Digital Non-Dispersive 360 Degree Phase Shifter
15 - 19GHz

Features

- Wide Band Operation 15-19GHz
- 6-Bit Resolution
- Customization available upon request

RoHS Compliant

Typical Applications

- Test and Measurement
- Military and Aerospace
- Wireless Infrastructure

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

Description	PN: RFPSHT1519N6			
	Digital Phase Shifter			
Parameters	Min	Typ.	Max	Units
Frequency Range		15-19		GHz
Phase Range		360		°
Control Bits		6		Bit
Control Step Size		5.625		°
Insertion Loss		8.2	9	dB
Insertion Loss Temperature Coefficient		0.003		dB/°C
Phase Flatness		±5	±15	°
Input VSWR		1.8	2.5	: 1
Output VSWR		1.8	2.5	: 1
Input Power(CW)			23	dBm
Bias Current (+5V)		40		mA
Weight		0.71		Ounces
Impedance		50		Ω
Input / Output Connectors	SMA-Female			
Interface and Control Connector	MICRO-D9 (Female)			
Finish	Gold Plated			
Material	Aluminum			
Seal	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	+23dBm

Ordering Information

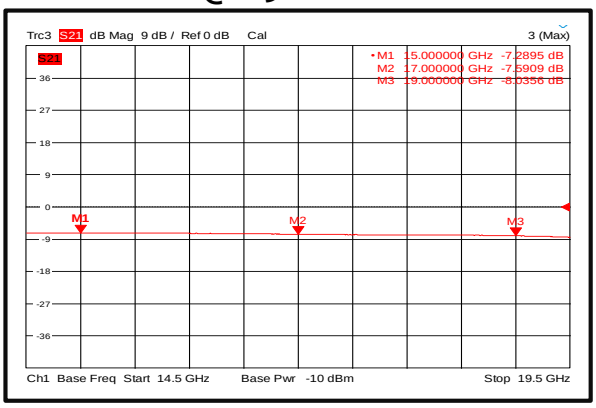
Part No.	ECCN	Description
RFPSHT1519N6	EAR99	15-19GHz Digital Phase Shifter

Environmental Specifications and Test Standards

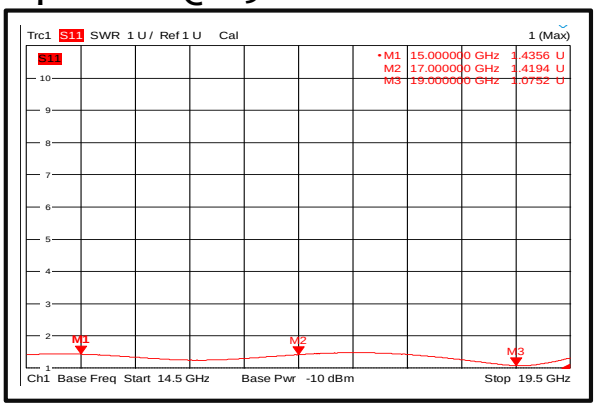
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃
Storage Temperature		-55℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ for 72 Hours
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		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Typical Performance Plots

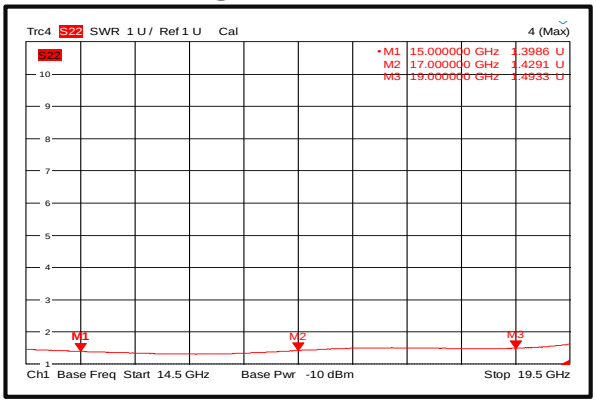
Insertion Loss@+25℃



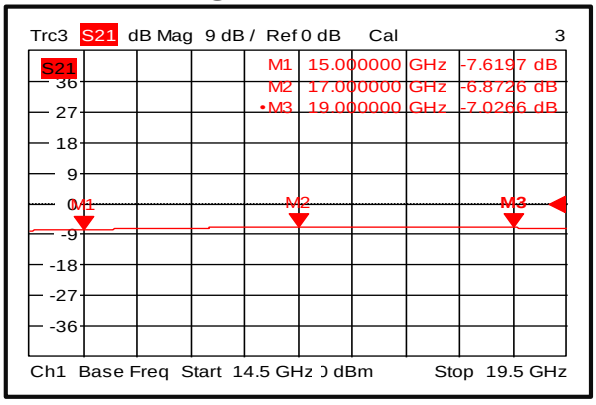
Input VSWR @+25℃



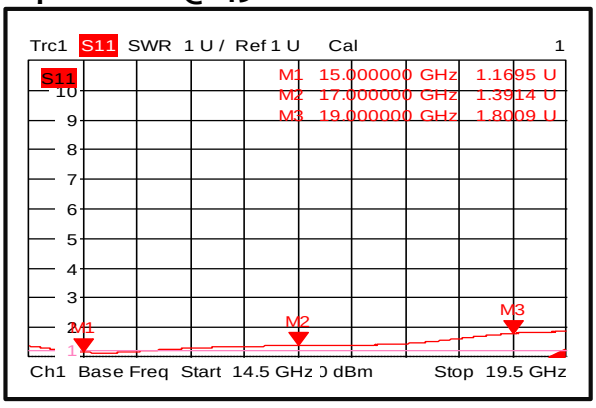
Output VSWR @+25℃



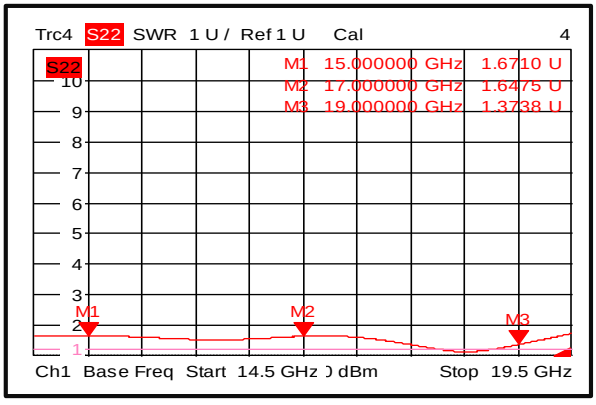
Insertion Loss@-45℃



Input VSWR @-45℃



Output VSWR @-45℃



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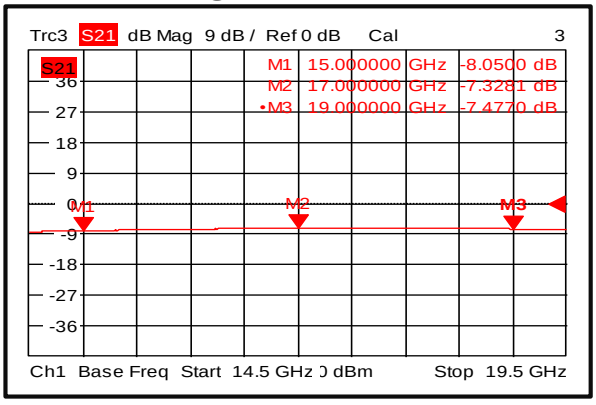
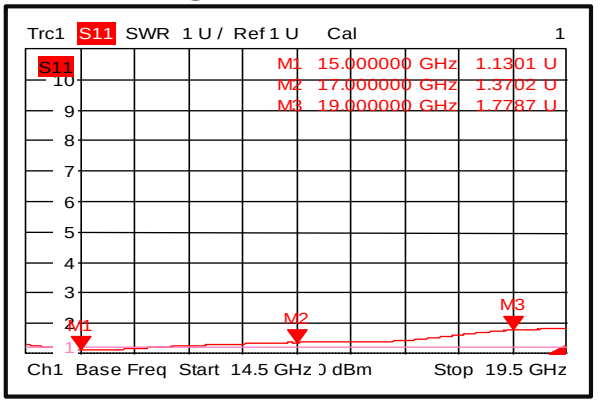
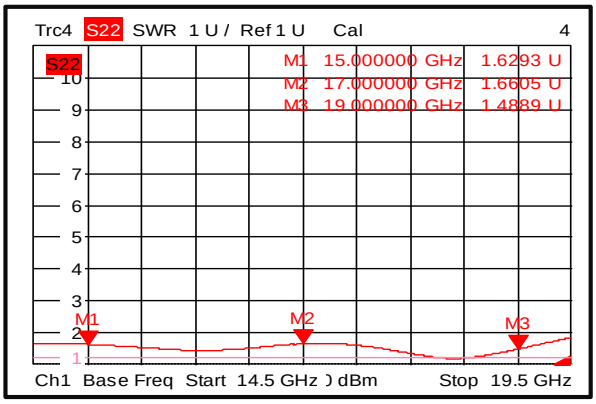
Insertion Loss@+85℃



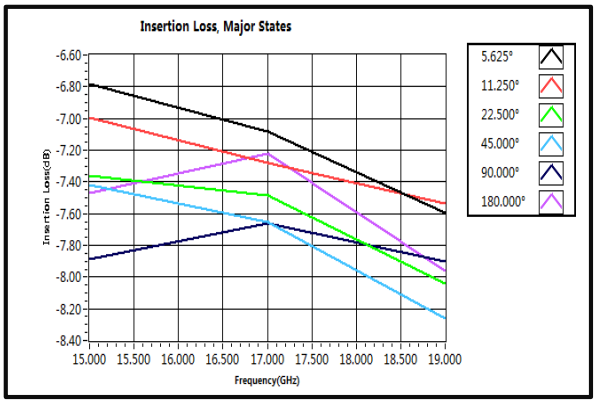
Input VSWR @+85℃



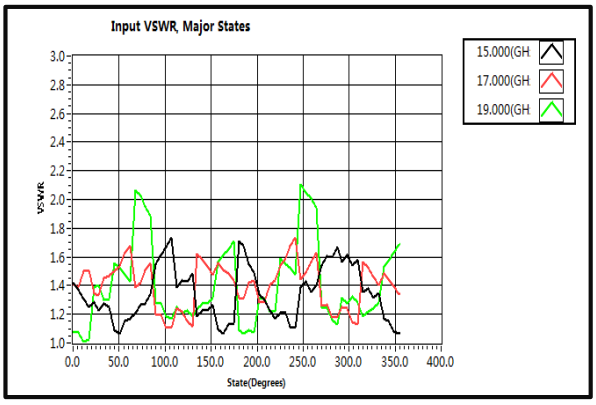
Output VSWR @+85℃



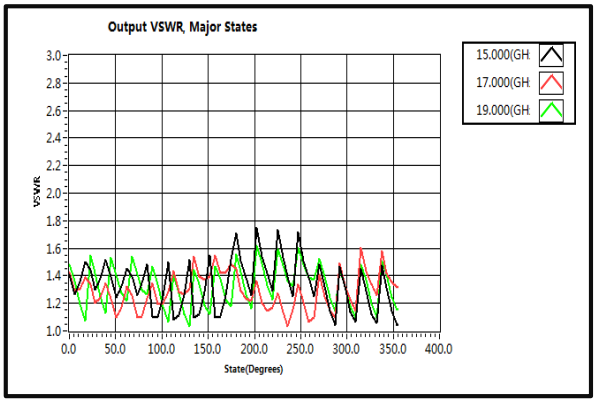
Insertion Loss vs. Frequency



Input VSWR vs. Frequency



Output VSWR vs. Frequency



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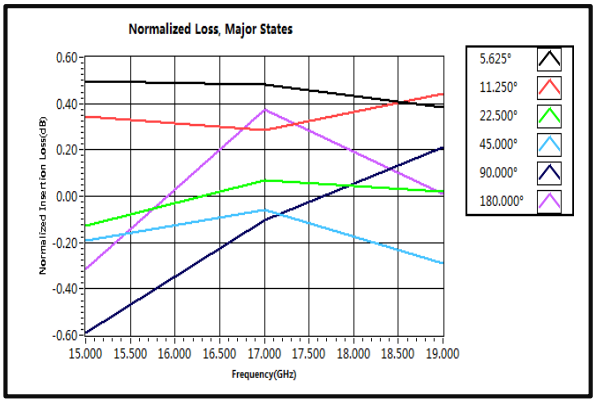
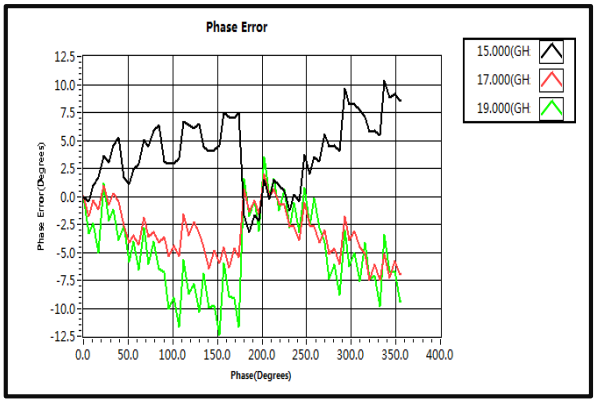
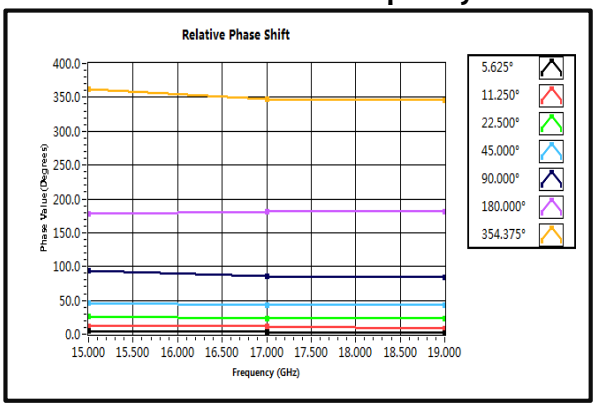
Normalized Loss



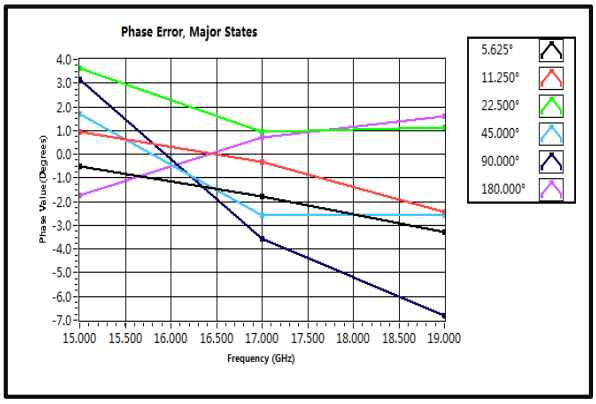
Phase Error vs. State



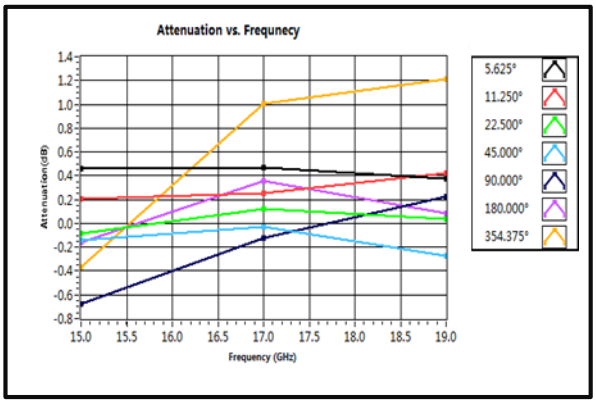
Relative Phase Shift vs. Frequency



Phase Error vs. Frequency



Attenuation vs. Frequency



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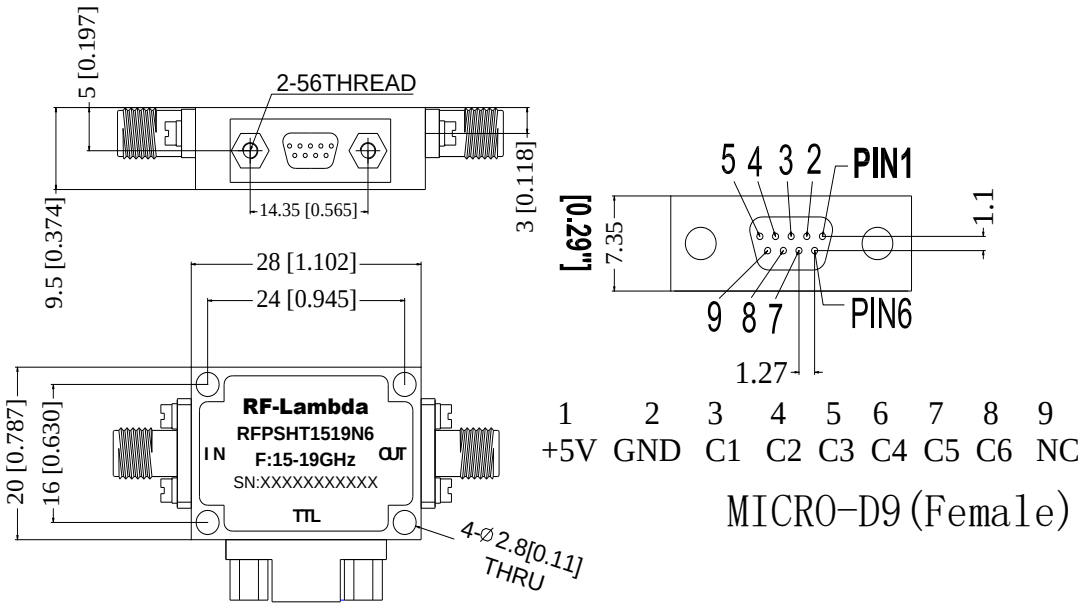
Outline Drawing:

All Dimensions in mm [inches]



Truth Table

Control Voltage Input						Phase Shift (Degrees)
C6	C5	C4	C3	C2	C1	
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	354.375

Important Notice