



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.

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	10	dB
Insertion Loss Temperature Coefficient		0.008		dB / °C
Phase Flatness		±4		dB
Input VSWR		1.6	2	: 1
Output VSWR		1.6	2	: 1
Input 1dB Compression Point (P1dB)		28		dBm
Input IP3		50		dBm
Switching Speed		150		ns
Weight		1.76		ounces
Impedance		50		Ω
Bias Current (-5V)		25		mA
Input / Output Connectors	SMA - Female			
Control / Interface Connector	MICRO-D9 (Female)			
Finishing	Gold Plating			
Material	Aluminum			
Sealing	Hermetically Sealed (optional)			

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Absolute Maximum Ratings

Biasing	-5V±5%
TTL Control Voltage	0~0.8V / 2~5V
RF Input Power	+30dBm

Ordering Information

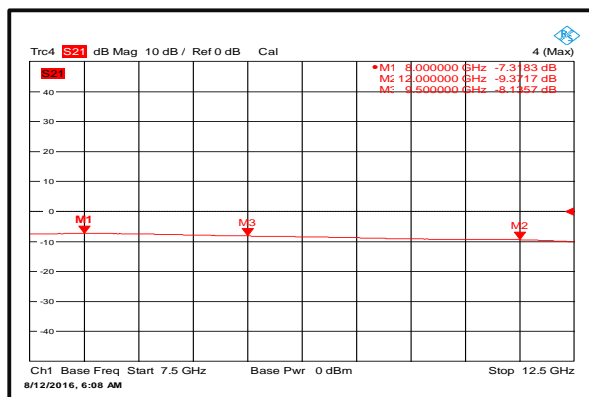
Part No	ECCN	Description
RFPSHT0812N6	EAR99	8-12GHz Digital Phase Shifter

Environmental Specifications

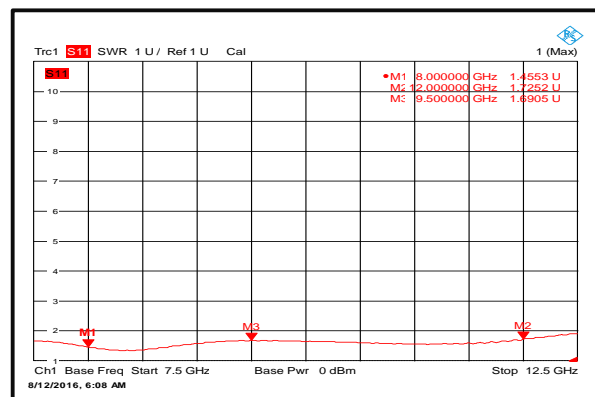
Operational Temperature(°C)	-45 ~ +85
Storage Temperature(°C)	-50 ~ +125
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40 deg c
Shock	20G for 11msec half sine wave, 3 axis both directions

Typical Performance Plots

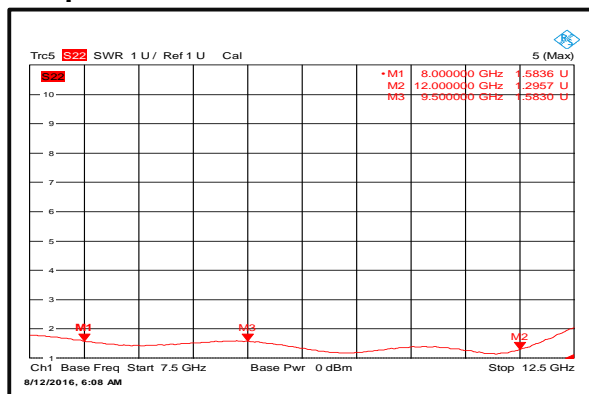
Insertion Loss



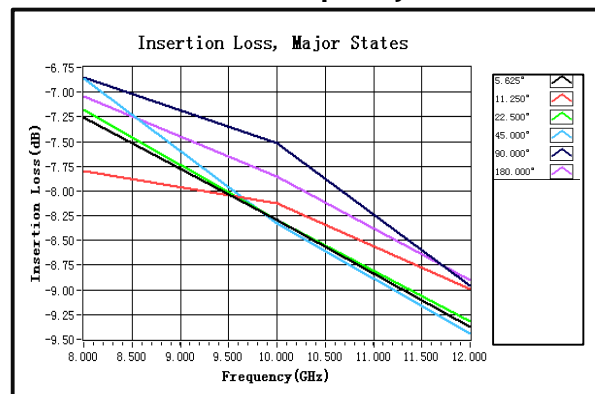
Input VSWR



Output VSWR

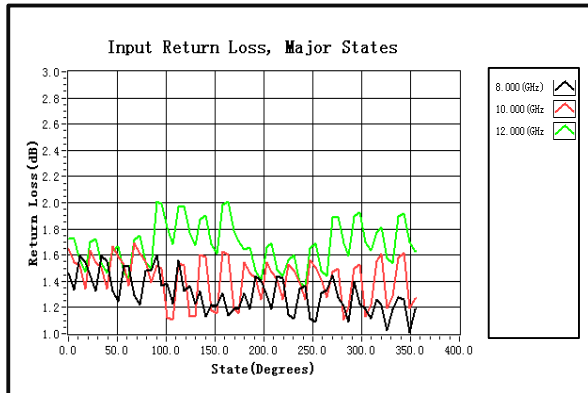


Insertion Loss vs. Frequency

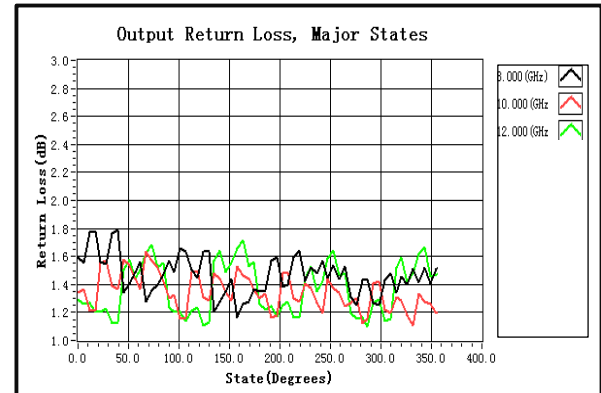




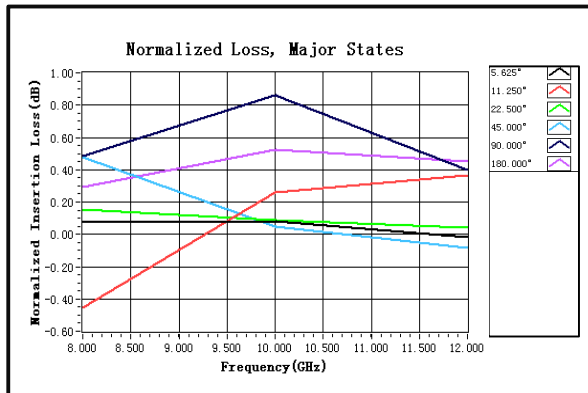
Input Return Loss vs. Frequency



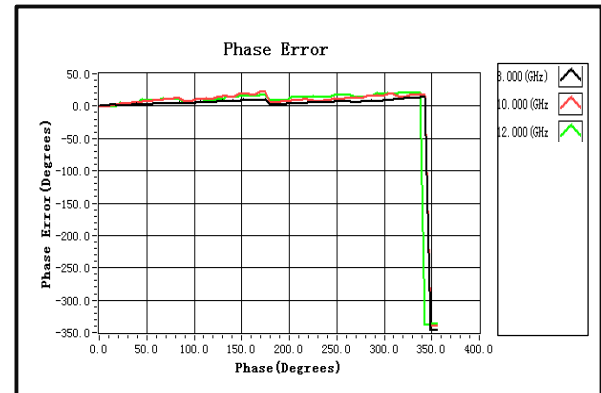
Output Return Loss vs. Frequency



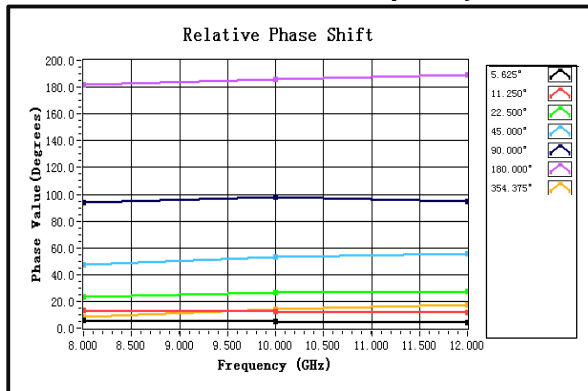
Normalized Loss . All States



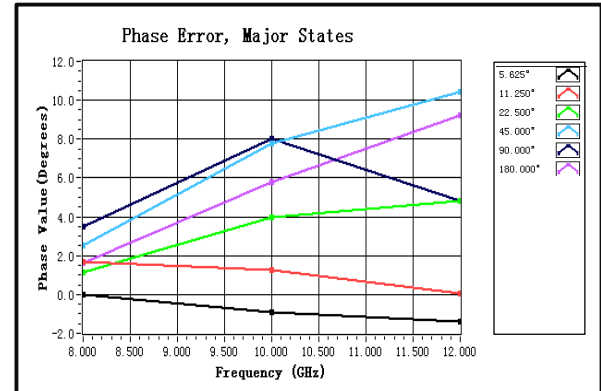
Phase Error vs. State



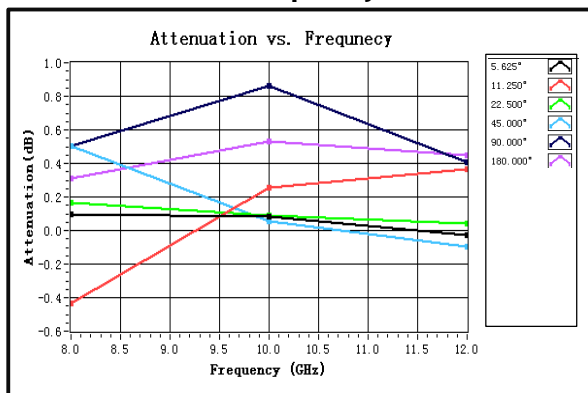
Relative Phase Shift vs. Frequency



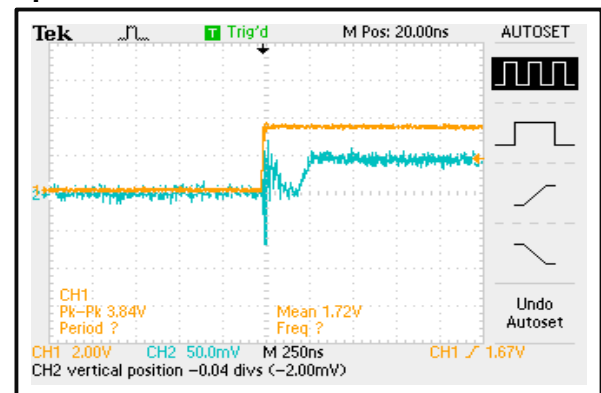
Phase Error vs. Frequency



Attenuation vs. Frequency



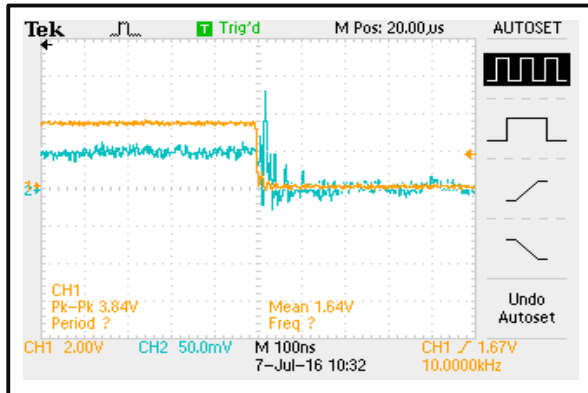
Speed



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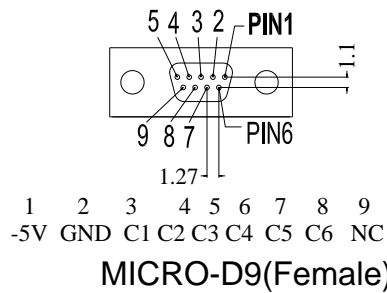
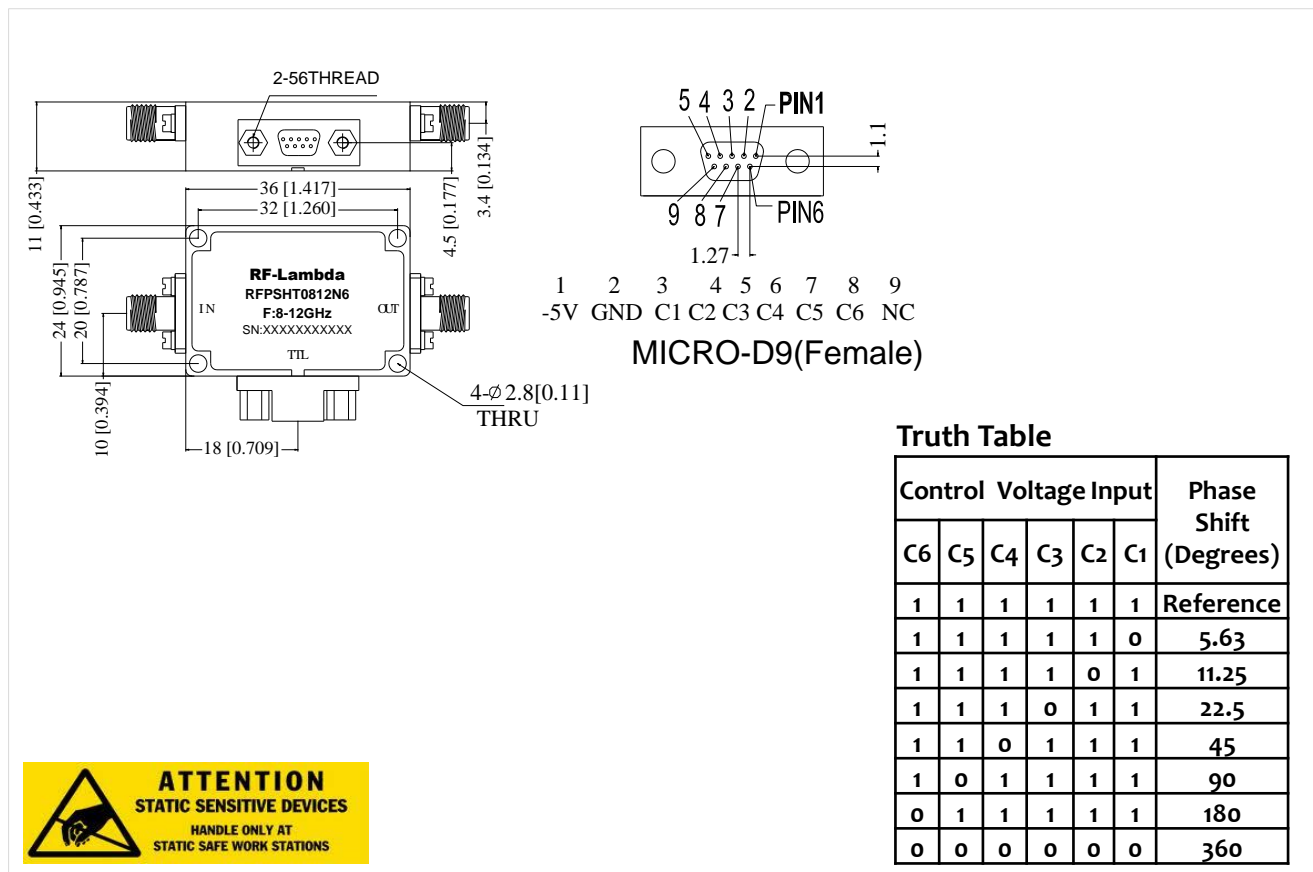


Speed



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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