



# Digital 360° Phase Shifter 6-18GHz

## Features

- Wide Band Operation 6-18GHz
- 6-Bit Phase Shift
- Temperature Range -40°C~+85°C
- Customization available upon request
- Hermetically sealed package up to 60,000ft available upon request.



Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	6		12	12		18	GHz
Phase Range		360			360		deg
Control Bits			6			6	Bit
Control Step size		5.625			5.625		deg
Insertion Loss		9.5	10.5		10	12	dB
Insertion Loss Temperature Coefficient		0.008			0.008		dB/ °C
Phase Flatness		±5	±12		±5	±15	deg
Input VSWR @ Insertion Loss State		1.5	2.5		1.5	2.1	:1
Output VSWR @ Insertion Loss State		2.0	3.0		1.7	2.5	:1
Input 1 dB Compression Point(P1dB)		25			25		dBm
Input IP3		45			45		dBm
Switching Speed		500			500		ns
Weight	0.75 Max.						ounces
Impedance	50						Ω
Bias Current(+5V)	10 Max.						mA
Input /Output Connectors	SMA-Female						
Interface and Control Connector	MICRO-D9(Female)						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed ( optional )						



### Absolute Maximum Ratings

Biasing	+5V±10%
RF Input power	+30dBm

### Environmental Specifications

Operational Temperature	-40°C~+85°C
Storage Temperature	-50°C~+105°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

### Ordering Information

Part No	Description
DBDP0606001800A	6-18GHz Digital Phase Shifter

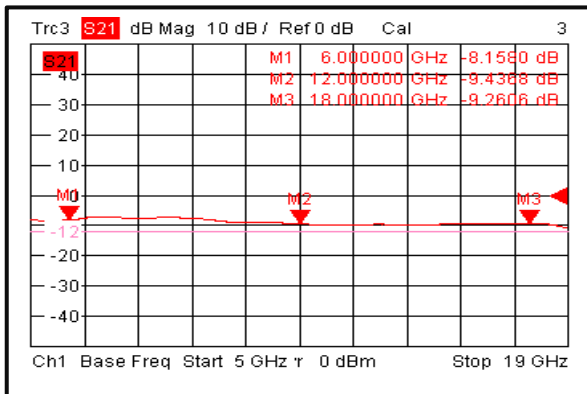
### Outline Drawing: All Dimensions in mm (inches)

**Truth Table**

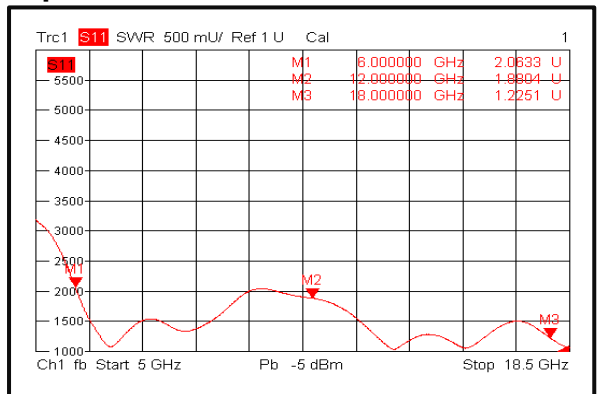
TTL Control Voltage THRESHOLD		Low(0)=0V High(1)=+5V					Phase Shift (Degree)
C6	C5	C4	C3	C2	C1		
0	0	0	0	0	0	Reference	
0	0	0	0	0	1	5.625	
0	0	0	0	1	0	11.25	
0	0	0	1	0	0	22.5	
0	0	1	0	0	0	45	
0	1	0	0	0	0	90	
1	0	0	0	0	0	180	
1	1	1	1	1	1	355	



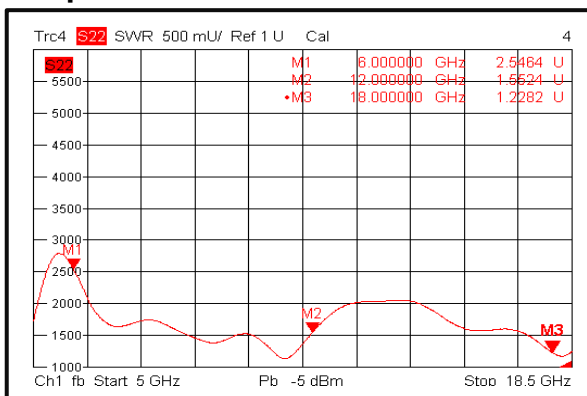
### Insertion Loss @+25°C



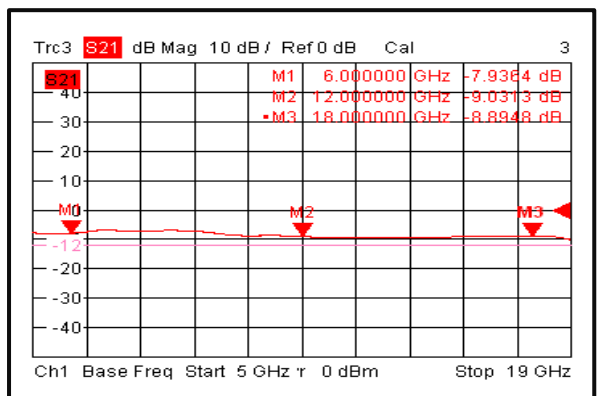
### Input VSWR @+25°C



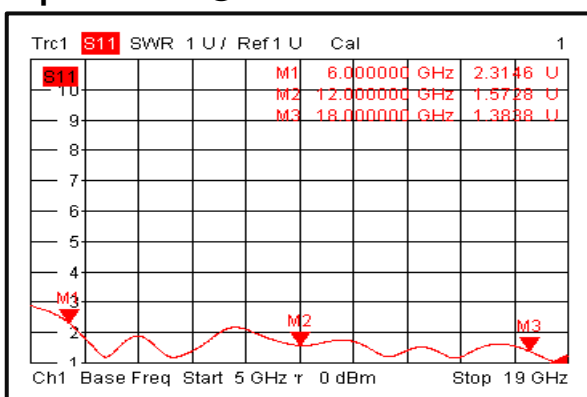
### Output VSWR @+25°C



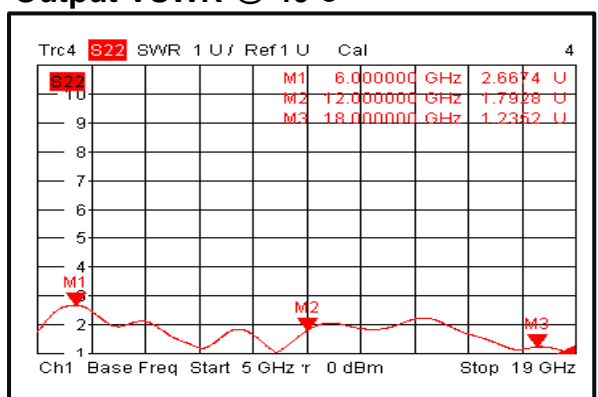
### Insertion Loss @-40°C



### Input VSWR @-40°C

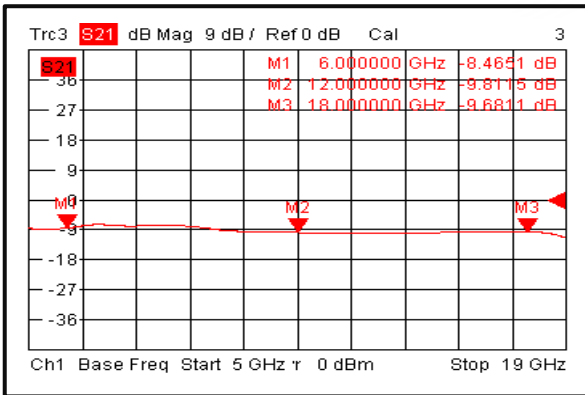


### Output VSWR @-40°C

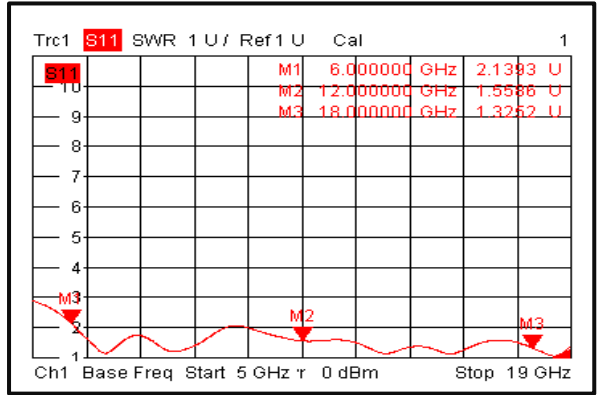




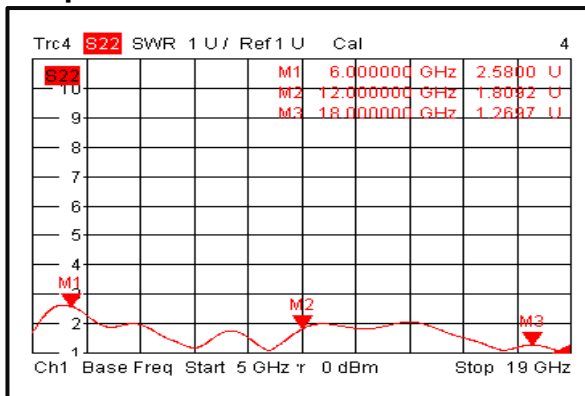
### Insertion Loss @+85°C



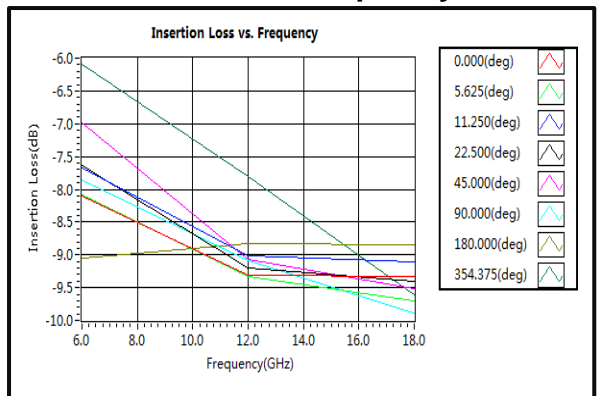
### Input VSWR @+85°C



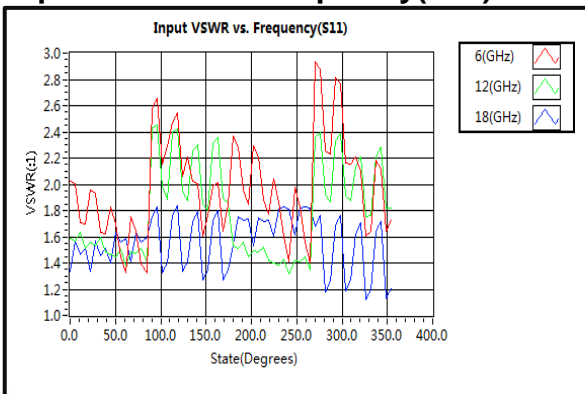
### Output VSWR @+85°C



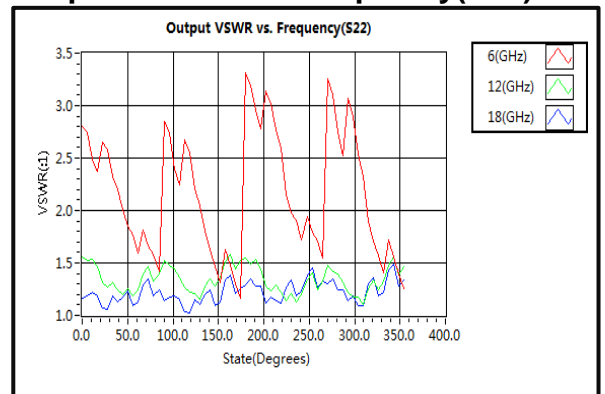
### Insertion Loss vs. Frequency



### Input VSWR vs. Frequency(S11)

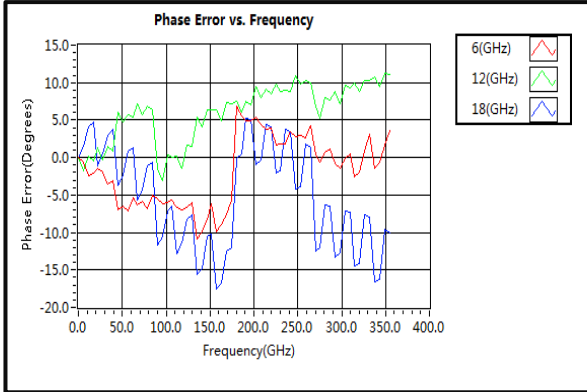


### Output VSWR vs. Frequency(S22)

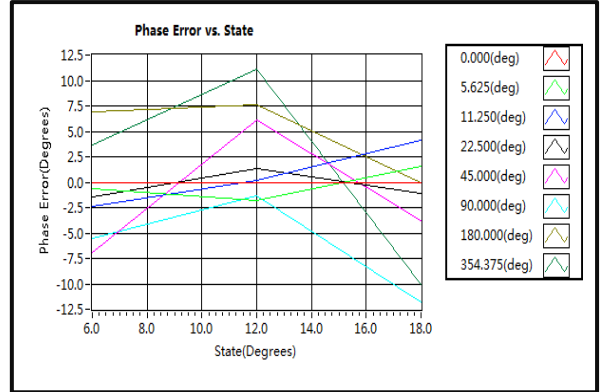




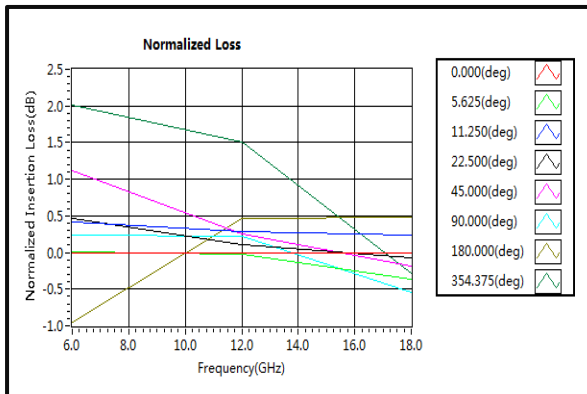
### Phase Error vs. Frequency



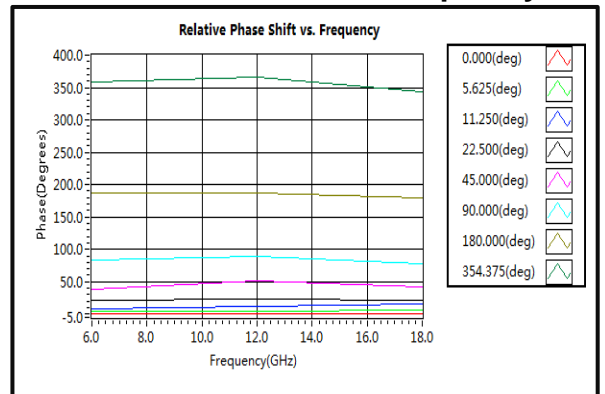
### Phase Error vs. State



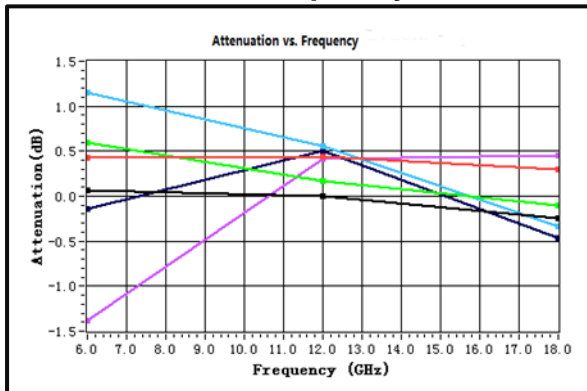
### Normalized Loss. All States



### Relative Phase Shift vs. Frequency



### Attenuation vs. Frequency



### Speed

