

6-Bit Digital Phase Shifter

Step: 5.625°/0-360°/4-8GHz

Model: TLDP4G8G-360-6

The TLDP4G8G-360-6 is a 6-bit digital phase shifter, step size is 5.625° providing phase shift from 0° to 360°. This design has been optimized to minimize variation in attenuation over the phase shift range. The TLDP4G8G-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: 4-8GHz
- 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	4		8	GHz
Insertion Loss		10		dB
Input VSWR		1.6		:1
Output VSWR		1.6		:1
Phase Shift Range		360		°
Phase accuracy		±10		°
Power Handling			27	dBm
Switching speed		100		ns
DC Voltage		5		V DC
DC Supply Current		20		mA
Number of Bits		6		Bit
Impedance		50		Ohms

Envrionmental And Physical Characteristics:

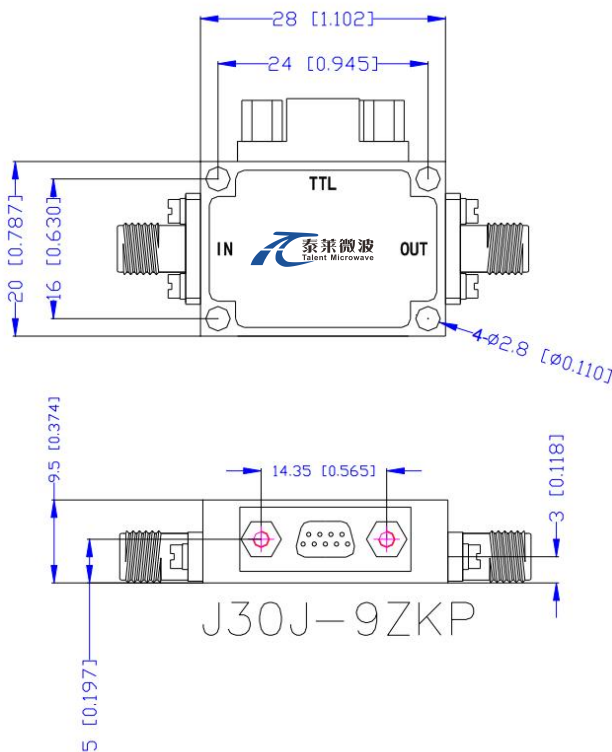
Description	Parameter	Units
Input /Output Connector	SMA Female/SMA Female	
DC and control interface	J30J-9ZKP	
Size	28*20*19.5	mm

Absolute Maximum Ratings :

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

Outline Drawing:

Unit:mm



Truth Table						
TTL Control Input						Signal Path State
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: +5V is "1"; 0V is "0"



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

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

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			

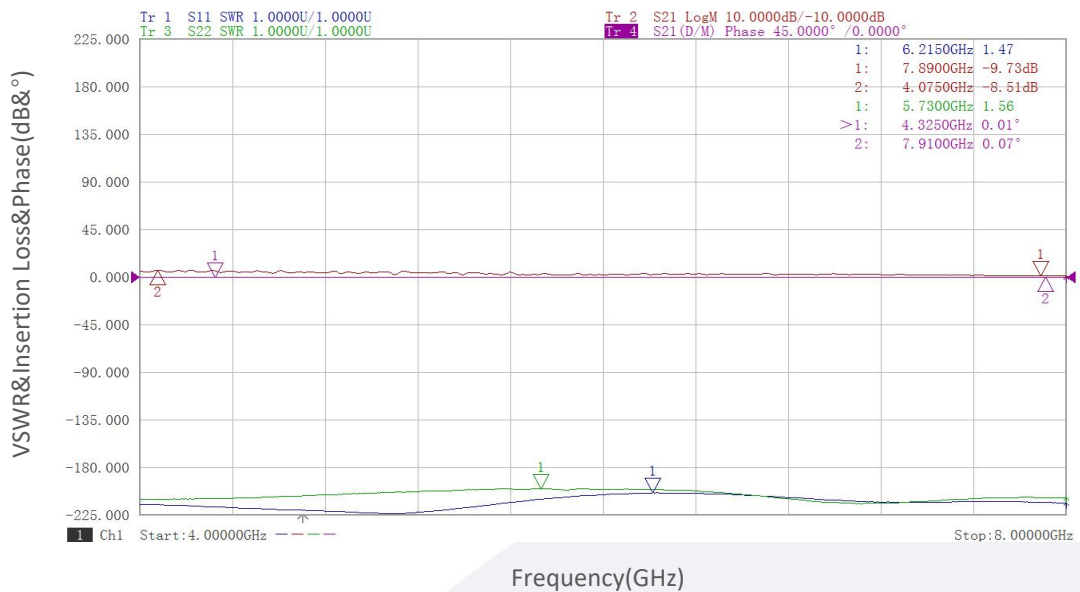
Ordering Information:

Base Number	Description	Revision
TLDP4G8G-360-6	6-Bit Digital Phase Shifter, 4-8GHz,SMA	Rev.1.0

Typical Performance Data:

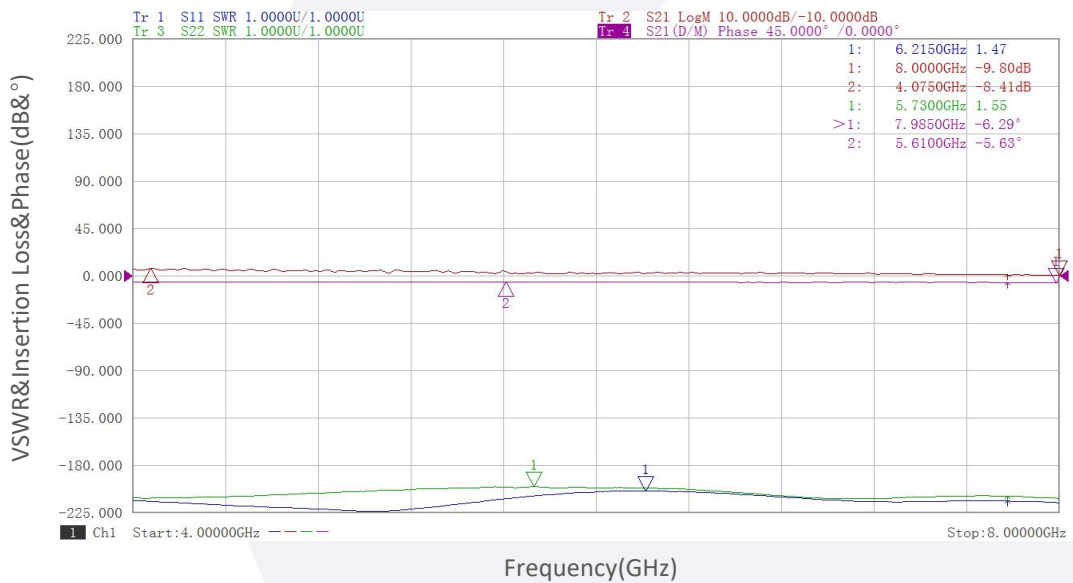
0° :

VSWR&Insertion Loss&Phase vs Frequency



5.625° :

VSWR&Insertion Loss&Phase vs Frequency

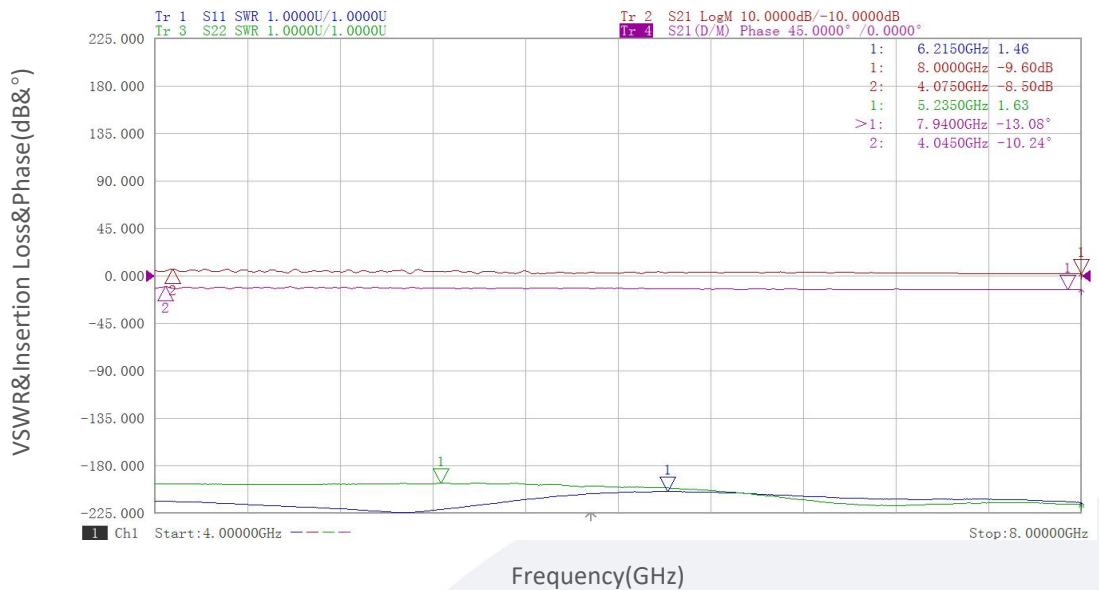


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

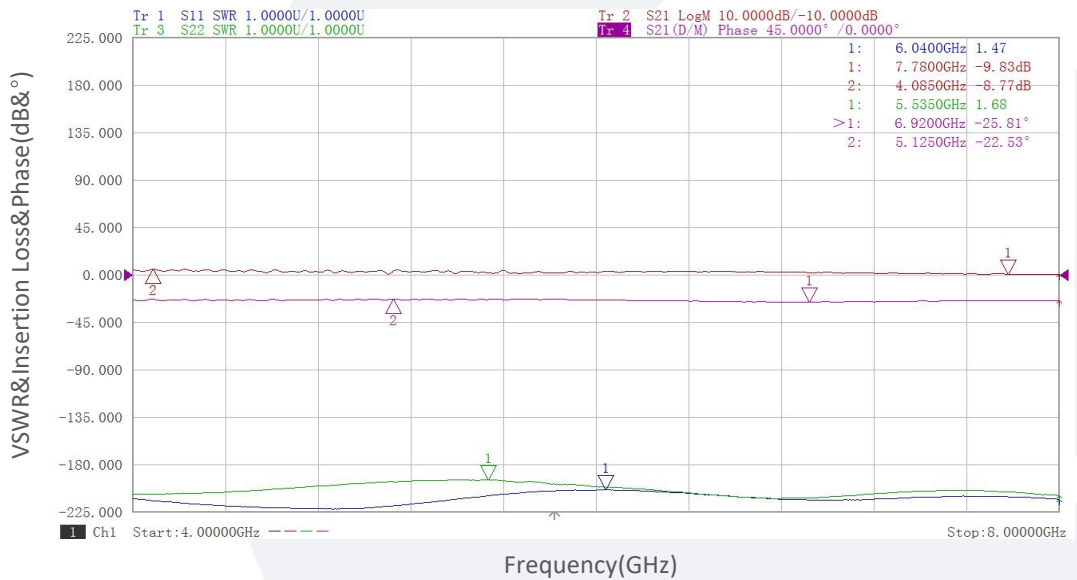
11.25° :

VSWR&Insertion Loss&Phase vs Frequency



22.5° :

VSWR&Insertion Loss&Phase vs Frequency

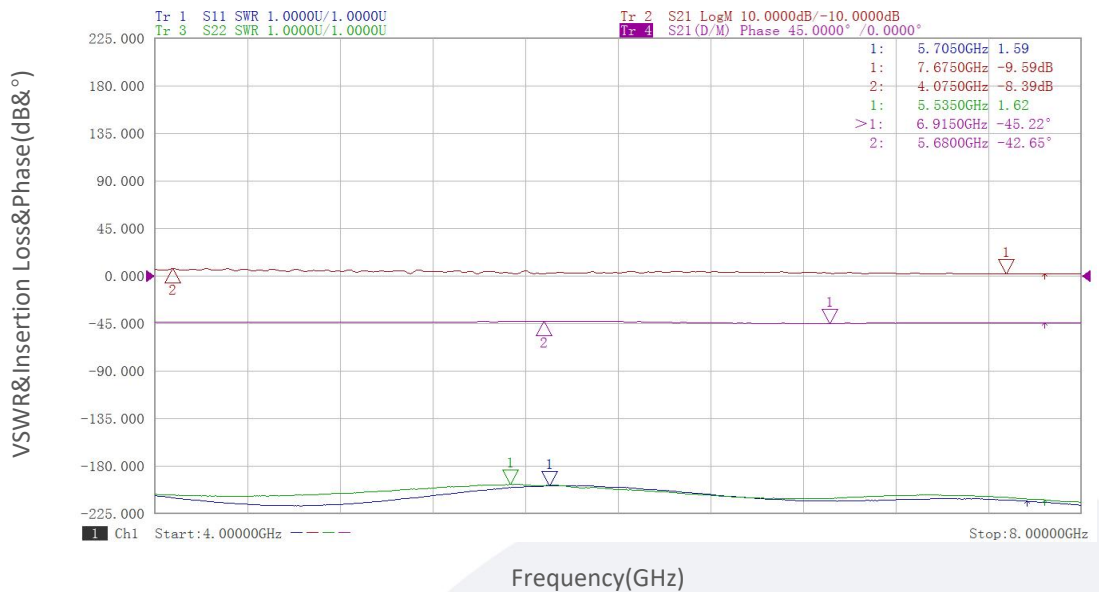


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

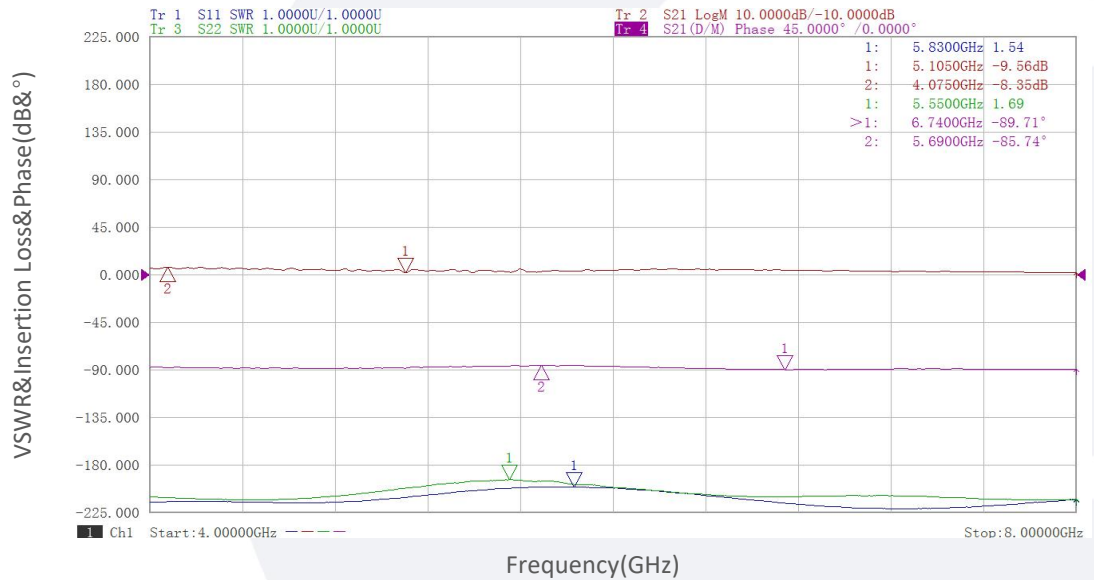
45° :

VSWR&Insertion Loss&Phase vs Frequency



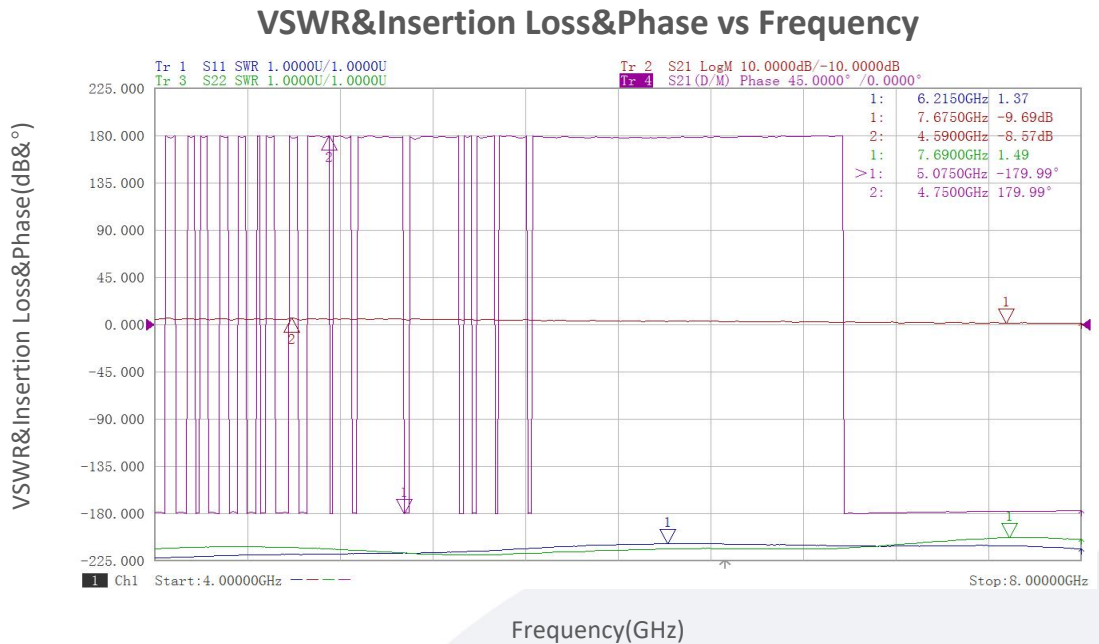
90° :

VSWR&Insertion Loss&Phase vs Frequency

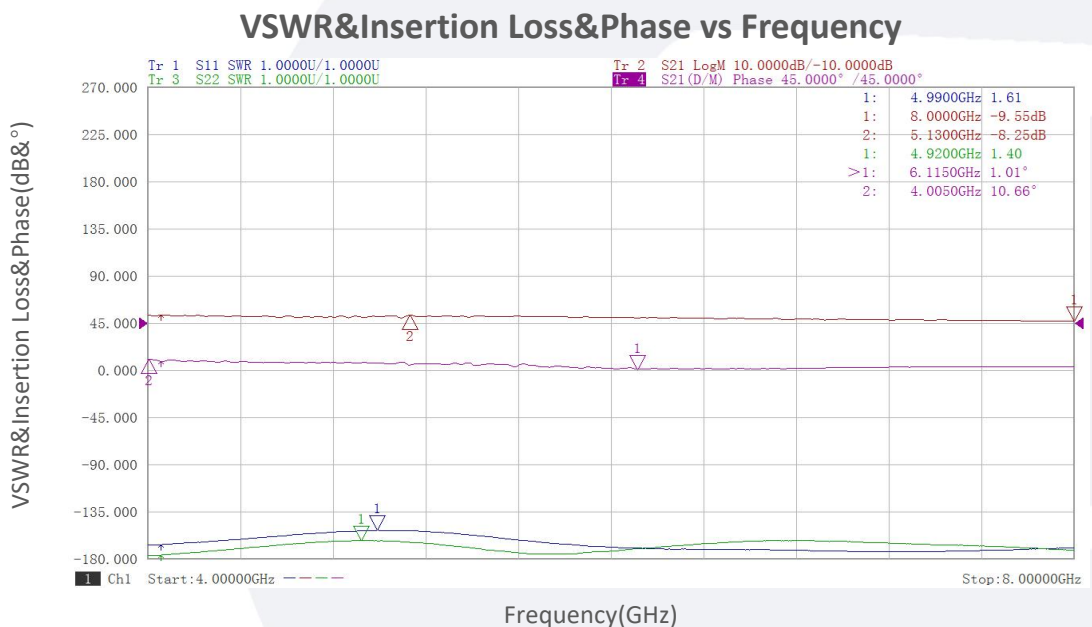


Typical Performance Data:

180° :



360° :



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.