



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFPSHT0204N6D

Digital Non-Dispersive 360 Degree Phase Shifter 2 - 4GHz



Features

- Wide Band Operation 2-4GHz
- 6-Bit Phase Shift
- Temperature Range -45°C~+85°C
- Customization available upon request

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test Instrument

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

Description	PN: RFPST0204N6D			
	Digital Phase Shifter			
Parameters	Min	Typ.	Max	Units
Frequency Range	2		4	GHz
Phase Range		360		°
Control Bits			6	Bit
Control Step Size		5.625		°
Insertion Loss			6	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Phase Flatness		10	30	°
Input VSWR		2	3	: 1
Output VSWR		2	3	: 1
Input 1 dB Compression Point(P1dB)		27		dBm
Switching Speed		500		us
Weight	2.12			Ounces
Impedance	50			Ω
Bias Current (+5V)	50			mA
Input / Output Connectors	SMA-Female			
Interface and Control Connector	MICRO-D9(Female)			
Finish	Nickel Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			

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Absolute Maximum Ratings

Bias Voltage	+5V±10%
TTL Control Voltage	0~0.8V/3~5V
RF Input Power	+27dBm

Ordering Information

Part No.	ECCN	Description
RFPSHT0204N6D	EAR99	2-4GHz Digital Phase Shifter

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-55°C~+100°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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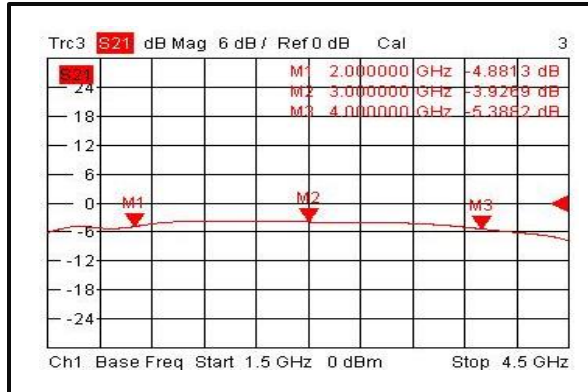
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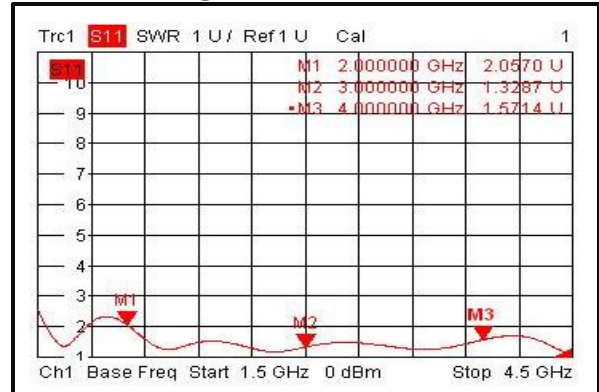
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Typical Performance Plots

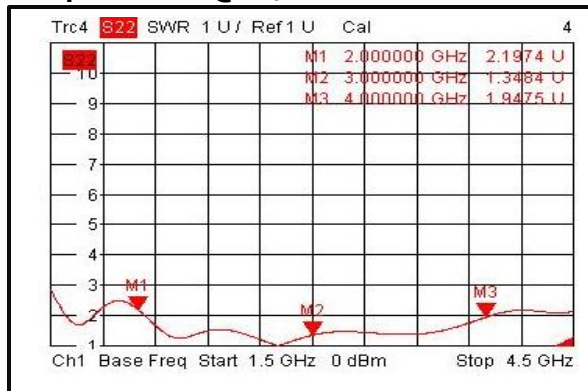
Insertion Loss@+25°C



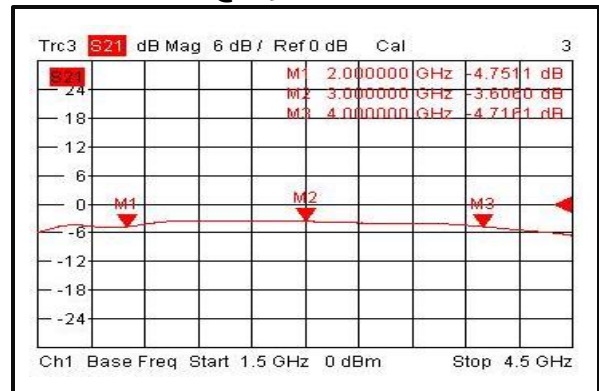
Input VSWR @+25°C



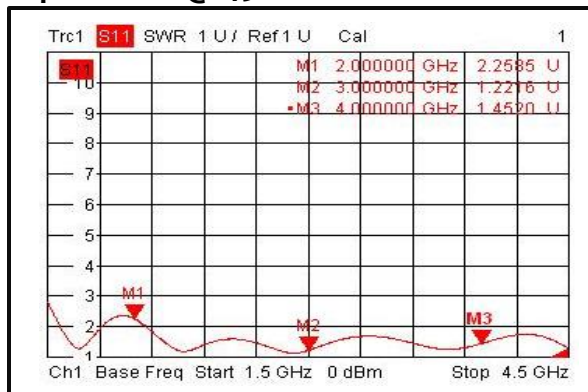
Output VSWR @+25°C



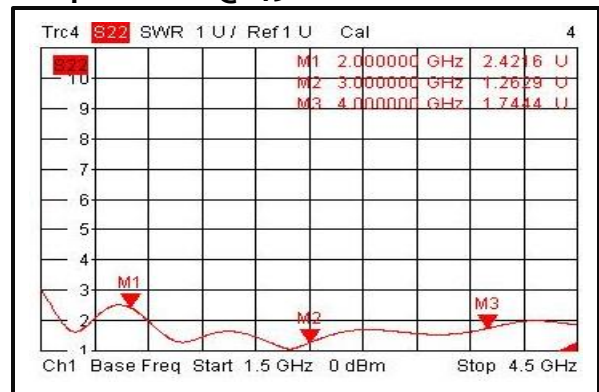
Insertion Loss@-45°C



Input VSWR @-45°C



Output VSWR @-45°C



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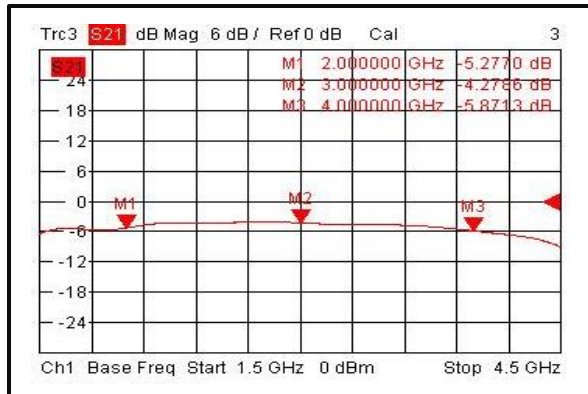


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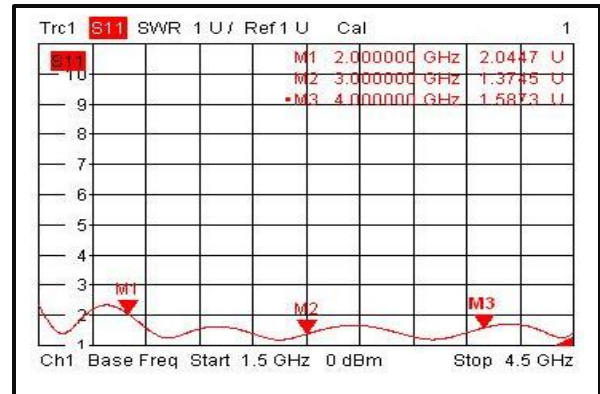
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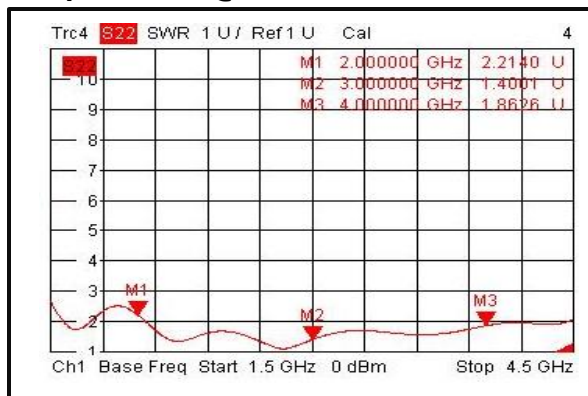
Insertion Loss@+85°C



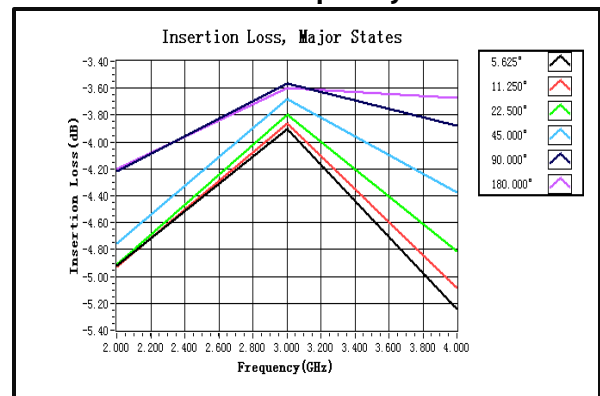
Input VSWR @+85°C



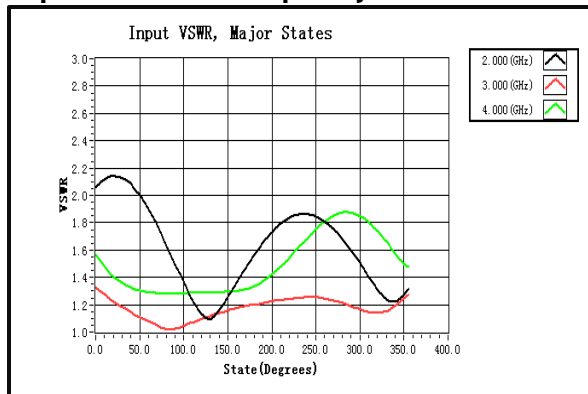
Output VSWR @+85°C



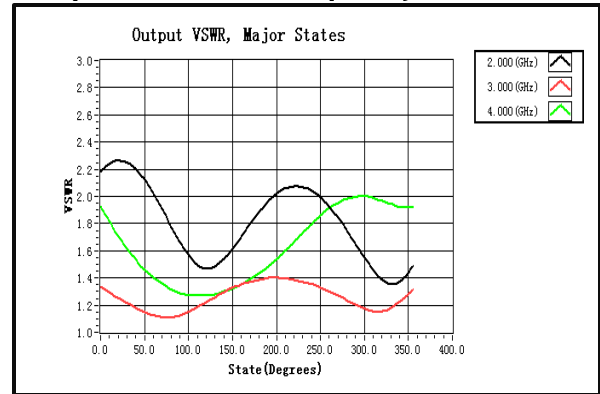
Insertion Loss vs. Frequency



Input VSWR vs. Frequency



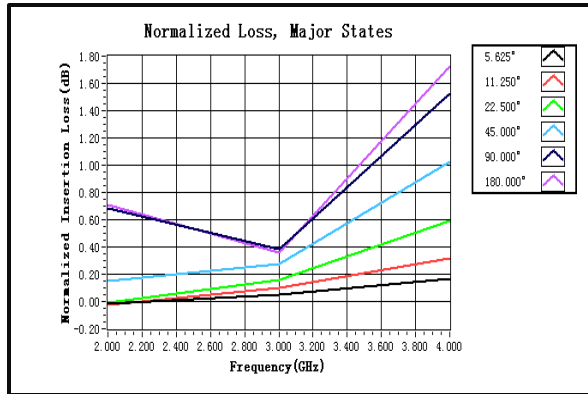
Output VSWR vs. Frequency



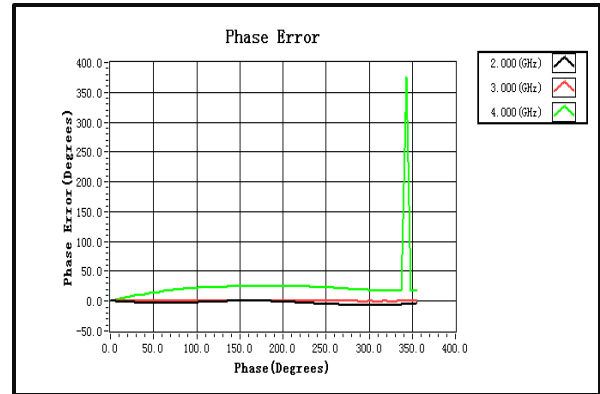
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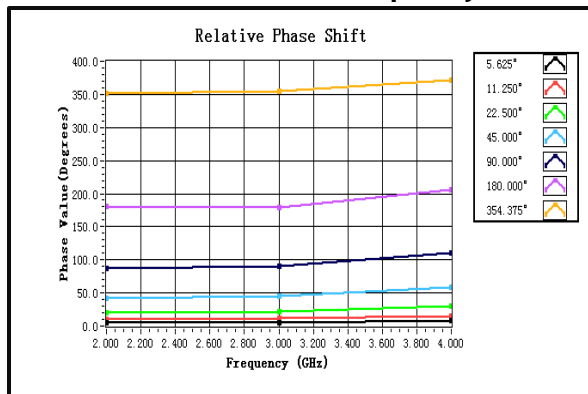
Normalized Loss



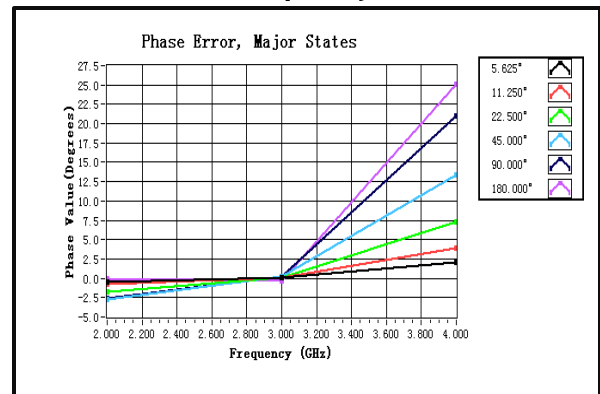
Phase Error vs. State



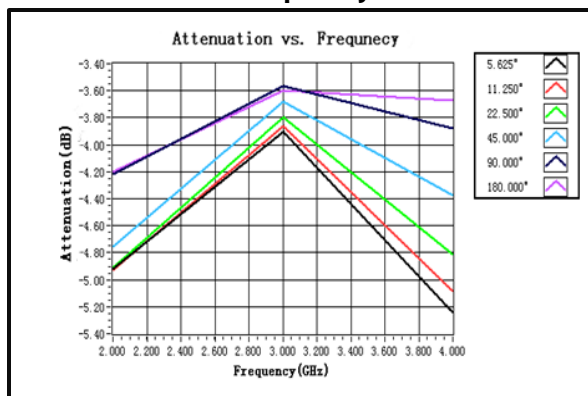
Relative Phase Shift vs. Frequency



Phase Error vs. Frequency



Attenuation vs. Frequency





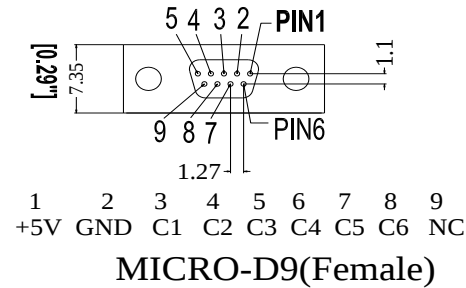
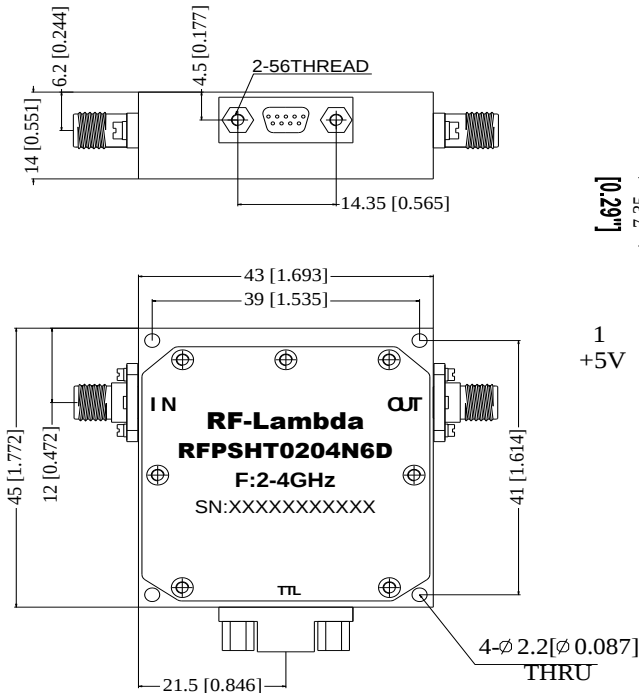
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Outline Drawing:

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	5.625
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	354.375



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