

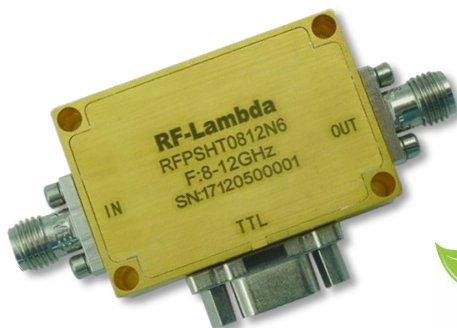


RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFPSHT0812N6

Digital Non-Dispersive 360° 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.

Electrical Specifications, TA = +25°C, Vss = -5V, VCTL = 0/ +5V

Description	PN:RFPSHT0812N6			
	6Bit Digital Phase Shifter			
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 Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			

Digital Non-Dispersive 360° Phase Shifter 8 - 12GHz



Absolute Maximum Ratings

Bias Voltage	-5V±5%
TTL Control Voltage	0~0.8V / 2.8~5V
RF Input power	+30dBm

Ordering Information

Part No.	ECCN	Description
RFPSHT0812N6	EAR99	8-12GHz Digital Phase Shifter

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)



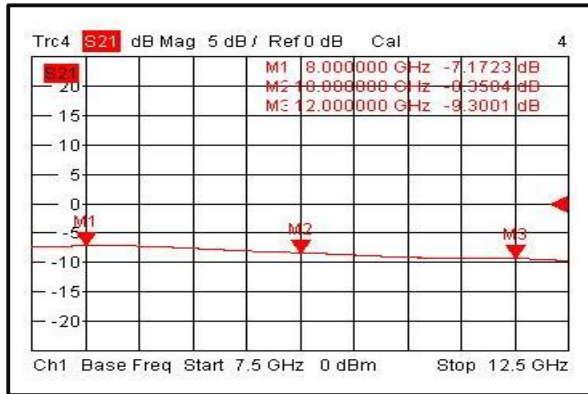
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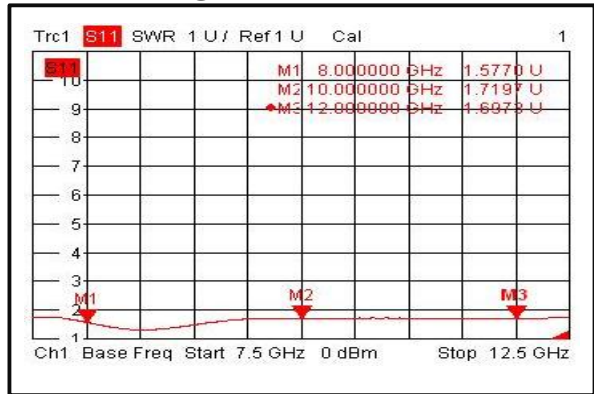
RFPSHT0812N6

Typical Performance Plots

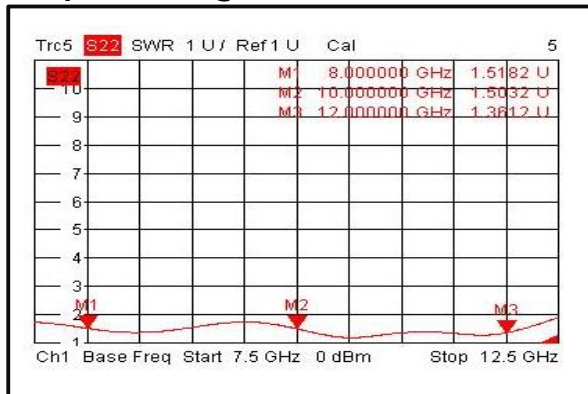
Insertion Loss@+25°C



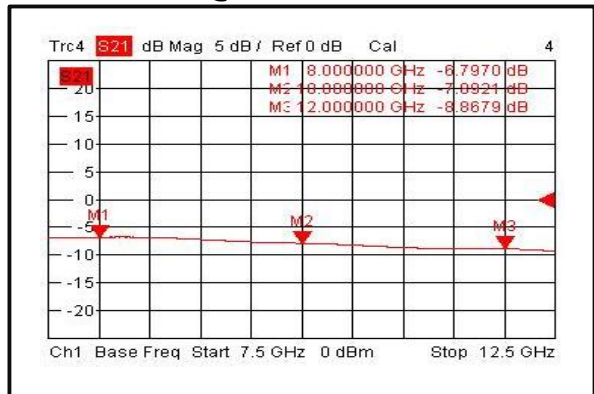
Input VSWR @+25°C



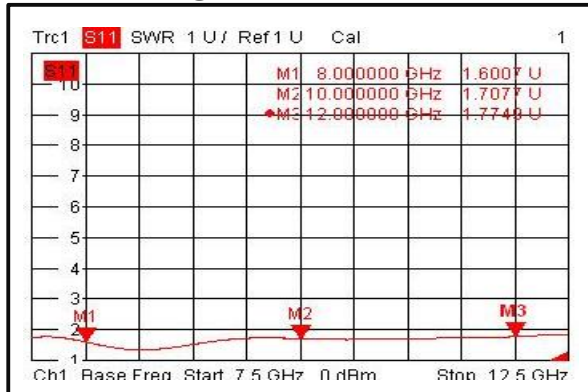
Output VSWR @+25°C



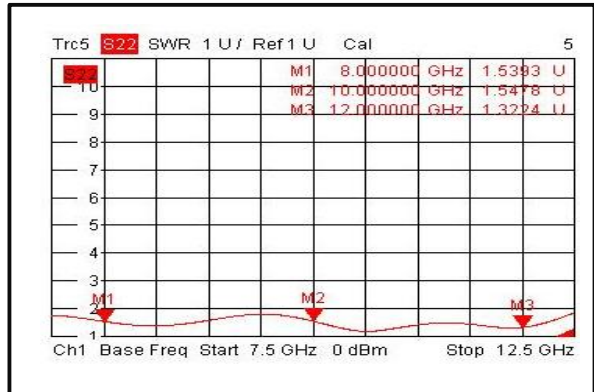
Insertion Loss@-45°C



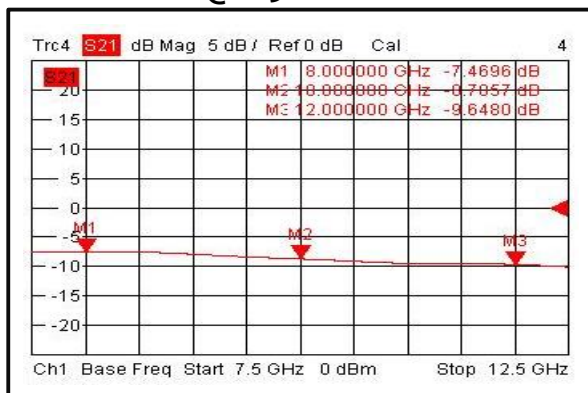
Input VSWR @-45°C



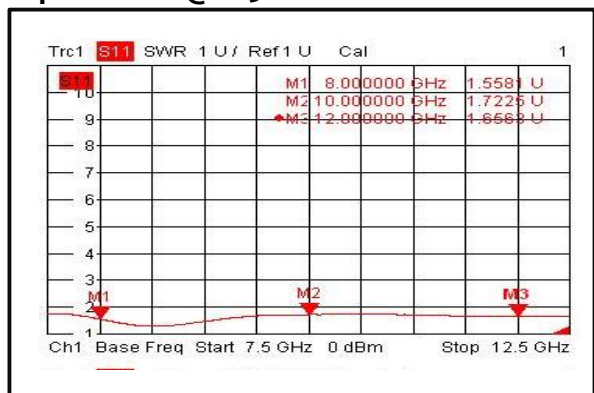
Output VSWR @-45°C



Insertion Loss@+85°C



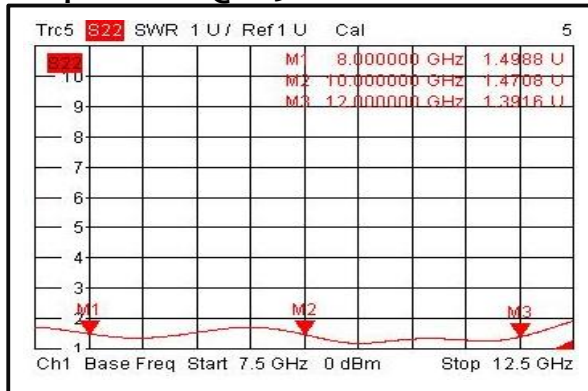
Input VSWR @+85°C



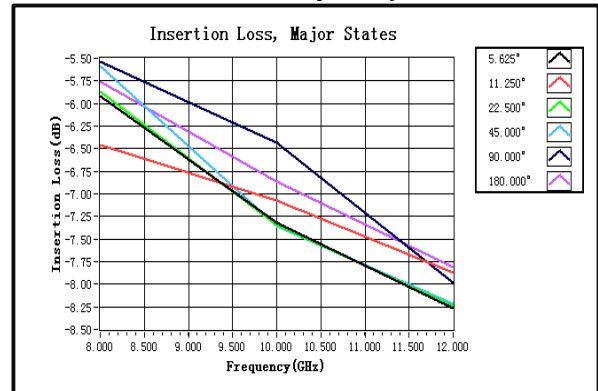
Digital Non-Dispersive 360° Phase Shifter 8 - 12GHz



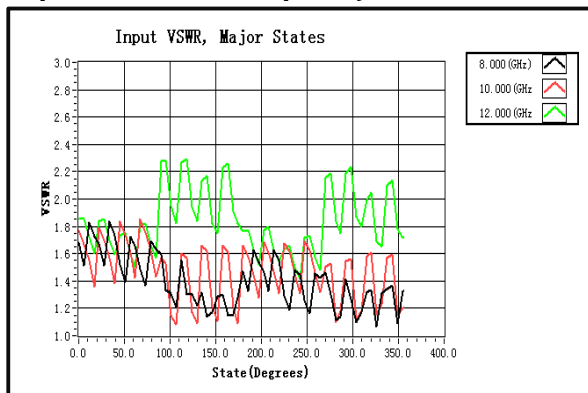
Output VSWR @+85°C



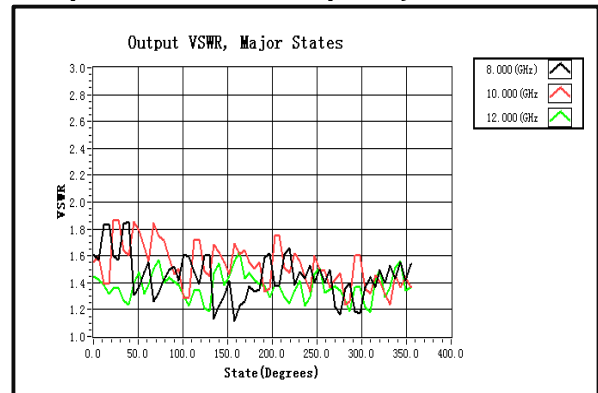
Insertion Loss vs. Frequency



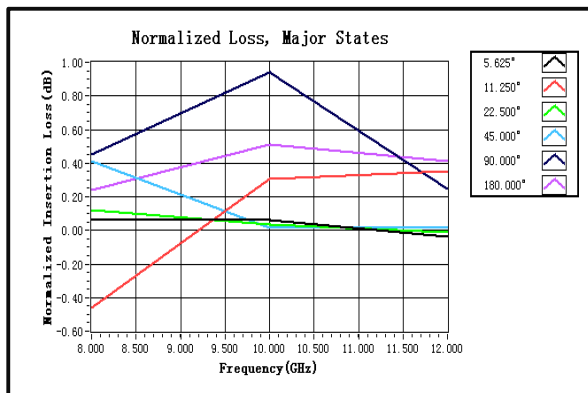
Input VSWR vs. Frequency



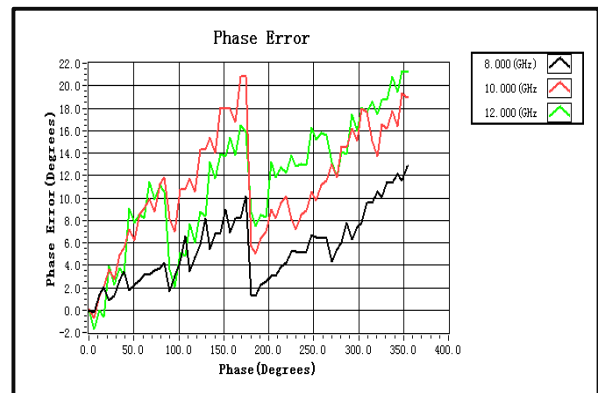
Output VSWR vs. Frequency



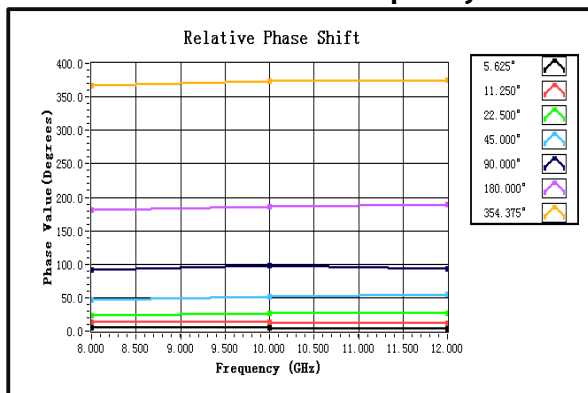
Normalized Loss . All States



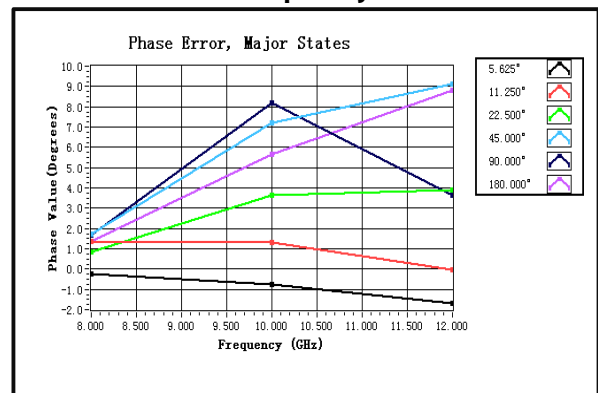
Phase Error vs. State



Relative Phase Shift vs. Frequency

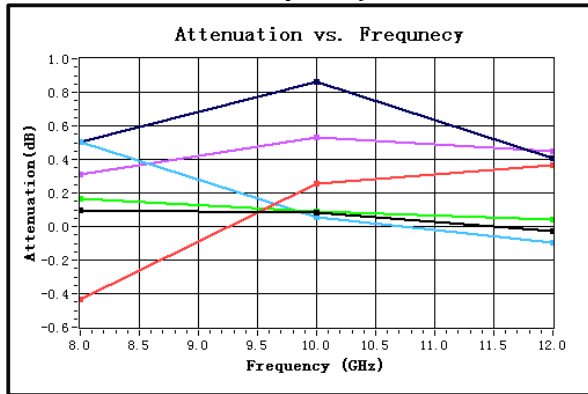


Phase Error vs. Frequency

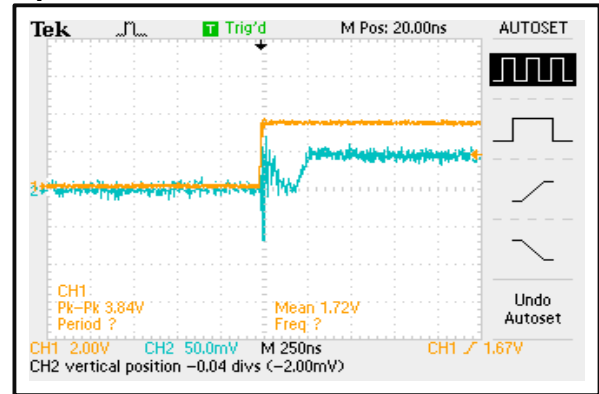




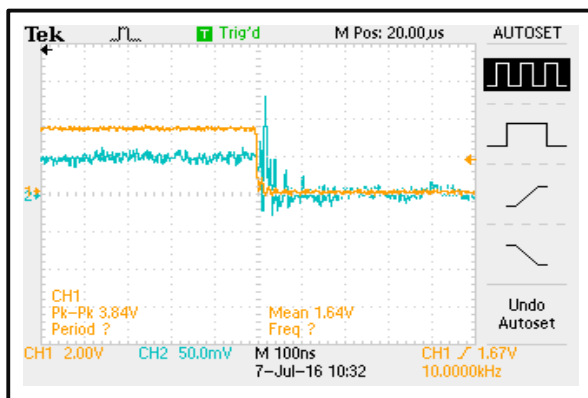
Attenuation vs. Frequency



Speed



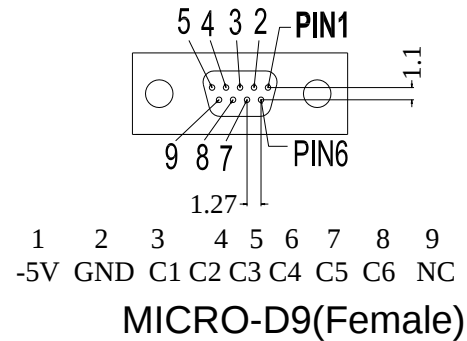
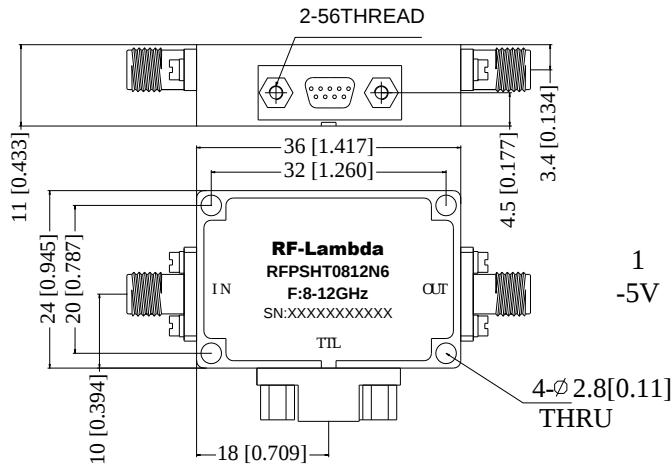
Speed





Outline Drawing:

All Dimensions in mm [inches]



Truth Table

Control Voltage Input						Phase Shift (Degrees)
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



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