

6-Bit Digital Phase Shifter

Step 5.625° / 0-360° / 18-40GHz /

Model: TLDP18G40G-360-6

The TLDP18G40G-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 TLDP18G40G-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: 18-40GHz
- 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	18		40	GHz
Insertion Loss		17	20	dB
Input VSWR		2	2.5	:1
Output VSWR		2	2.5	:1
Phase Shift Range		360		°
Phase accuracy		±10		°
Power Handling			25	dBm
Insertion loss variation over phase range			±1	dB
Switching speed		100		ns
DC Voltage		+5		V DC
DC Supply Current		30		mA
Number of Bits		6		Bit

Absolute Maximum Ratings :

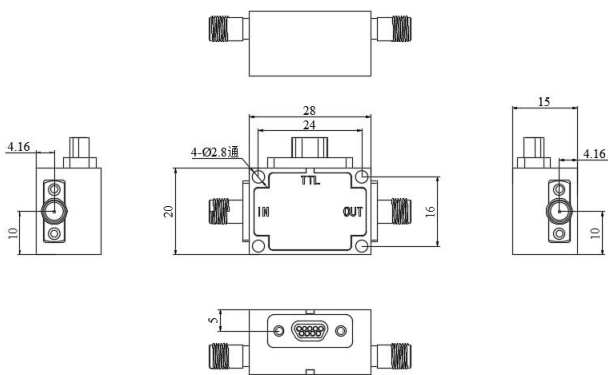
Description	Parameter	Units
Supply Bias Voltage	±5 (±5%)	V
RF Input Power	25	dBm
ESD sensitivity (HBm)	Class 0, passed 150V	

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	2.92mm 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	GND	NC

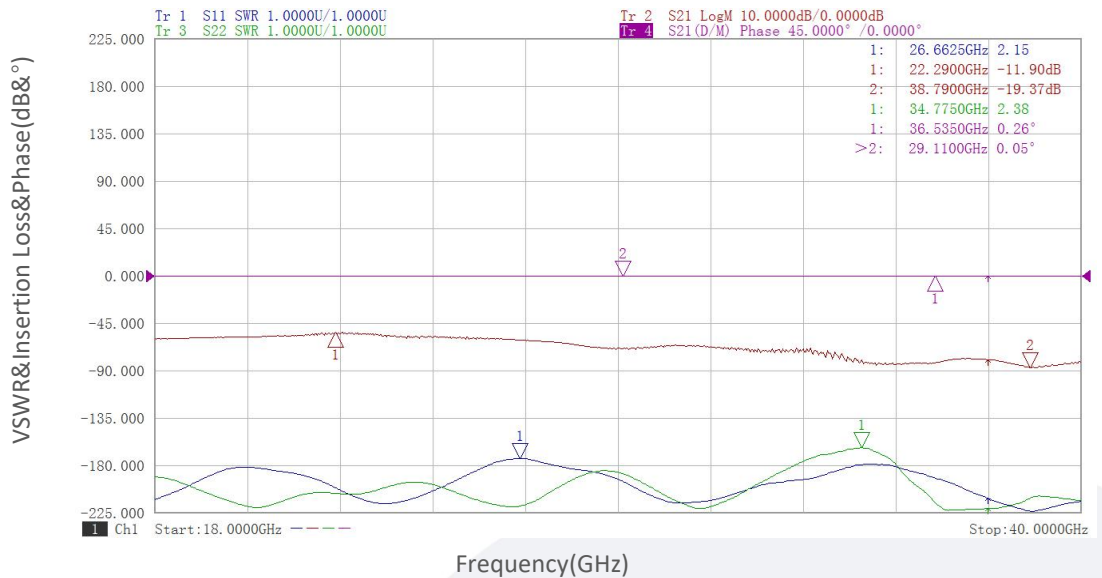
Ordering Information:

Base Number	Description	Revision
TLDP18G40G-360-6	6-Bit Digital Phase Shifter,18-40GHz,2.92mmFemale	Rev.1.1

Typical Performance Data:

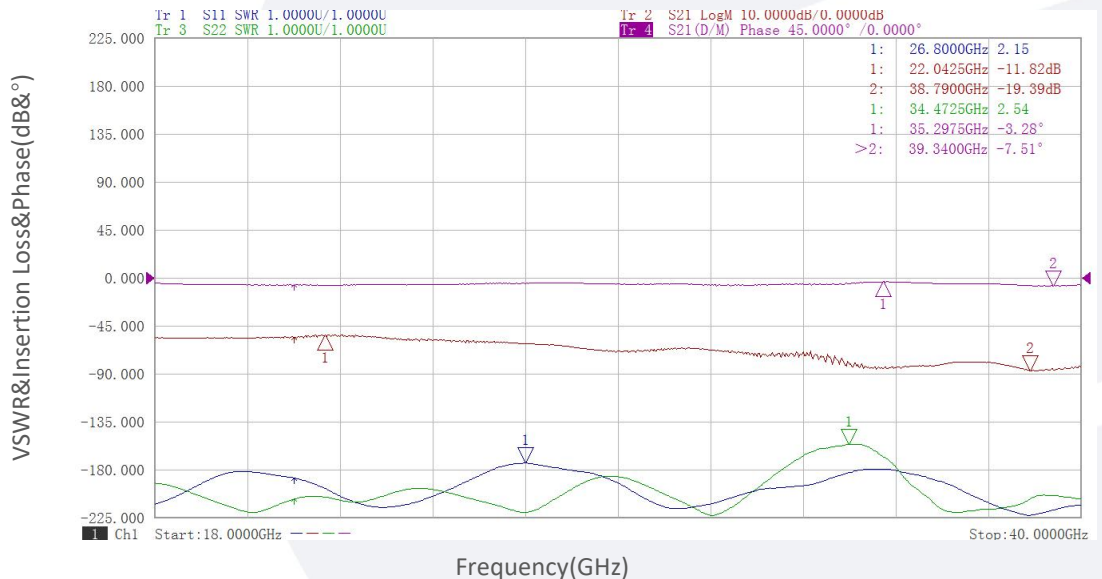
0° :

VSWR&Insertion Loss&Phase vs Frequency



5.625° :

VSWR&Insertion Loss&Phase vs Frequency

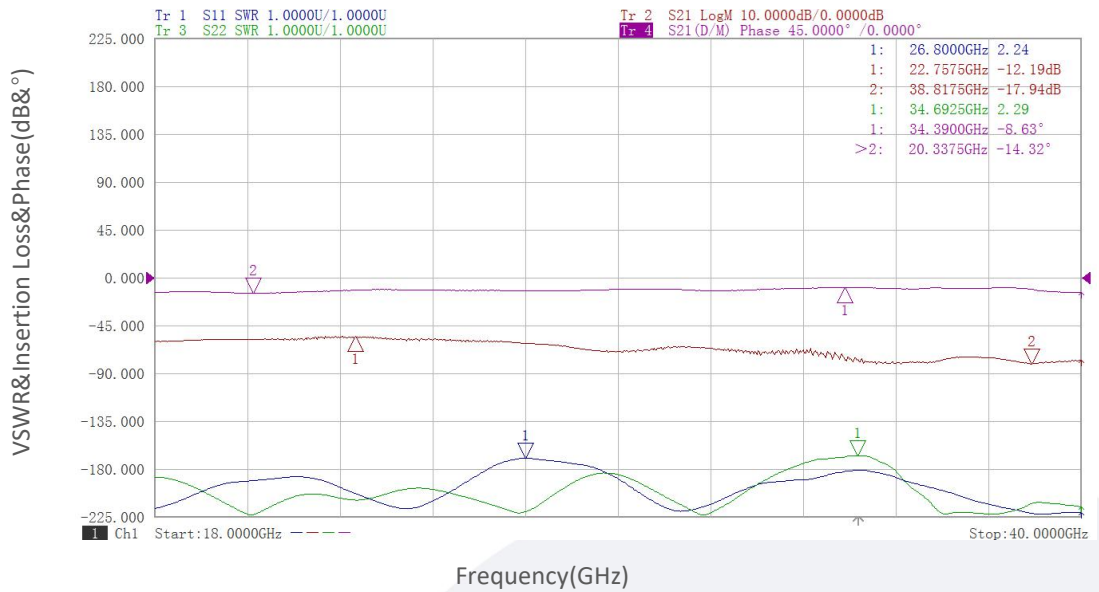


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

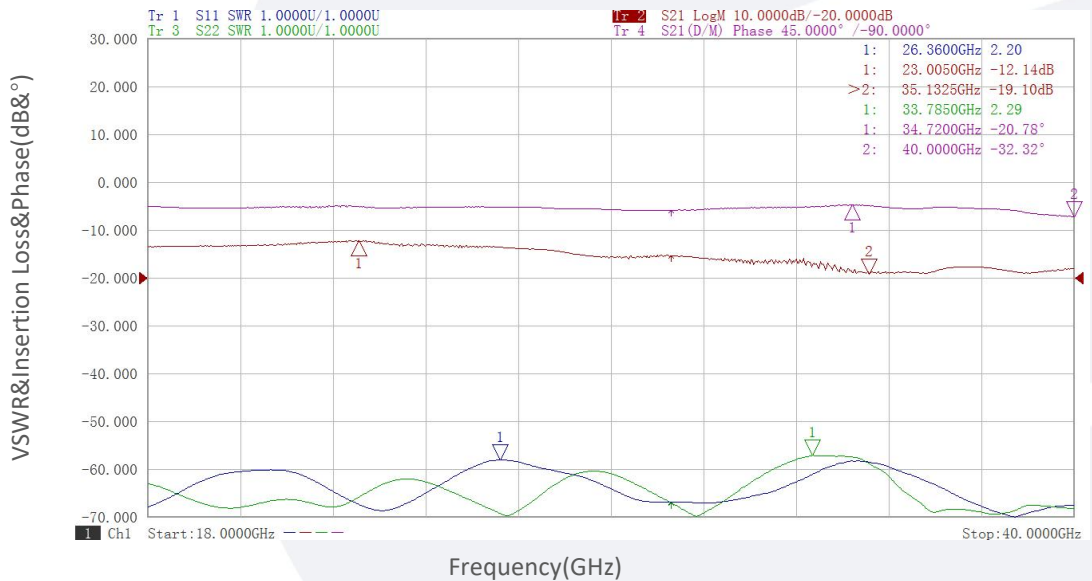
11.25° :

VSWR&Insertion Loss&Phase vs Frequency



22.5° :

VSWR&Insertion Loss&Phase vs Frequency

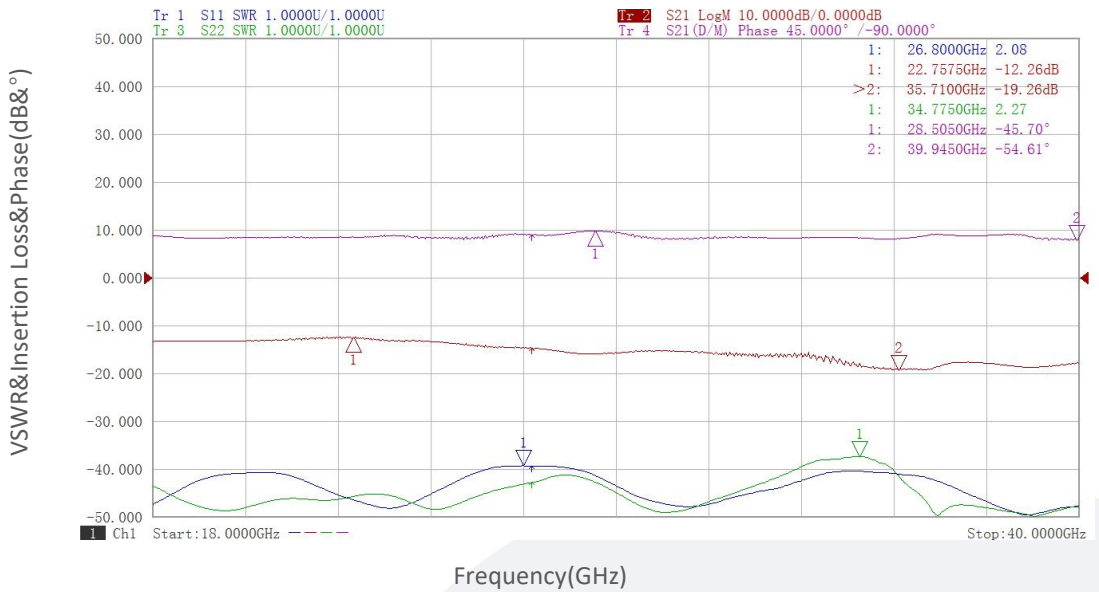


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

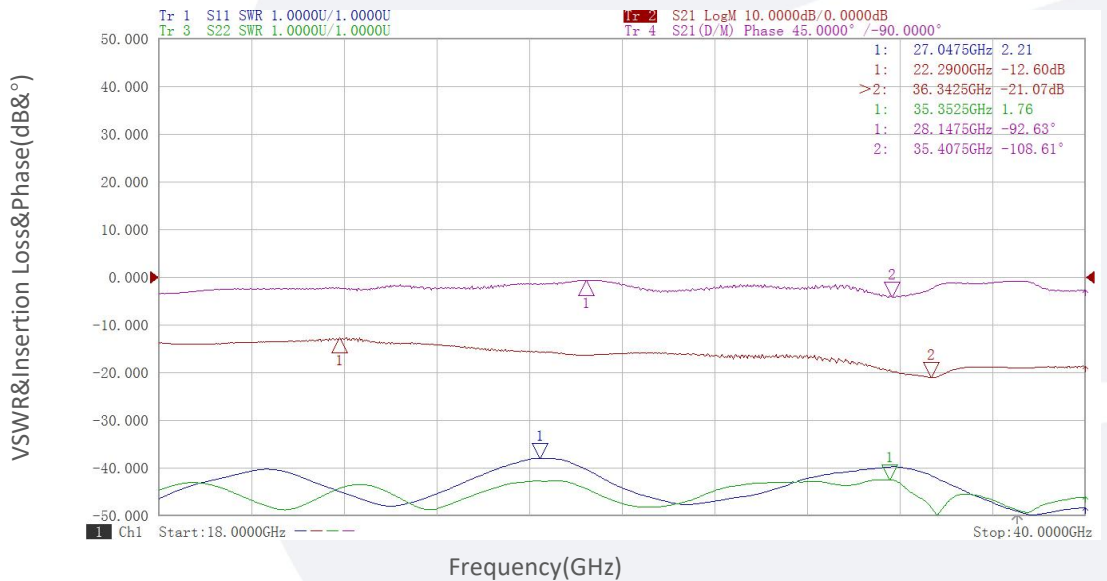
45° :

VSWR&Insertion Loss&Phase vs Frequency



90° :

VSWR&Insertion Loss&Phase vs Frequency

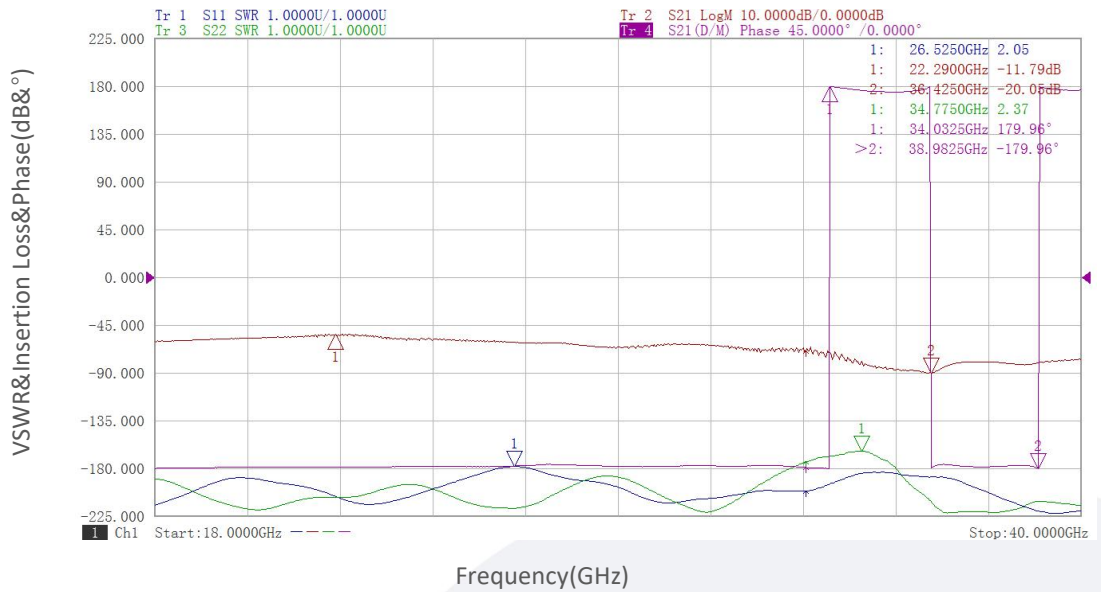


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

180° :

VSWR&Insertion Loss&Phase vs Frequency



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