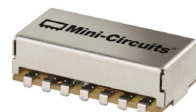


Phase Shifter

50Ω 180° Voltage Variable 36 to 54 MHz

JSPHS-51+



CASE STYLE: BK276
PRICE: \$32.95 ea. QTY (1-9)

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	20 dBm max.
Control Voltage	18V

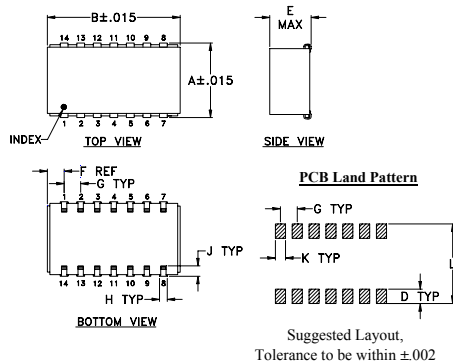
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

IN	1
OUT	7
BIAS	4,6^
GROUND	2,3,,5,8,9,10,11,12,13,14

^ proper operation is achieved with pins 4 or 6 or both connected to BIAS.

Outline Drawing

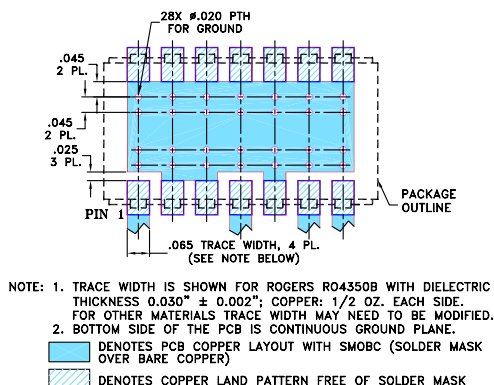


Outline Dimensions (inch mm)

A	B	C	D	E	F	G
.450	.803	--	.100	.250	.102	.100
11.43	20.40	--	2.54	6.35	2.59	2.54

H	J	K	L	wt
.047	.065	.065	.470	grams
1.19	1.65	1.65	11.94	3.0

Demo Board MCL P/N: TB-122+ Suggested PCB Layout (PL-030)



Features

- low insertion loss, 1.2 dB typ.
- good VSWR, 1.3 typ.
- solder-plated J-leads for excellent solderability and strain relief
- aqueous washable

Applications

- IF signal processing

Phase Shifter Electrical Specifications

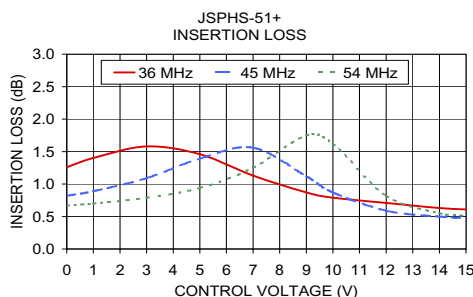
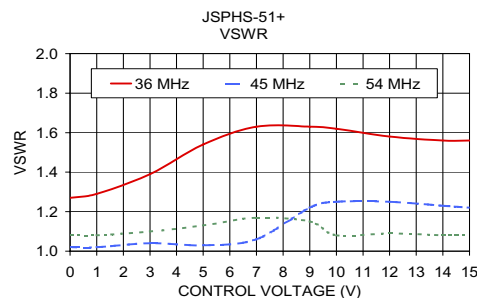
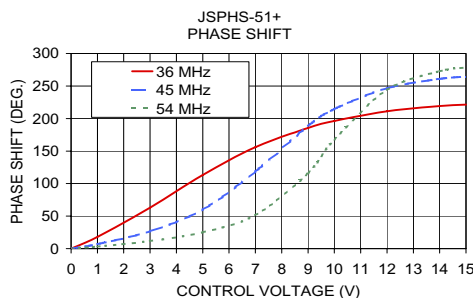
FREQUENCY (MHz)	PHASE RANGE (Degrees)	INSERTION LOSS (dB)	CONTROL VOLTAGE (V)	CONTROL BANDWIDTH (kHz)	VSWR (:1)
	Min.	Typ. Max.		Typ.	Typ. Max.
36-54	180	1.2 2.5	0-12	DC-50	1.2 1.8

Maximum operating power, 0 dBm
DC input resistance at Control port: 9.3k ohms typ.

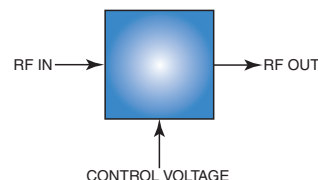
Typical Performance Data

Control Voltage (V)	Phase Shift* (Degrees)			VSWR (:1)			Insertion Loss (dB)		
	36 MHz	45 MHz	54 MHz	36 MHz	45 MHz	54 MHz	36 MHz	46 MHz	54 MHz
0.0	0.00	0.00	0.00	1.27	1.02	1.08	1.26	0.82	0.67
1.0	18.04	7.16	3.25	1.29	1.02	1.08	1.40	0.89	0.70
3.0	62.86	26.70	11.66	1.39	1.04	1.10	1.58	1.09	0.79
5.0	113.34	59.95	25.08	1.54	1.03	1.13	1.46	1.39	0.94
7.0	155.95	118.73	51.60	1.63	1.06	1.17	1.13	1.56	1.25
9.0	185.56	188.68	116.21	1.63	1.22	1.15	0.87	1.12	1.75
10.0	196.22	214.66	168.00	1.62	1.25	1.08	0.79	0.87	1.62
12.0	211.20	246.54	244.09	1.58	1.25	1.09	0.71	0.59	0.82
14.0	219.23	260.98	272.59	1.56	1.23	1.08	0.63	0.50	0.55
15.0	221.44	264.40	278.57	1.56	1.22	1.08	0.61	0.48	0.51

* Normalized at control voltage = 0V



electrical schematic



Notes

- Notes
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 - Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
 - The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

