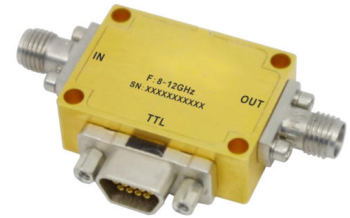




# 6Bit Digital Non-Dispersive Phase Shifter 8-12GHz

## Features

- Wide Band Operation 8-12GHz
- 360° Phase Shift, LSB = 5.625°
- Fast Switching Speed
- Temperature Range -45°C~+85°C
- Customization available upon request
- Hermetically sealed package up to 60,000 ft available upon request.



Parameters	Min	Typ.	Max	Units
Frequency Range	8		12	GHz
Phase Range			360	°
Control Bits			6	Bit
Control Step size	5.625			°
Insertion Loss		9.3	10	dB
Insertion Loss Temperature Coefficient		0.008		dB / °C
Phase Flatness		±4		dB
Input VSWR		1.6	2.3	: 1
Output VSWR		1.6	2.0	: 1
Input 1dB Compression Point (P1dB)		28		dBm
Input IP3		50		dBm
Switching Speed		150		ns
Weight		0.35		ounces
Impedance		50		Ω
Bias Current (-5V)		25		mA
Input / Output Connectors	SMA - Female			
Control / Interface Connector	MICRO-D9 (Female)			
Finish	Gold Plating			
Material	Aluminum			
Sealing	Hermetically Sealed (optional)			



### Absolute Maximum Ratings

Biasing	-5V±5%
TTL Control Voltage	+5V/0V
RF Input power	+30dBm

### Environmental Specifications

Operational Temperature	-45°C~+85°C
Storage Temperature	-55°C~+125°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 35c, 95%RH at 40°c
Shock	20G for 11msec half sine wave,3 axis both directions

### Ordering Information

Part No.	ECCN	Description
DBDP0608001200A	EAR99	8-12GHz Digital Phase Shifter

### Outline Drawing:

All Dimensions in mm (inches)

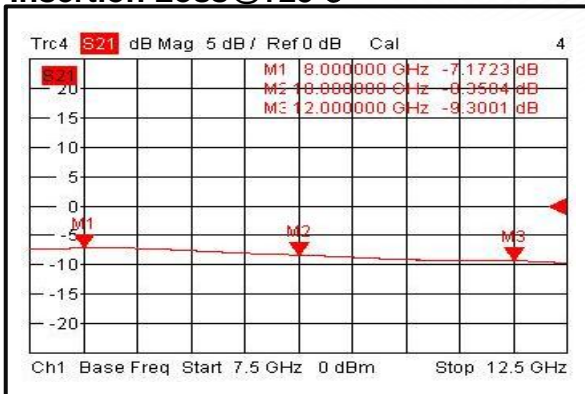
1 2 3 4 5 6 7 8 9  
 -5V GND C1 C2 C3 C4 C5 C6 NC  
**MICRO-D9(Female)**

**Truth Table**

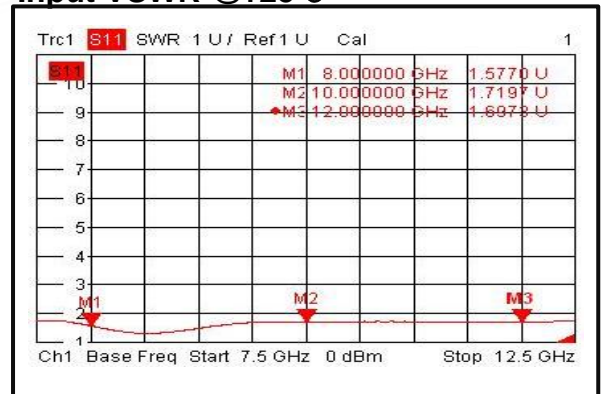
Control Voltage Input						Phase Shift (Degree)
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	Reference
1	1	1	1	1	0	5.63
1	1	1	1	0	1	11.25
1	1	1	0	1	1	22.5
1	1	0	1	1	1	45
1	0	1	1	1	1	90
0	1	1	1	1	1	180
0	0	0	0	0	0	360



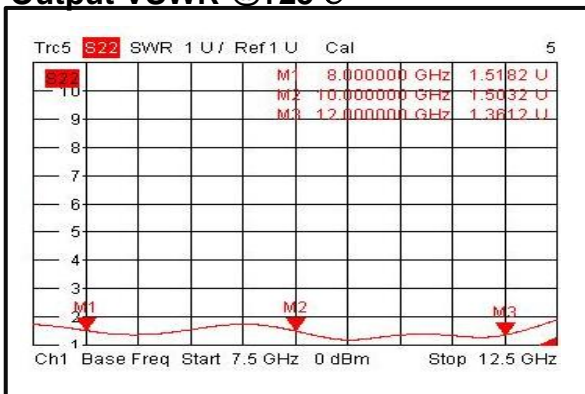
### Insertion Loss @+25°C



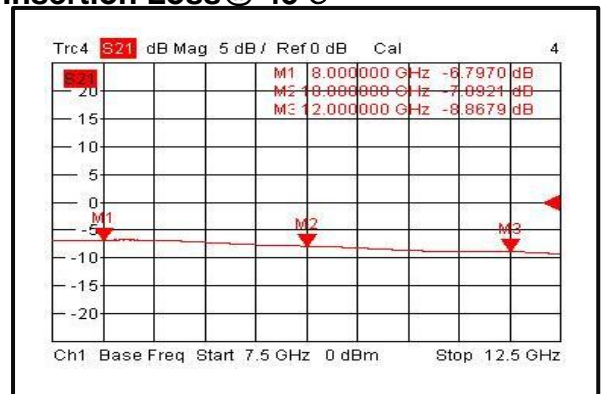
### Input VSWR @+25°C



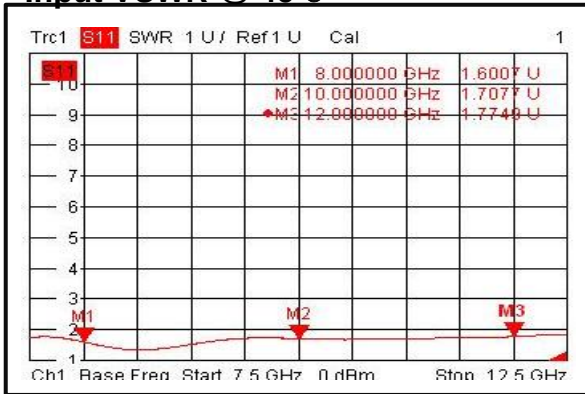
### Output VSWR @+25°C



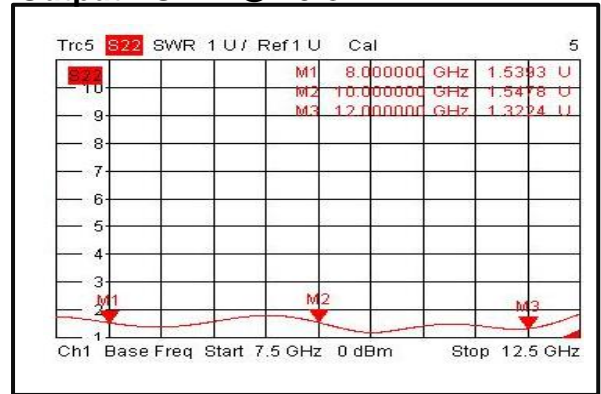
### Insertion Loss @-45°C



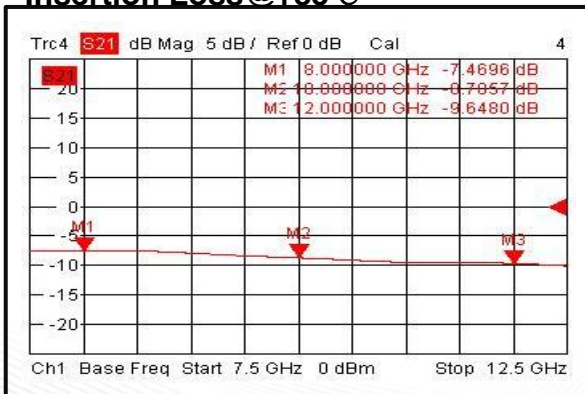
### Input VSWR @-45°C



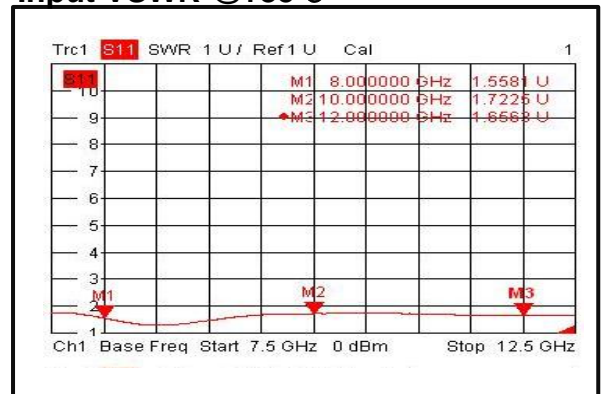
### Output VSWR @-45°C



### Insertion Loss @+85°C

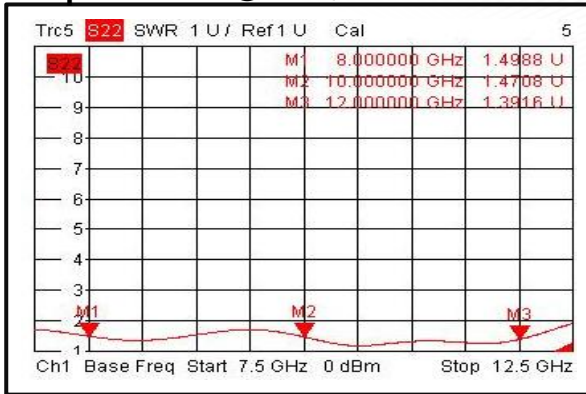


### Input VSWR @+85°C

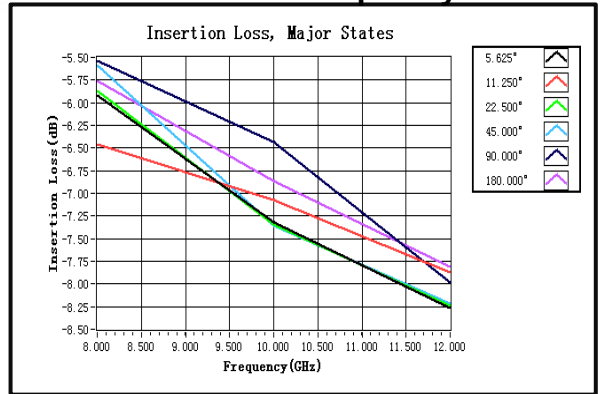




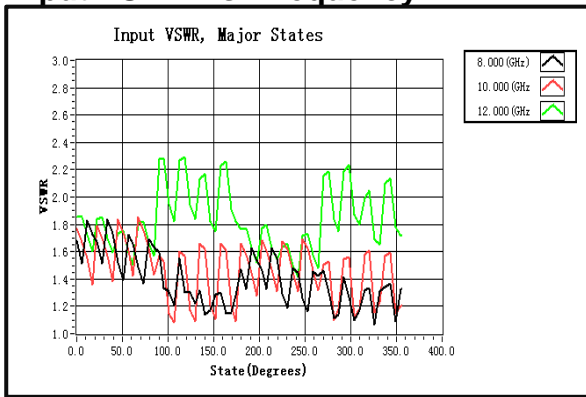
### Output VSWR @+85°C



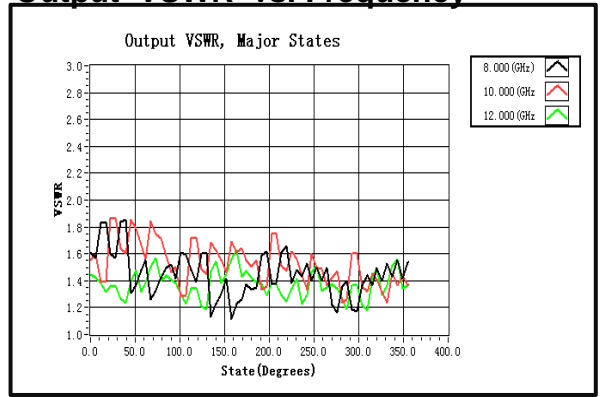
### Insertion Loss vs. Frequency



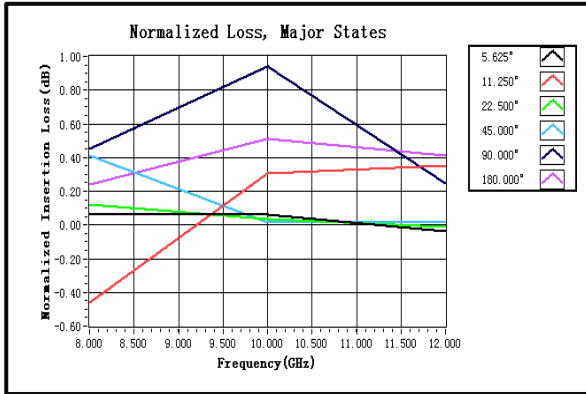
### Input VSWR vs. Frequency



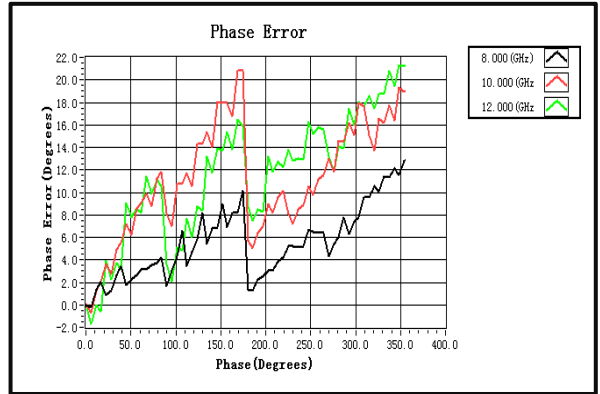
### Output VSWR vs. Frequency



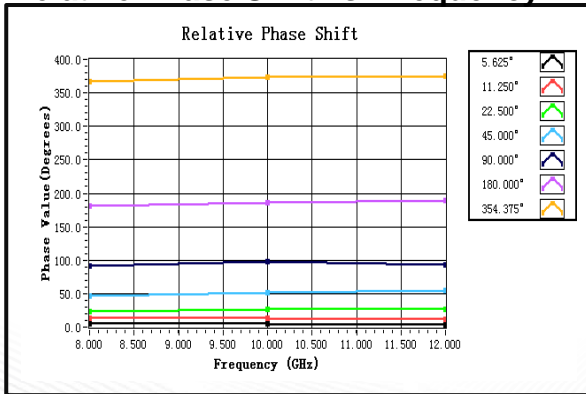
### Normalized Loss . All States



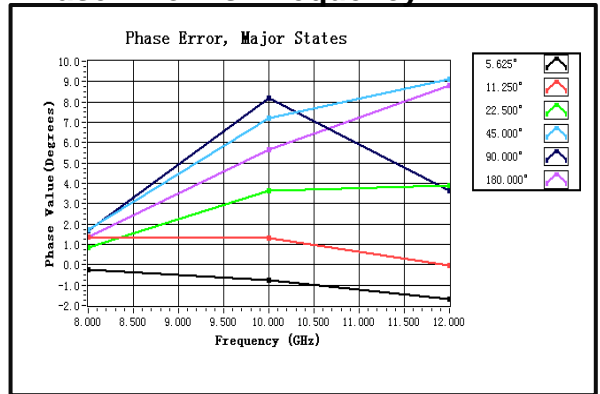
### Phase Error vs. State



### Relative Phase Shift vs. Frequency

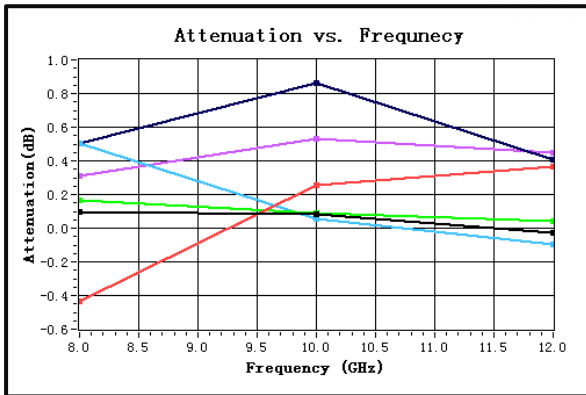


### Phase Error vs. Frequency

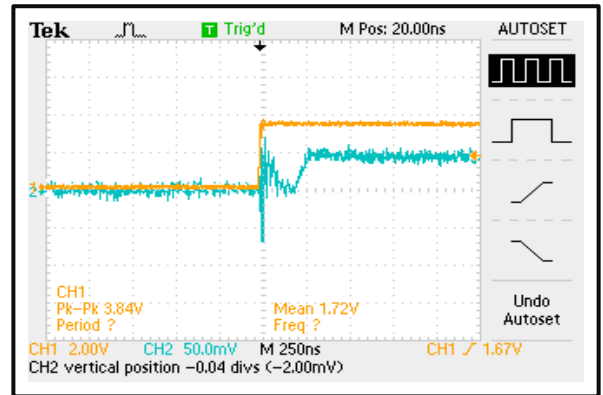




### Attenuation vs. Frequency



### Speed



### Speed

