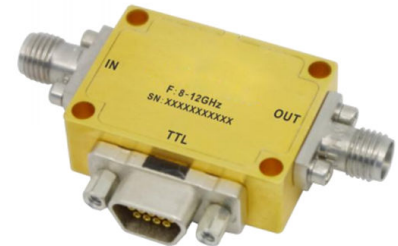




6Bit Digital Non-Dispersive Phase Shifter 8-12GHz

Features

- Wide Band Operation 8-12GHz
- 360° Phase Shift
- Fast Switching Speed



Parameters	Min.	Typ.	Max.	Units
Frequency Range	8		12	GHz
Phase Range		360		deg
Control Bits			6	Bits
Control Step Size		5.625		deg
Insertion Loss		8.5	9.5	dB
Insertion Loss Temperature Coefficient		0.008		dB/ °C
Phase Flatness		±12		deg
Input VSWR (All states)		1.5	2.5	: 1
Output VSWR (All states)		1.5	2.5	: 1
Input 1 dB Compression Point		28		dBm
Input IP3(Pin/Tone=15dBm,Tone Spacing=10MHz)		45		dBm
Speed	500 Typ.			ns
Weight	1.5 Max.			ounces
Impedance	50			Ω
Bias Current (+5V)	25 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

Bias Voltage	+6V
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
DBDP0608001200B	8-12GHz Digital Phase Shifter

Outline Drawing:

All Dimensions in mm (inches) Tolerances ± 0.1 (0.004)

The drawing shows the physical dimensions of the phase shifter. Key dimensions include: 5.5 [0.217] for the top mounting hole offset, 10 [0.394] for the top width, 28 [1.102] and 24 [0.945] for the main body width, and 20 [0.787] and 16 [0.630] for the bottom width. It also shows a 2-56 THREAD DP3.5 [0.138] hole and a 4-ø2.8 [0.11] THRU hole. The pinout for the MICRO-D9(Female) connector is detailed as follows:

1	2	3	4	5	6	7	8	9
+5V	GND	C1	C2	C3	C4	C5	C6	NC

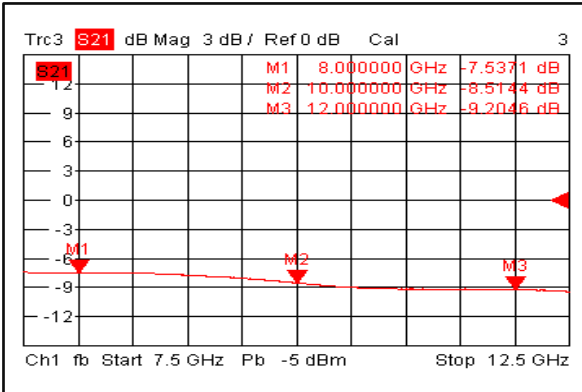
The pin 1 is labeled PIN1 and pin 6 is labeled PIN6. The distance between pins 1 and 6 is 1.27 mm. The distance from the center of pin 1 to the center of pin 6 is 1.1 mm.

Truth Table

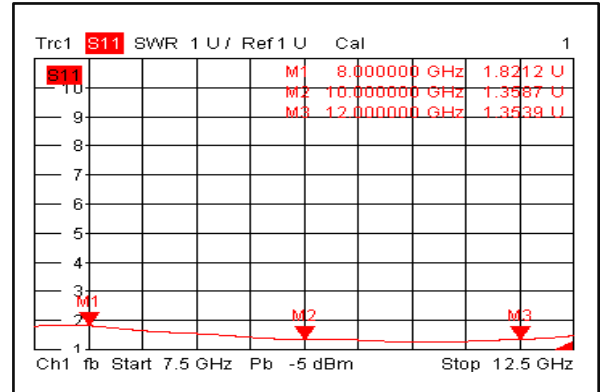
TTL Control Voltage THRESHOLD						Low(0)=0~0.8V
Control Voltage Input						High(1)=2.8~5V
C6	C5	C4	C3	C2	C1	Phase Shift (Degree)
0	0	0	0	0	0	Reference
0	0	0	0	0	1	5.625
0	0	0	0	1	0	11.25
0	0	0	1	0	0	22.5
0	0	1	0	0	0	45
0	1	0	0	0	0	90
1	0	0	0	0	0	180
1	1	1	1	1	1	360



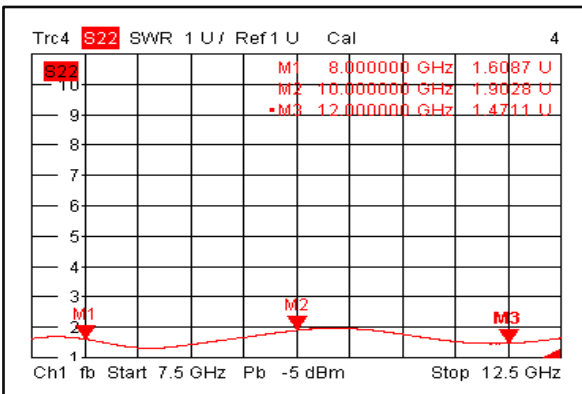
Insertion Loss @+25°C



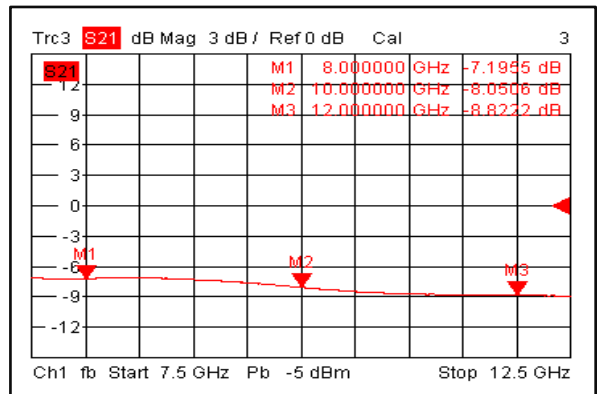
Input VSWR @+25°C



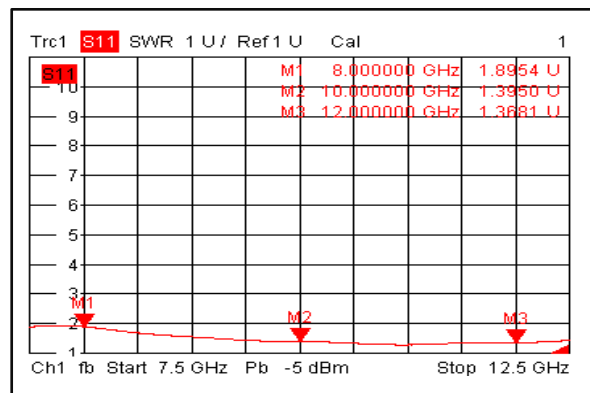
Output VSWR @+25°C



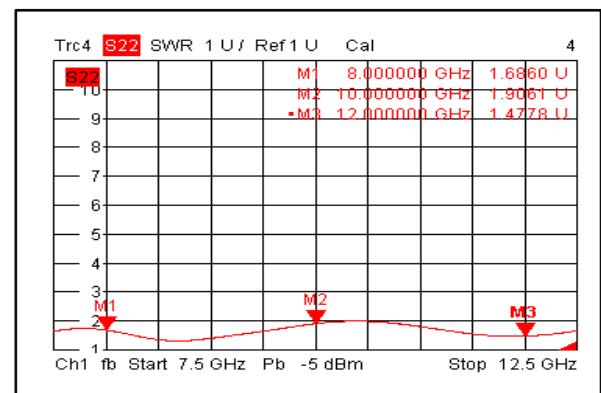
Insertion Loss @-40°C



Input VSWR @-40°C

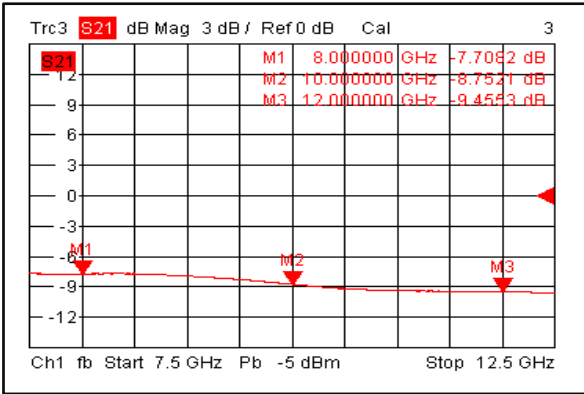


Output VSWR @-40°C

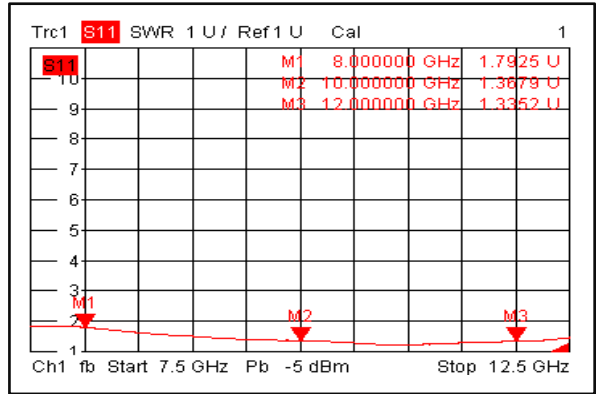




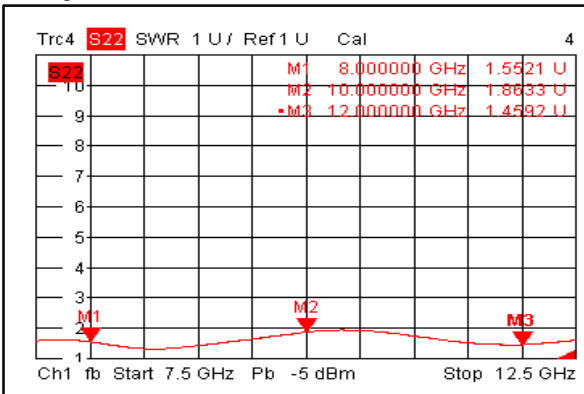
Insertion Loss @+85°C



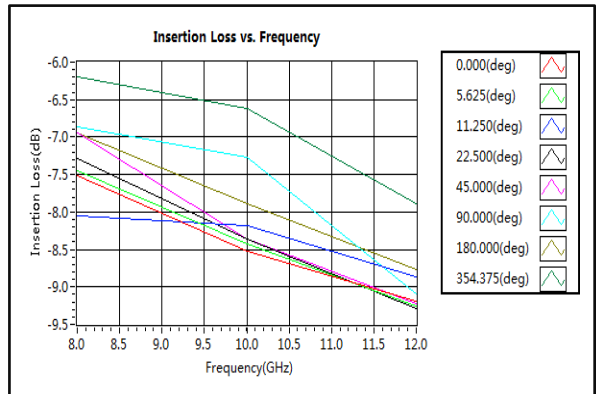
Input VSWR @+85°C



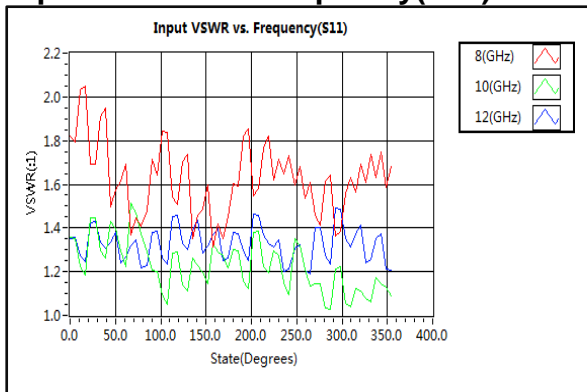
Output VSWR @+85°C



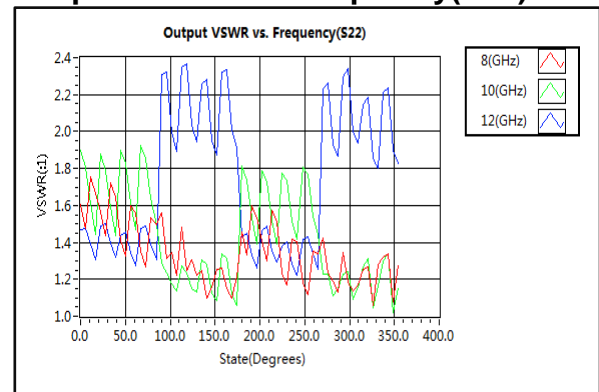
Insertion Loss vs. Frequency



Input VSWR vs. Frequency(S11)

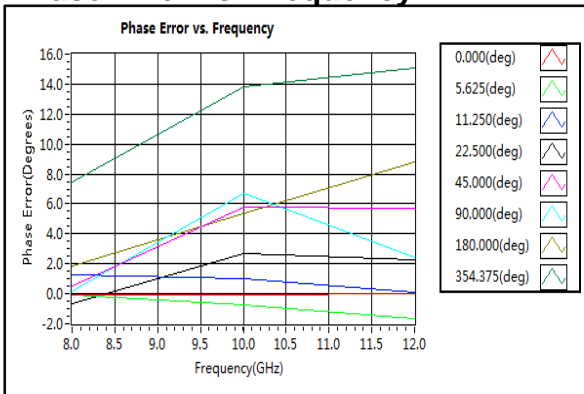


Output VSWR vs. Frequency(S22)

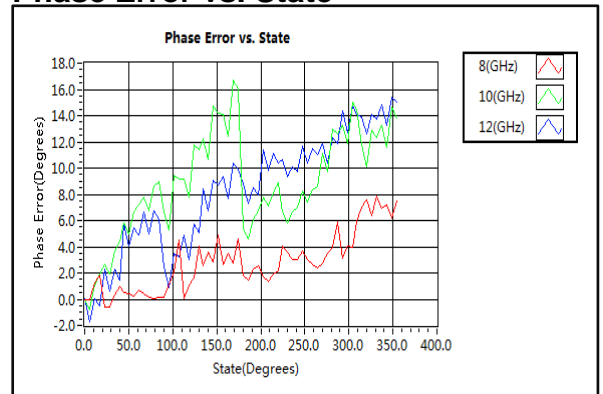




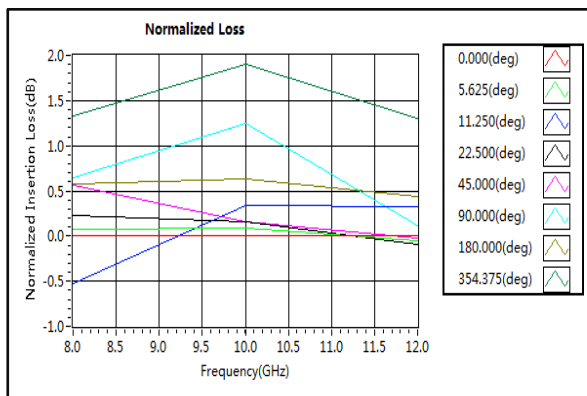
Phase Error vs. Frequency



Phase Error vs. State



Normalized Loss . All States



Relative Phase Shift vs. Frequency

