Voltage Control Phase Shifter
350 - 450MHz

Note: The photo is for illustration purposes only.
Please refer to the outline drawing.

Features

- Wide Band Operation 350-450MHz
- 360° Phase Shift
- Low Insertion Loss and Low Phase Error
- Singe Control Operation

Typical Applications

- Test and Measurement
- Military and Aerospace
- Research and Development

Electrical Specifications, TA = +25 ℃

Description	PN: RVPT350M450MBC			
	Voltage Control Phase Shifter			
Parameters	Min.	Typ.	Max.	Units
Frequency Range		350-450		MHz
Phase Range		360		degrees
Phase Flatness		±25		degrees
Insertion Loss (Non phase shifting states)		5.0	5.5	dB
Insertion Loss Temperature Coefficient		0.01		dB/ ° C
Control Voltage	0	15		V
Input VSWR		1.4	1.6	: 1
Output VSWR		1.4	1.6	: 1
0.1dB Compression Point (P0.1dB)		25		dBm
Current		5 Max.		mA
Impedance		50		Ω
Weight		0.35 Max.		ounces
Finish		Nickel Plated		
Material		Aluminum		
Package		SMD		

Absolute Maximum Ratings

Control Voltage	0~ 18V
RF Input Power	+27dBm

Ordering Information

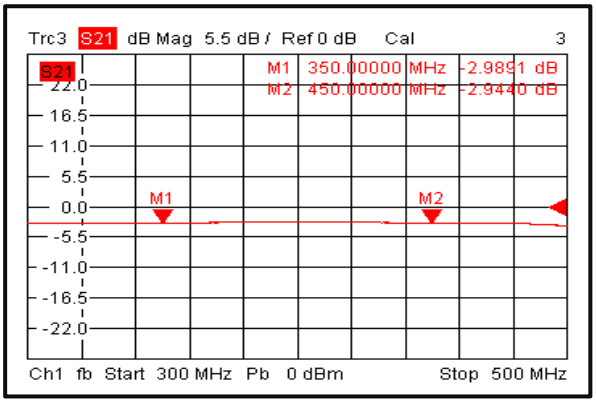
Part No.	Description
RVPT350M450MBC	350-450MHz Voltage Control Phase Shifter

Environmental Specifications and Test Standards

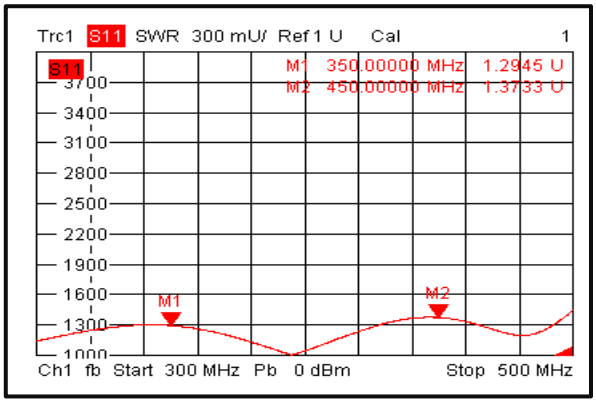
Parameter	Description
Operational Temperature	-40℃~+85℃ (Case Temperature)
Storage Temperature	-50℃~+205℃
Thermal Shock	-40℃ → +55℃ (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85℃ for 72 Hours
Shock	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 (For Hermetically Sealed Units)

Typical Performance Plots

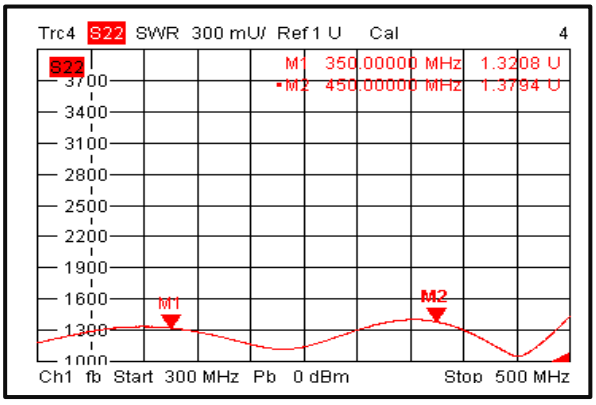
Insertion Loss @ +25℃



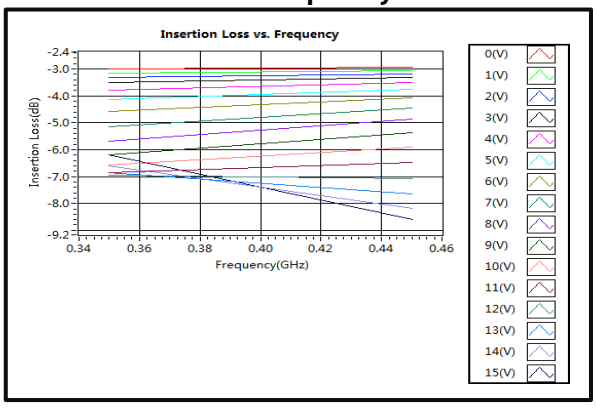
Input VSWR @ +25℃



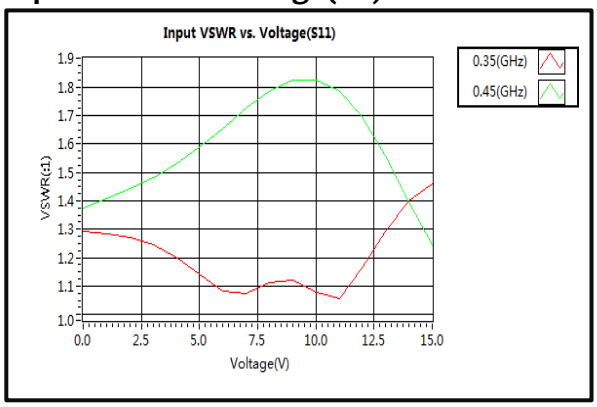
Output VSWR @ +25℃



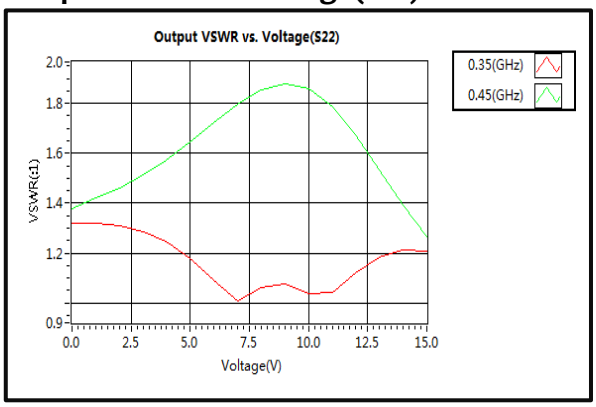
Insertion Loss vs. Frequency



Input VSWR vs. Voltage(s11)

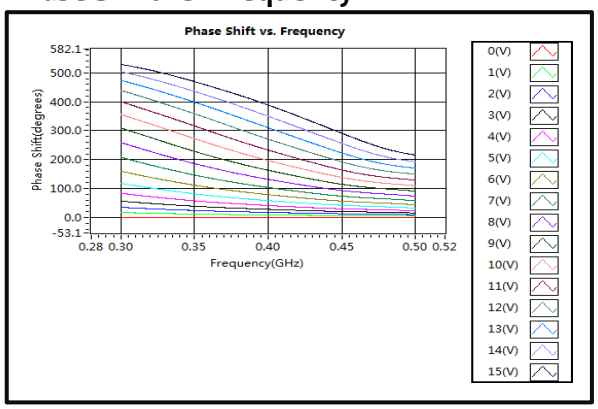


Output VSWR vs. Voltage(s22)

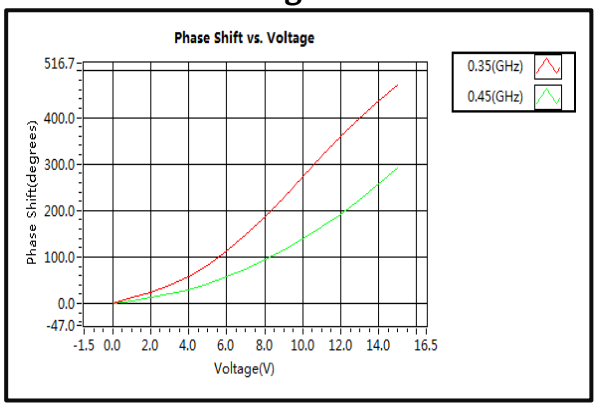


Voltage Control Phase Shifter 350 - 450MHz

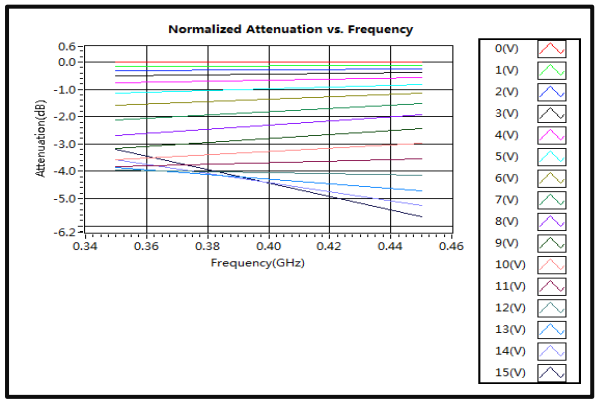
Phase Shift vs. Frequency



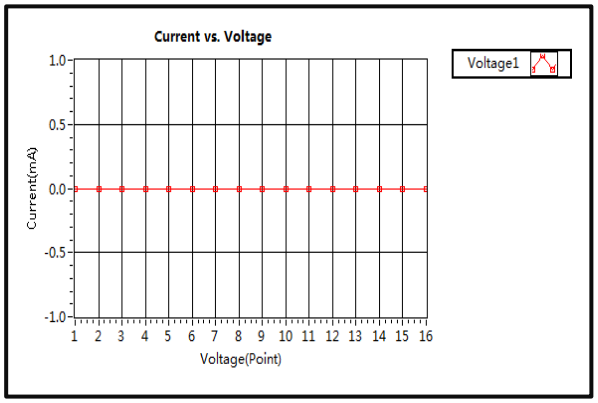
Phase Shift vs. Voltage



Normalized Attenuation vs. Frequency

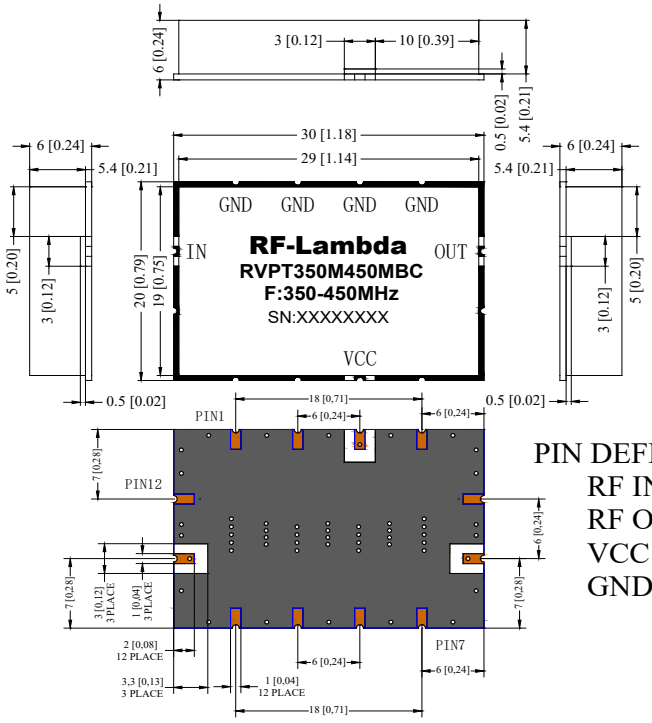


Current



Outline Drawing:

All Dimensions in mm [inches]
Housing Tolerance ±0.2 [0.008]



PIN DEFINITION
RF IN :11
RF OUT :6
VCC :3
GND :1,2,4,5,7,
8,9,10,12

Important Notice

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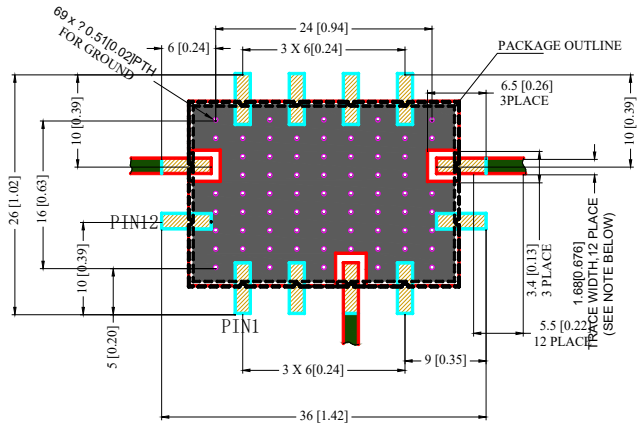
Recommended PCB Footprint

All Dimensions in mm [inches]

Housing Tolerance ±0.13 [0.005]



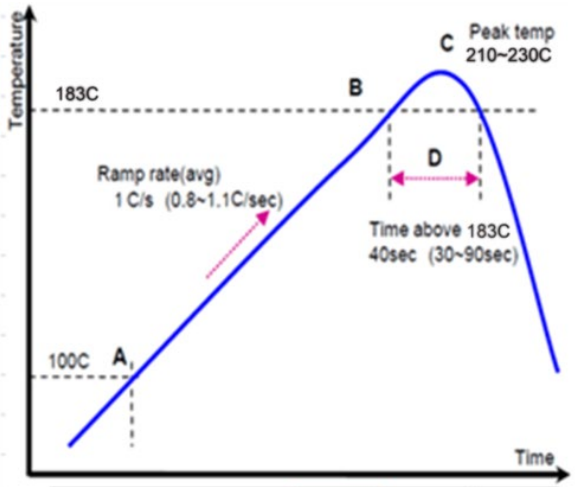
NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030"±0.002",COPPER :0.5OZ. EACH SIDE.
   FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Recommended Reflow Temperature Profile



Point		Standard	Upper	Lower
A	Pre-heat start point	100C	-	-
B	Pre-heat end point	183C	-	-
A-B	Pre-heat time	100sec	150sec	80sec
Ramp up rate to Peak temp		1 C/sec	0.8C/sec	1.1C/sec
C	Peak temperature	220C	230C	210C
D	Time above 220C	40sec	90sec	30sec

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