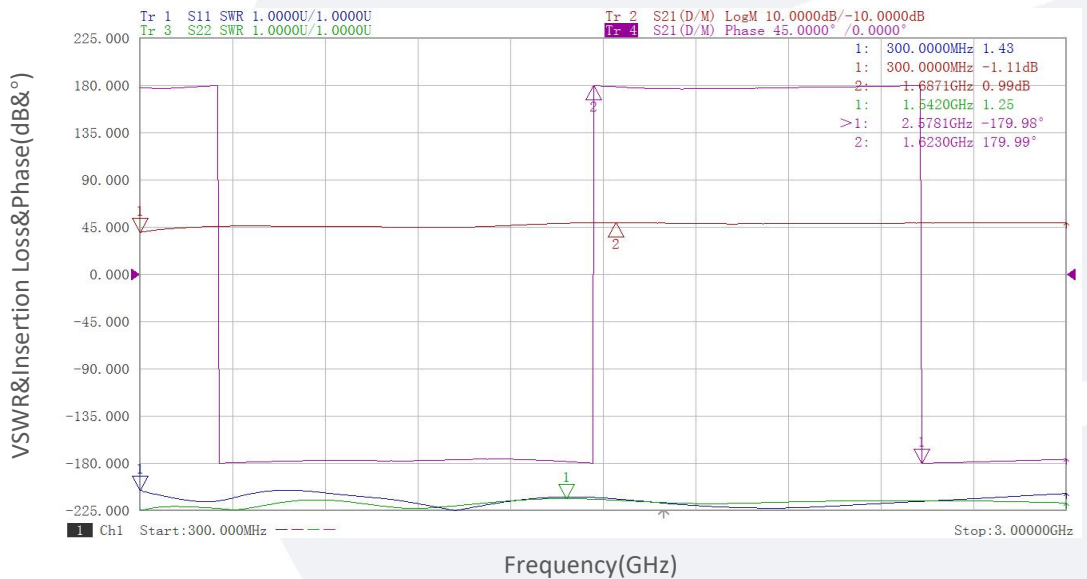
90° :

**VSWR&Insertion Loss&Phase vs Frequency**



180° :

**VSWR&Insertion Loss&Phase vs Frequency**

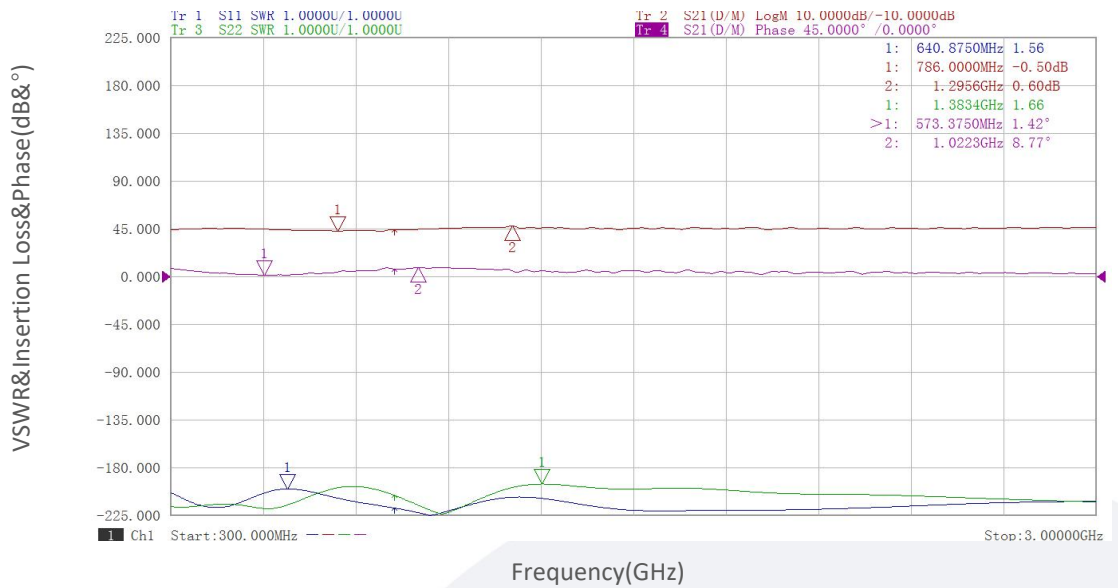


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

**Typical Performance Data:**

360° :

**VSWR&Insertion Loss&Phase vs Frequency**



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