Voltage Control Phase Shifter
100MHz-140MHz

Product Description

RVPT0120MBC is a voltage control phase shifter with a frequency range of 100 to 140MHz.

The phase shifter's adjustment range 360 degrees with phase flatness of ±35degrees. The insertion loss is 3.0dB with a typical Input Return loss of 18.

Phase shifters are devices used to adjust transmission phase in a system. RF-Lambda phase shifters provide low insertion loss, and equal amplitude (or loss) in all phase states.

The working temperature of this product is between - 40℃ and + 85℃.

Features

- Operational Band: 100-140MHz
- 360° Phase Shift
- Low Insertion Loss and Low Phase Error
- Singe Control Operation

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications (T_A=+25ºC)

Parameter	Min	Typ	Max	Units
Frequency Range	100		140	MHz
Phase Range		360		°
Insertion Loss		3.0	3.5	dB
Insertion Loss Temperature Coefficient		0.01		dB/ °C
Phase Flatness		±35		°
Control Voltage	0	15		V
Input Return loss		18		dB
Output Return loss		18		dB
0.1dB Compression Point (P0.1dB)		20		dBm
Input IP3		35		dBm
Current Consumption		5 Max.		mA
Weight		0.14 Max.		lbs.
Impedance		50		Ohms
Input / Output Connectors	SMA-Female (Input) – SMA-Female (Output)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com

Absolute Maximum Ratings

Parameter	Rating
Control Voltage	0~ +20V
RF Input Power	+20dBm

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85ºC 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 (For Hermetically Sealed Units)

**For vibration testing details please see additional information section.

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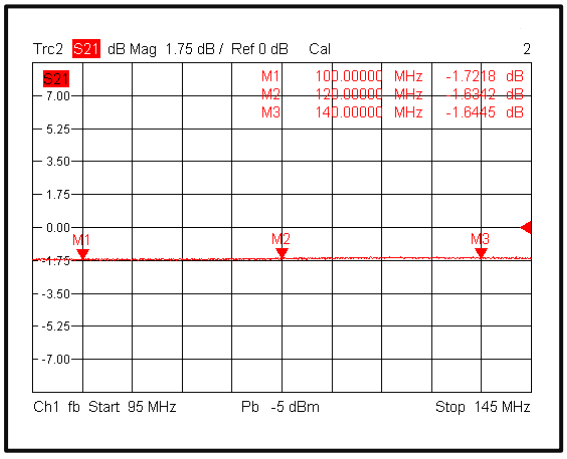
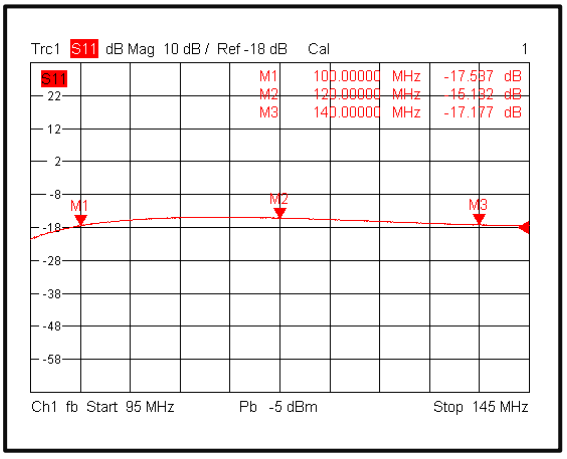
Typical Performance Plots

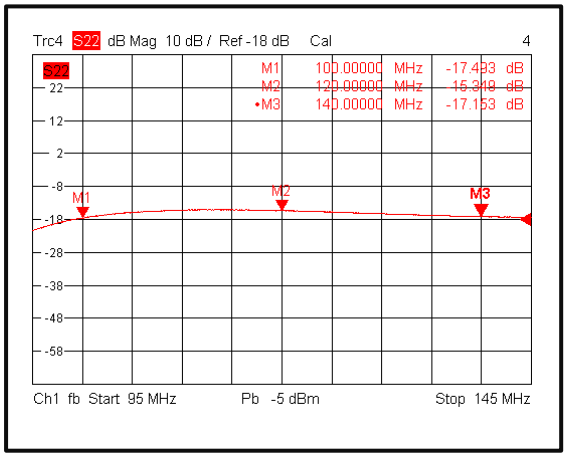
Insertion Loss@+25℃



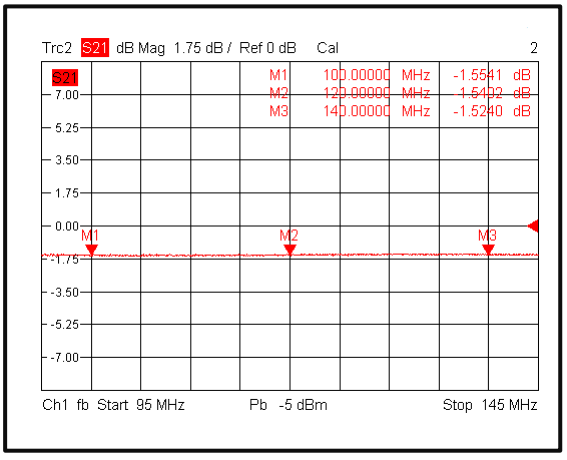
Input Return Loss @+25℃



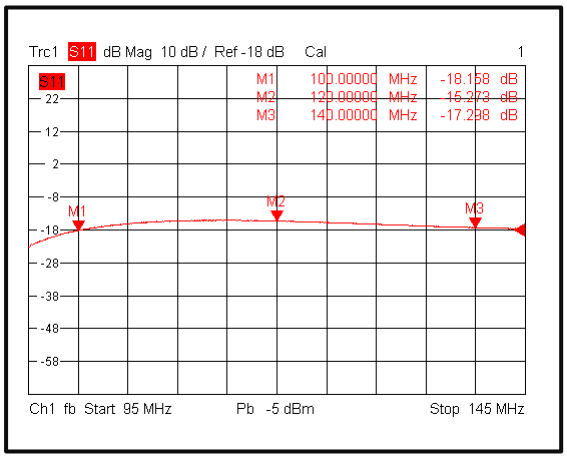
Output Return Loss @+25℃



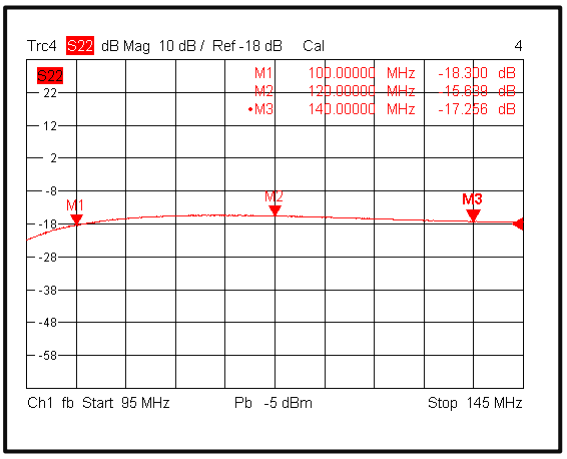
Insertion Loss@-40℃



Input Return Loss @-40℃

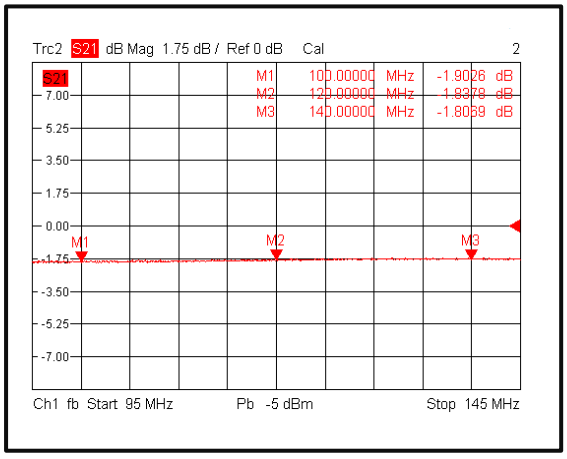


Output Return Loss @-40℃

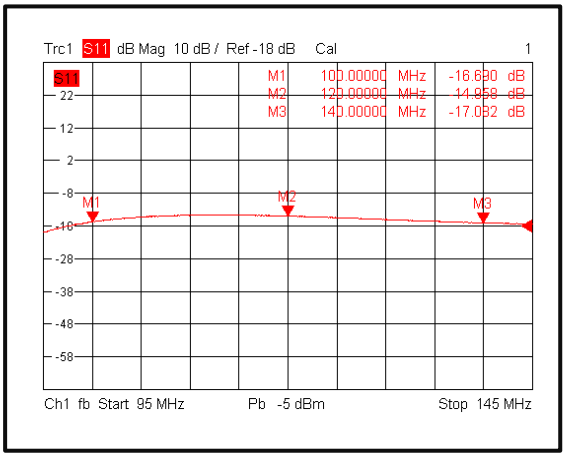


Typical Performance Plots

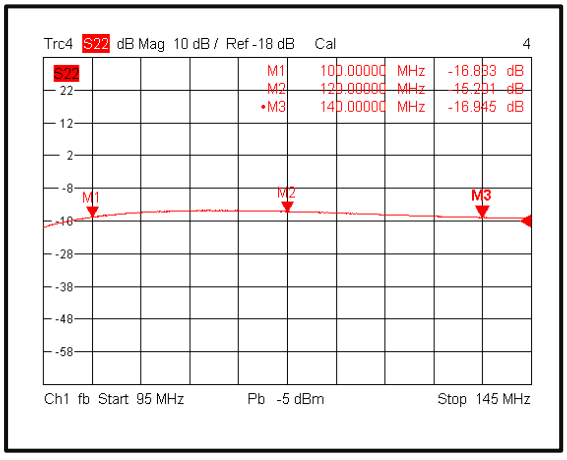
Insertion Loss@+85℃



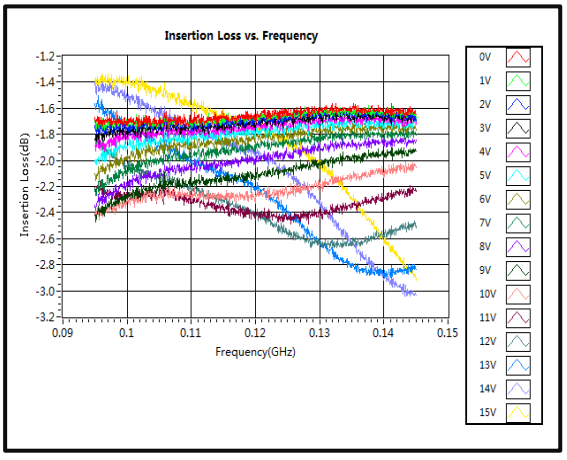
Input Return Loss @+85℃



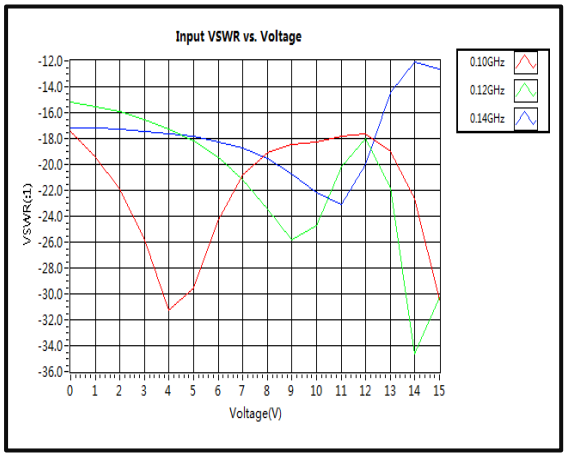
Output Return Loss @+85℃



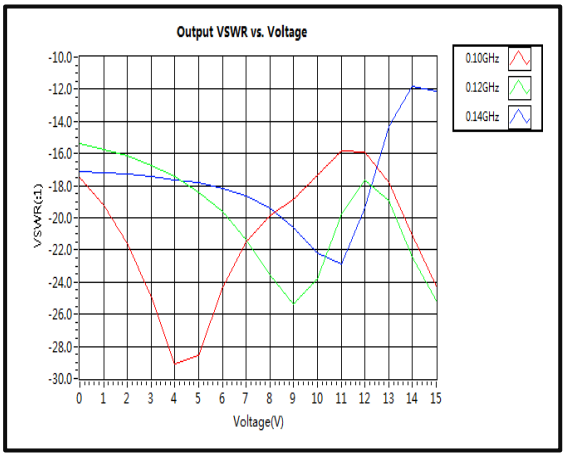
Insertion Loss vs. Frequency



Input VSWR vs. Voltage(s11)

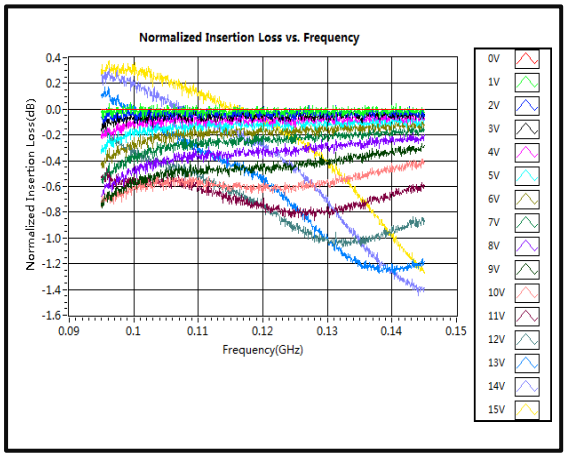


Output VSWR vs. Voltage(s22)

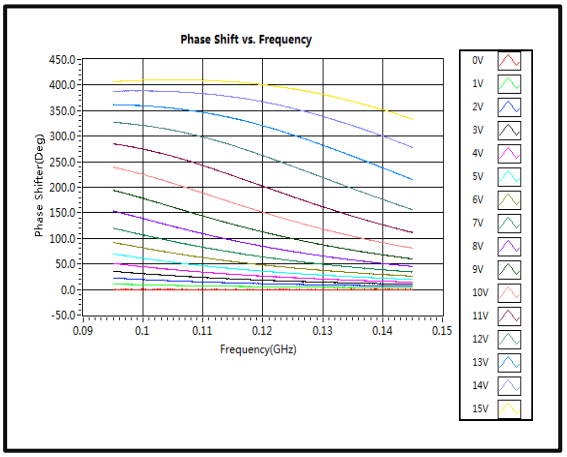


Typical Performance Plots

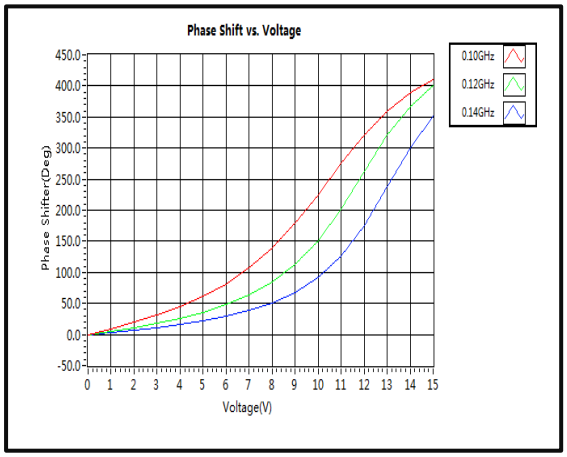
Normalized Insertion Loss vs. Frequency



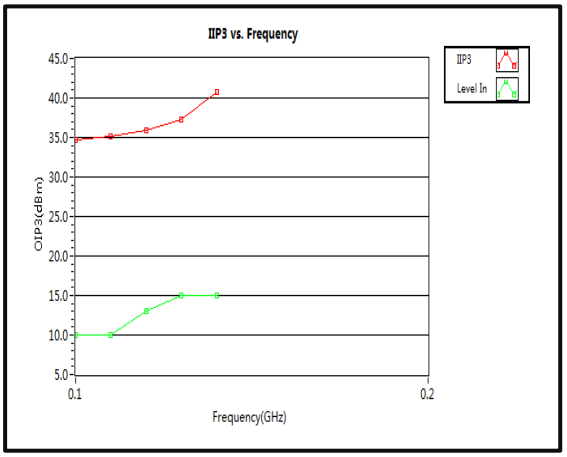
Phase Shift vs. Frequency



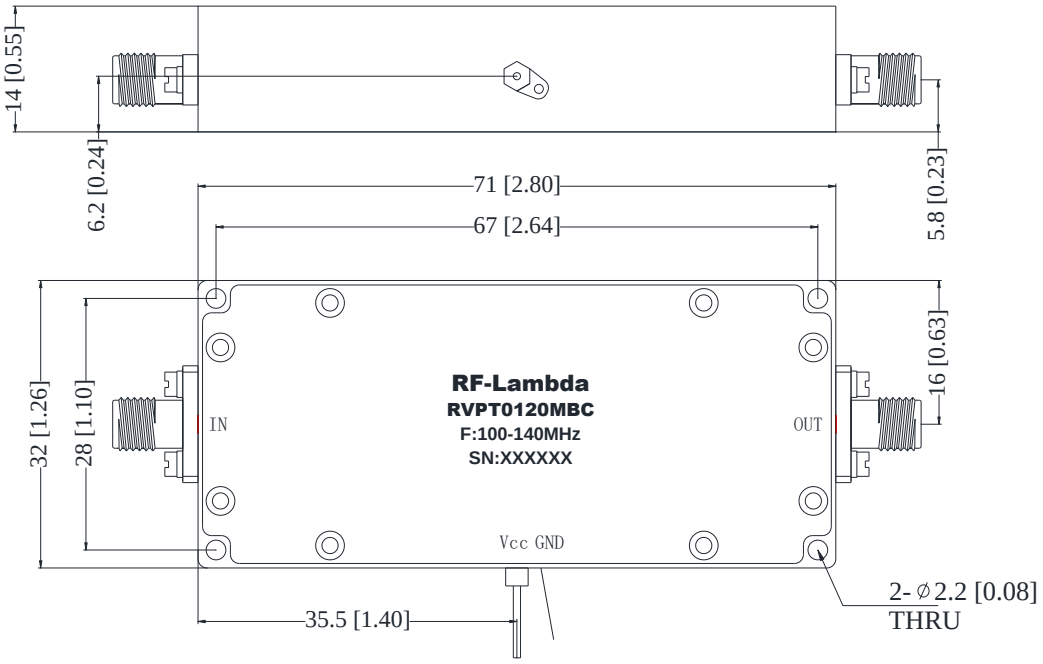
Phase Shift vs. Voltage



IIP3



Outline Drawing



Notes:
1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances±0.1 [0.004]unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.

Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RVPT0120MBC	Standard	100MHz-140MHz Voltage Control Phase Shifter

Important Notice

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