

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

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	4		8	GHz
插损 Insertion Loss		10		dB
输入驻波 Input VSWR		1.6		:1
输出驻波 Output VSWR		1.6		:1
移相范围 Phase Shift Range		360		°
相位精度 Phase accuracy		±10		°
耐功率 Power Handling			27	dBm
切换时间 Switching speed		100		ns
直流电压 DC Voltage		5		V DC
直流电流 DC Supply Current		20		mA
控制位数 Number of Bits		6		Bit
阻抗 Impedance		50		Ohms

环境和机械特性 Envrionmental And Physical Characteristics:

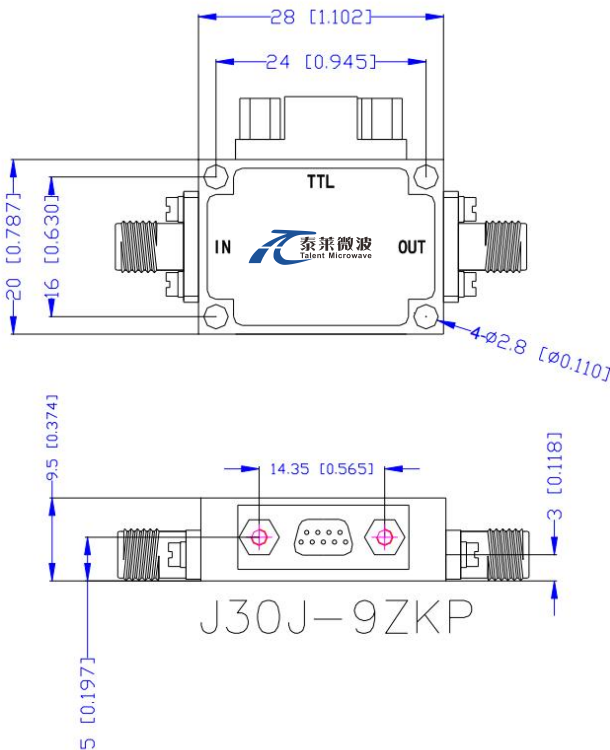
描述 Description	参数 Parameter	单位 Units
输入/输出接口 Input /Output Connector	SMA Female/SMA Female	
直流控制接口 DC and control interface	J30J-9ZKP	
尺寸 Size	28*20*19.5	mm

绝对最大值 Absolute Maximum Ratings :

描述 Description	参数 Parameter	单位 Units
供电偏置电压 Supply Bias Voltage	+5 (±5%)	V
射频输入功率 RF Input Power	27	dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V	

外形图 Outline Drawing:

Unit:mm



真值表 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

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-45		+85	°C
存储温度 Non-operating Temperature	-55		+125	°C
相对湿度 Relative humidity		95		%
海拔 Altitude	10,000			feet
震动 Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

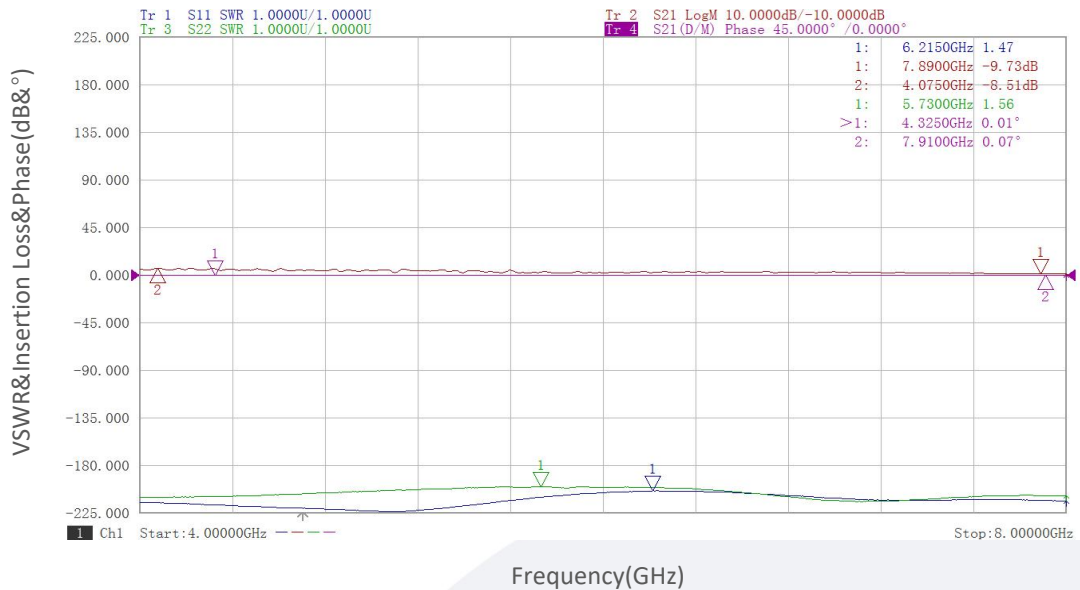
订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLDP4G8G-360-6	6-Bit Digital Phase Shifter, 4-8GHz,SMA	Rev.1.0

典型曲线 Typical Performance Data:

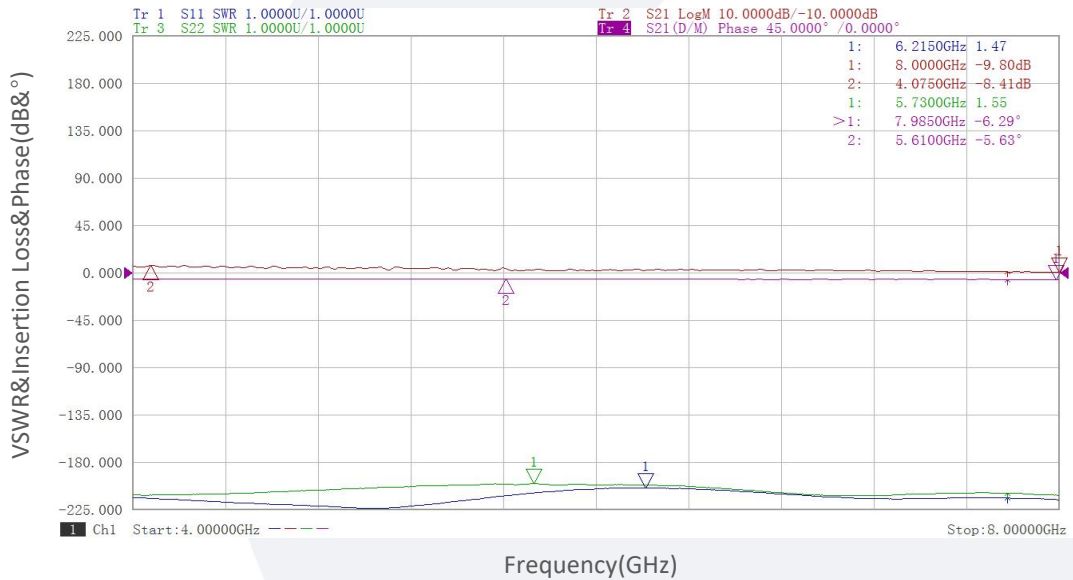
0° :

VSWR&Insertion Loss&Phase vs Frequency



5.625° :

VSWR&Insertion Loss&Phase vs Frequency

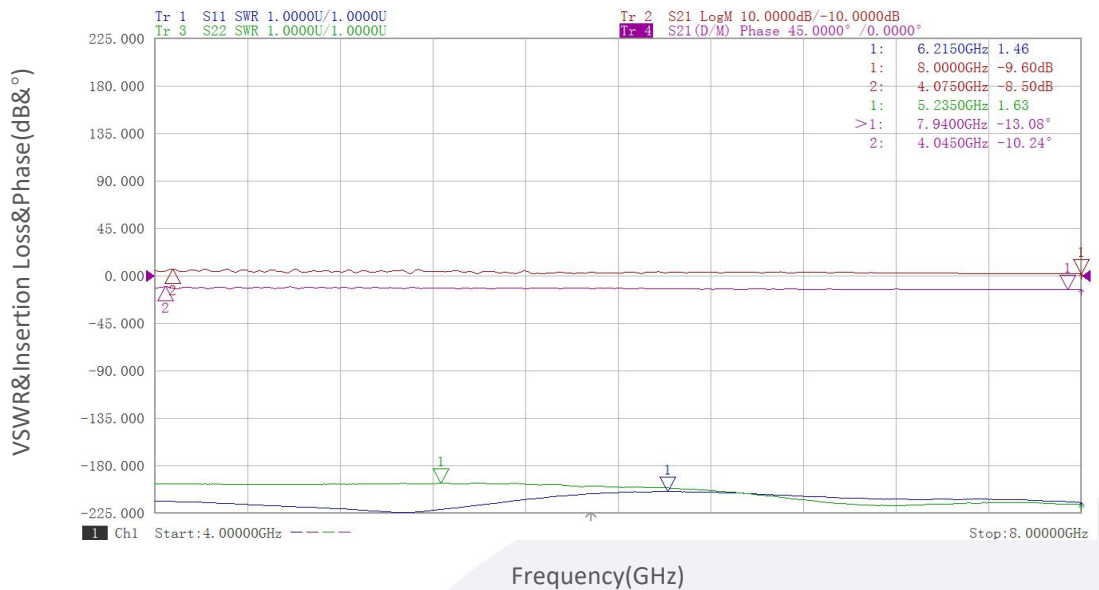


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

典型曲线 Typical Performance Data:

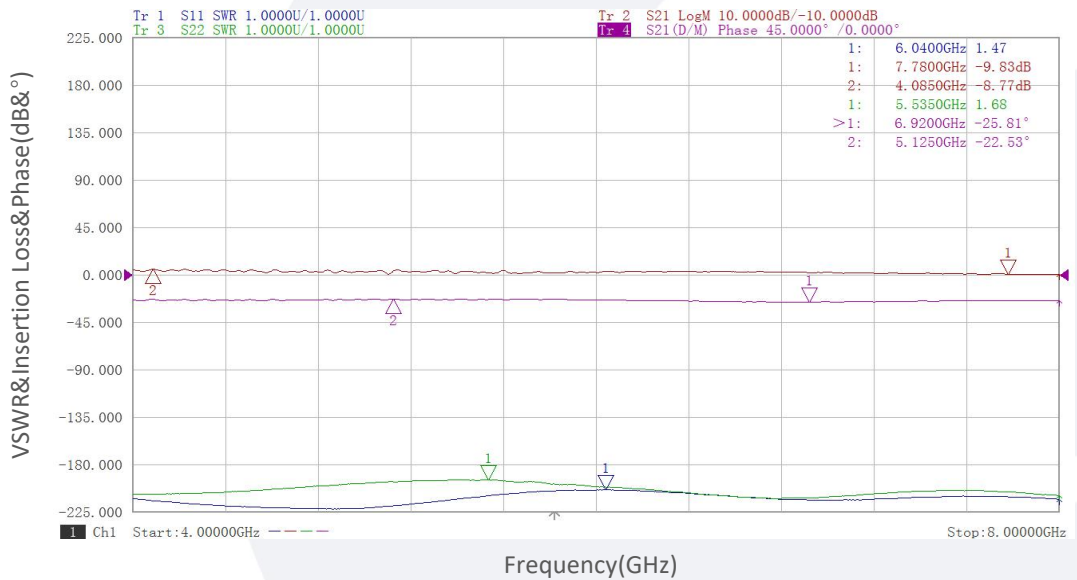
11.25° :

VSWR&Insertion Loss&Phase vs Frequency



22.5° :

VSWR&Insertion Loss&Phase vs Frequency

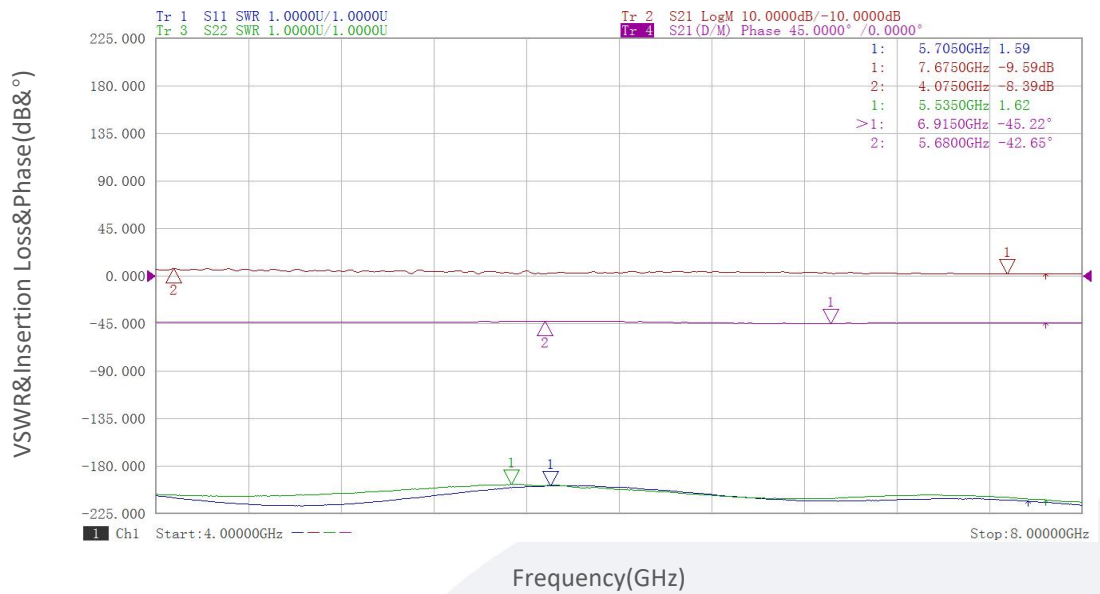


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典型曲线 Typical Performance Data:

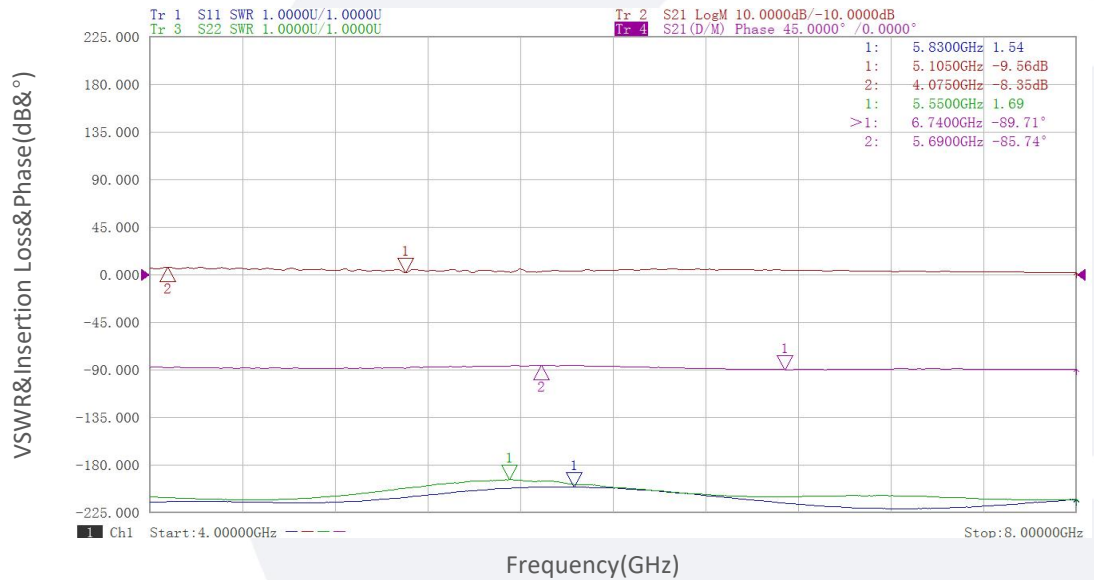
45° :

VSWR&Insertion Loss&Phase vs Frequency



90° :

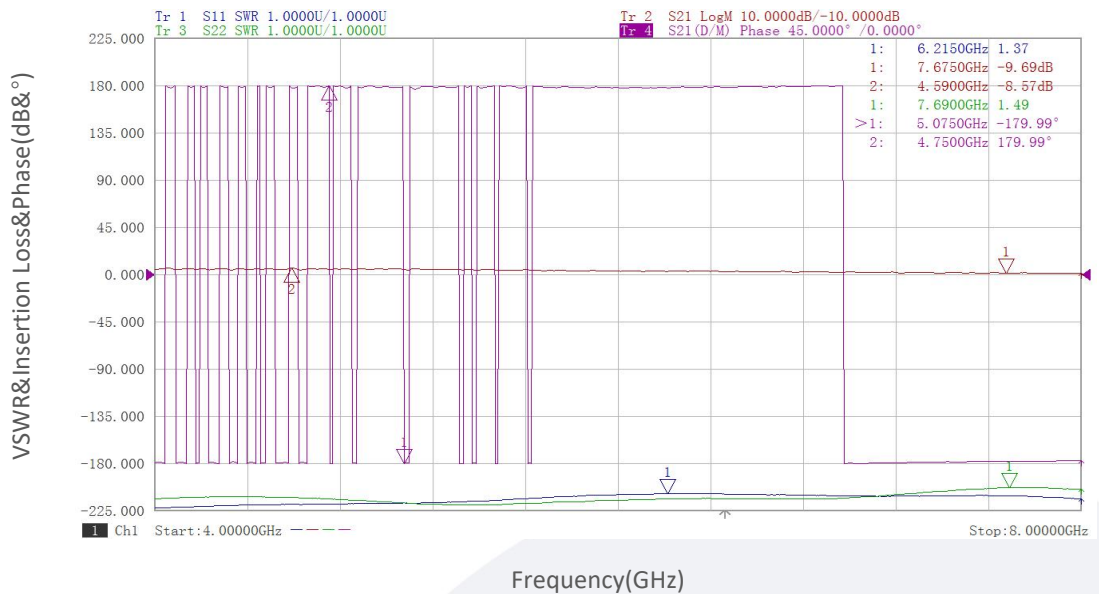
VSWR&Insertion Loss&Phase vs Frequency



典型曲线 Typical Performance Data:

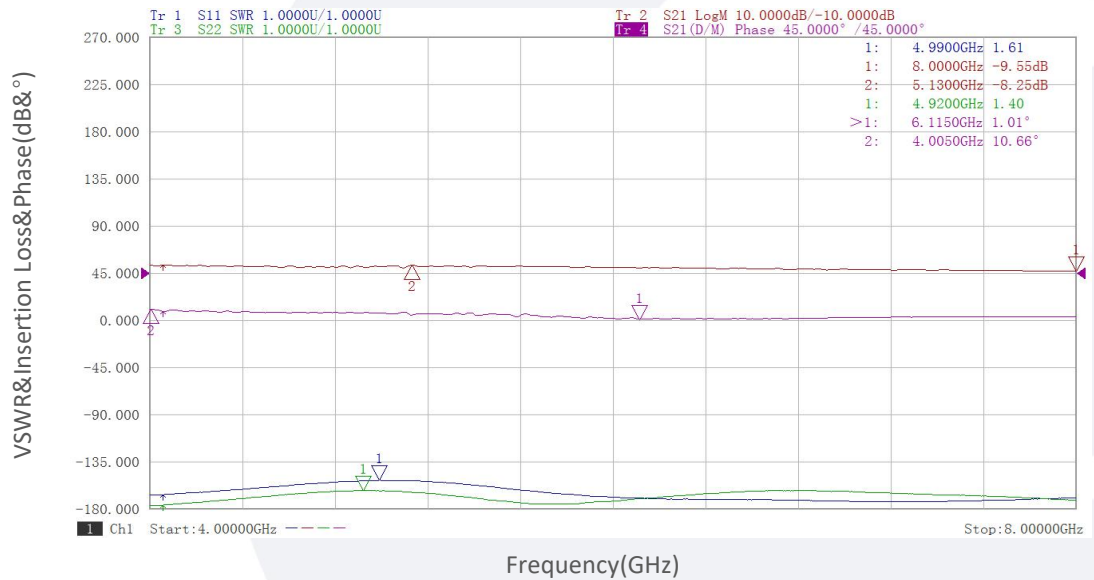
180° :

VSWR&Insertion Loss&Phase vs Frequency



360° :

VSWR&Insertion Loss&Phase vs Frequency



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