Wide Band Voltage Control Phase Shifter 2GHz-20GHz

Product Description

RVPT0220GAC is a wide band voltage control phase shifter with a frequency range of 2 to 20GHz.

The phase shifter's adjustment range 180 degrees with phase flatness of ±20dB .The insertion loss is 5dB with a typical VSWR of 2.5:1.

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

- Ultra Wide Band Operation 2-20GHz
- 180° Phase Shift
- Low Insertion Loss and Low Phase Error
- Singe Voltage 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	Min	Typ	Max	Units
Frequency Range		2-11			11-20		GHz
Phase Range		180			180		deg
Insertion Loss		5	6		12	13	dB
Insertion Loss Temperature Coefficient		0.07			0.07		dB/ °C
Phase Flatness		±20	±28		±20	±25	deg
Control Voltage	0.5	8.5		0.5	8.5		V
Input VSWR		2.5	3		3.3	3.5	:1
Output VSWR		2.5	3		3.3	3.5	:1
0.1dB Compression Point (P0.1dB)		20			20		dBm
IIP3			28 Typ.				dBm
Current			2 Max.				mA
Weight			0.02Max.				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~ 15V
RF Input power	+26dBm

Environmental Specifications and Test Standards

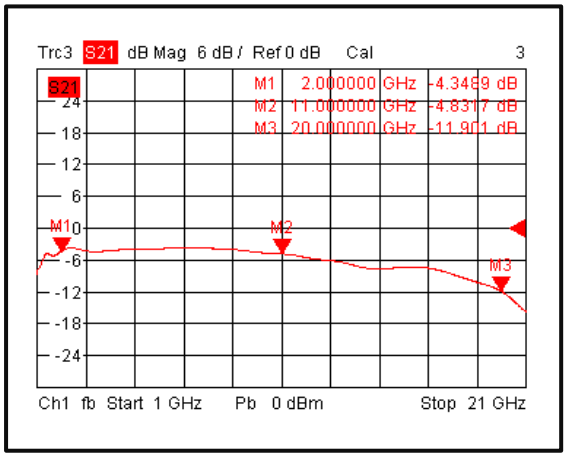
Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85ºC for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

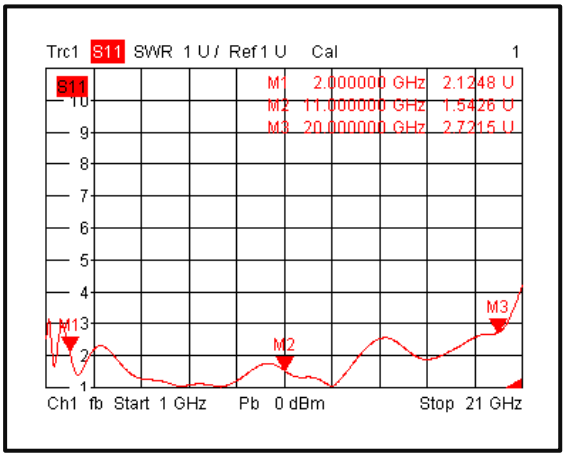
RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com

Typical Performance Plots

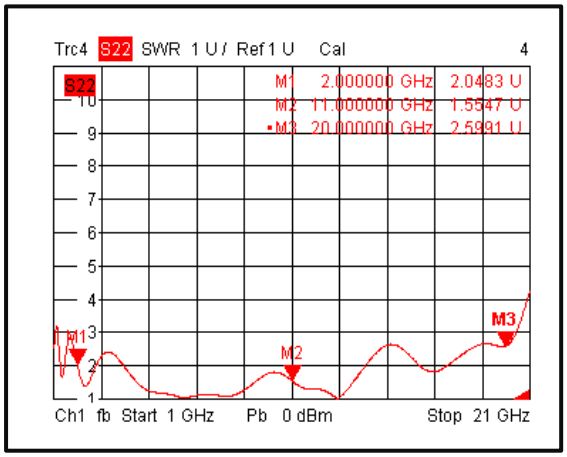
Insertion Loss@+25℃



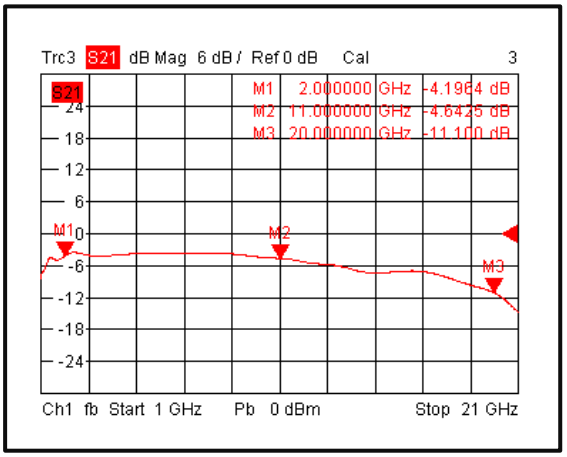
Input VSWR@+25℃



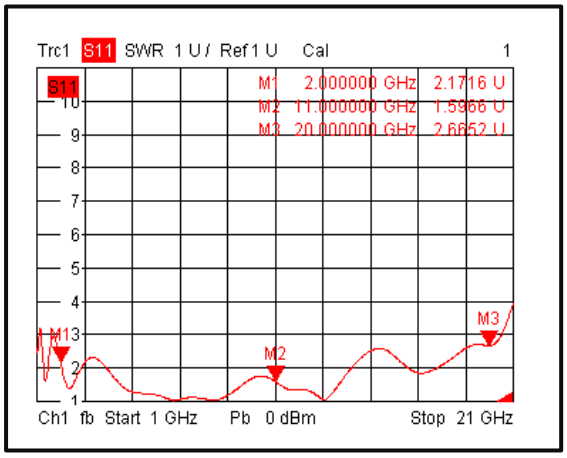
Output VSWR@+25℃



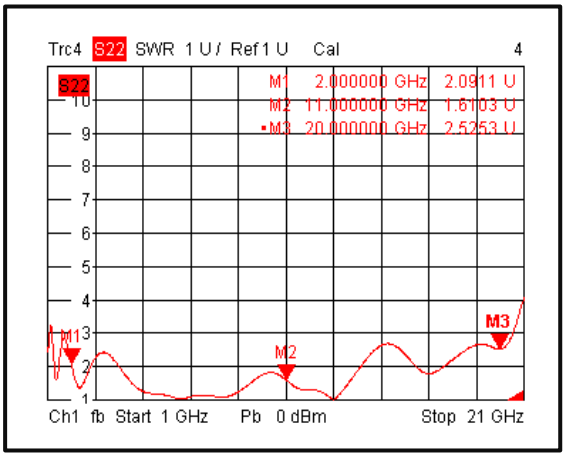
Insertion Loss@-40℃



Input VSWR@-40℃

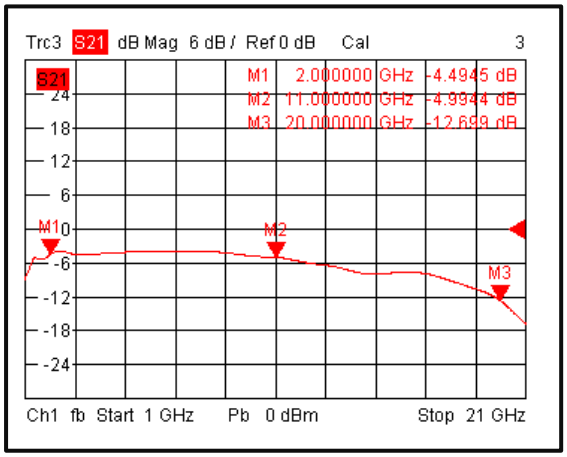


Output VSWR@-40℃

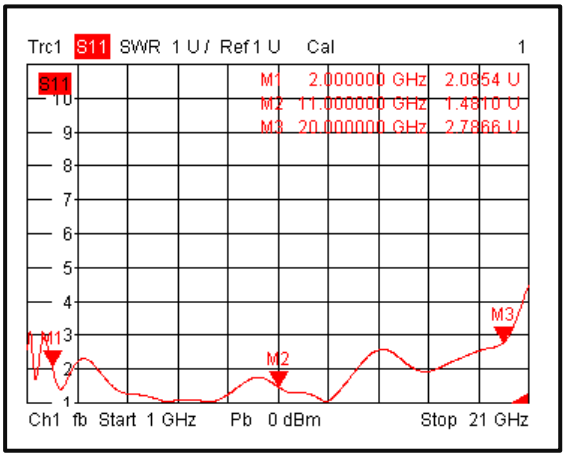


Typical Performance Plots

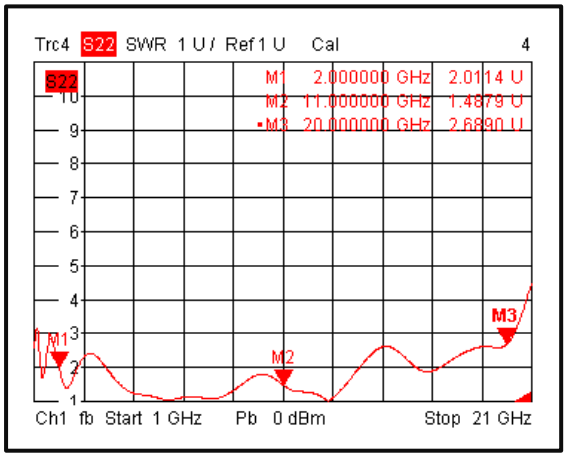
Insertion Loss@+85℃



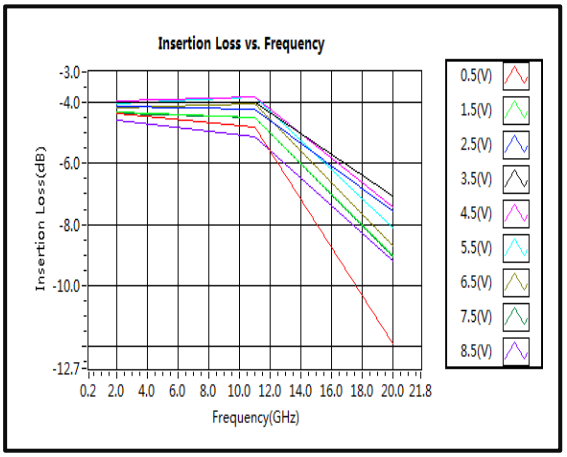
Input VSWR@+85℃



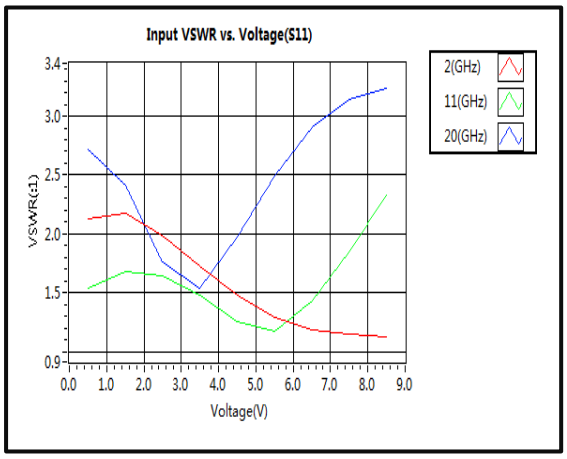
Output VSWR@+85℃



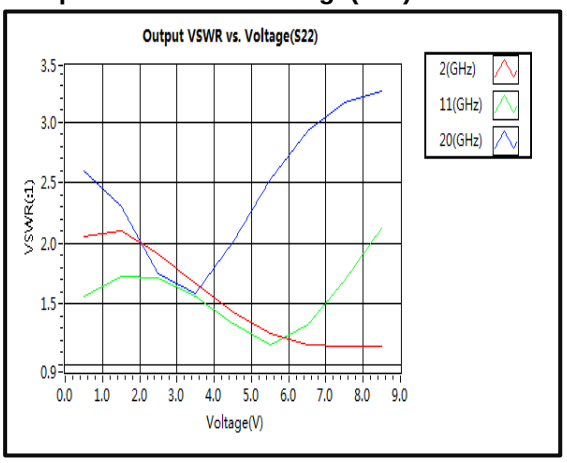
Insertion Loss vs. Frequency



Input VSWR vs. Voltage(s11)

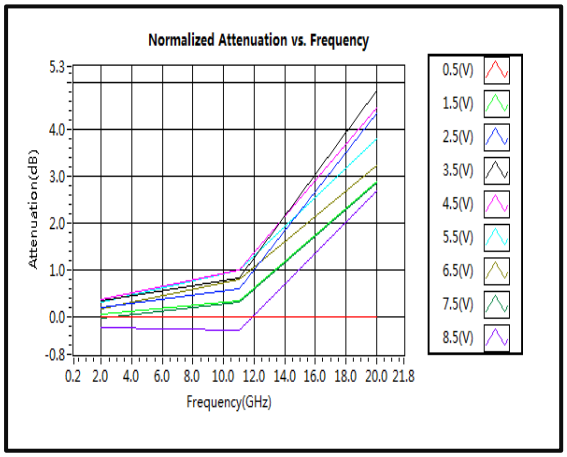


Output VSWR vs. Voltage(s22)

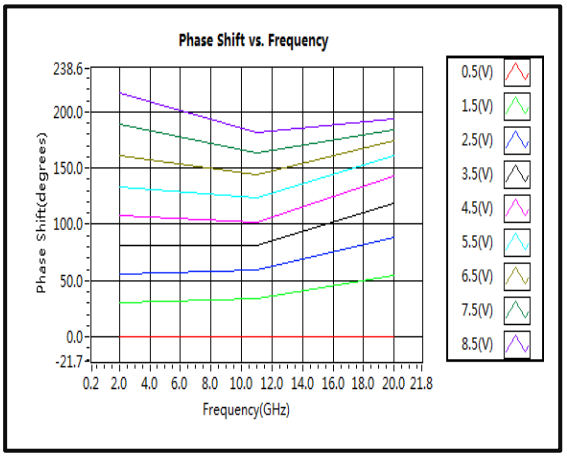


Typical Performance Plots

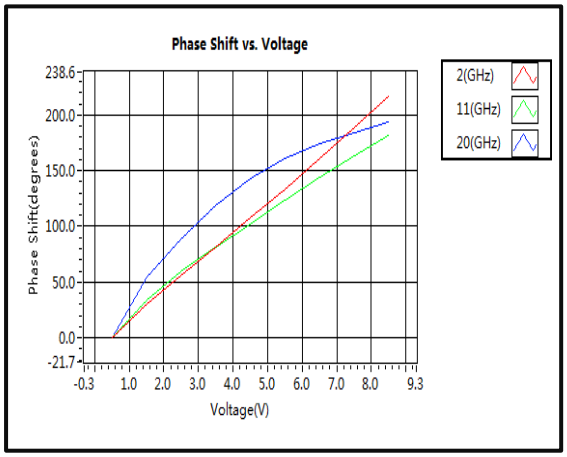
Normalized Attenuation vs. Frequency



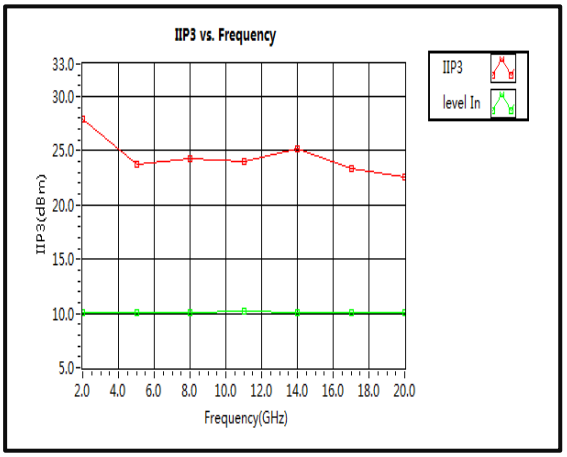
Phase Shift vs. Frequency



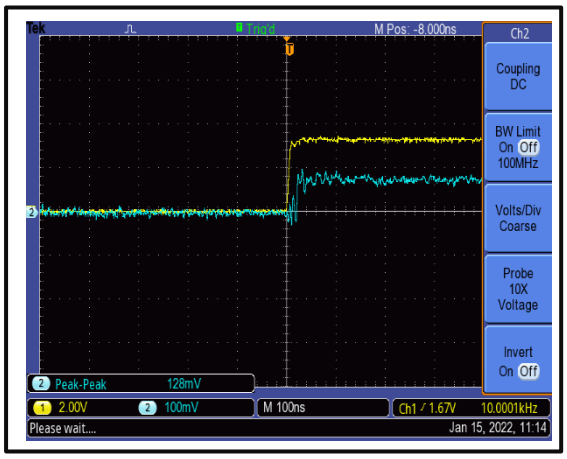
Phase Shift vs. Voltage



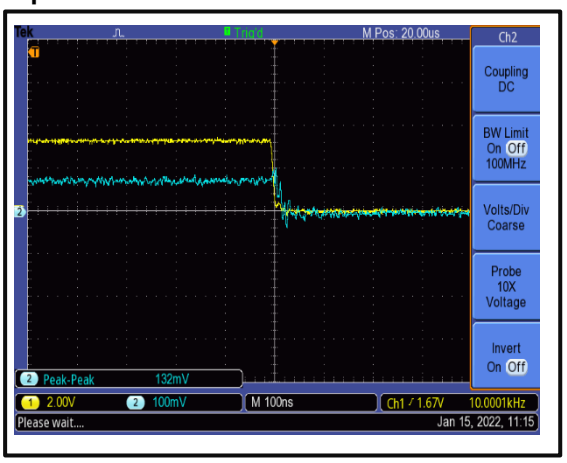
IIP3



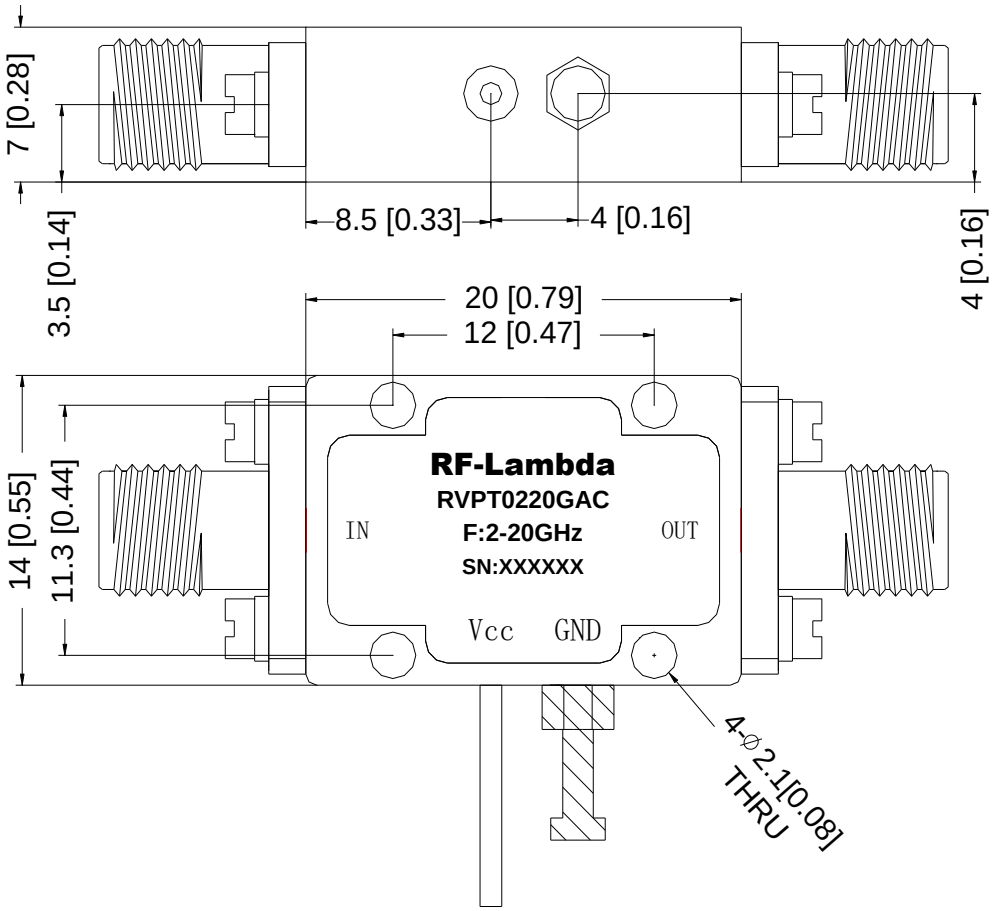
Speed



Speed



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
RVPT0220GAC	Standard	2GHz-20GHz Voltage Control Phase Shifter

Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.
RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.

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