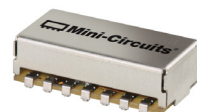


Phase Shifter

50Ω 180° Voltage Variable 12 to 16 MHz

JSPHS-16+



CASE STYLE: BK276

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

Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -55°C to 100°C

RF Input Power 20 dBm max.

Control Voltage 20V

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

Pin Connections

IN 1

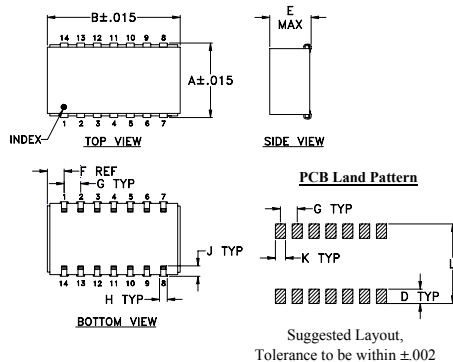
OUT 7

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

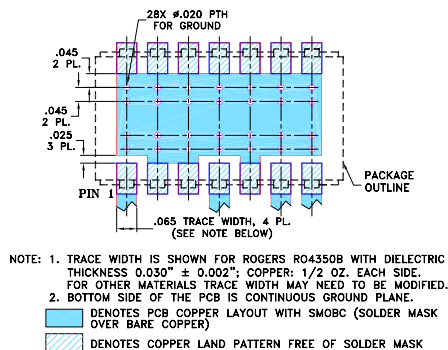


Outline Dimensions (inch mm)

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, 1.0 dB typ.
- good VSWR, 1.1:1 typ.
- J-leads for excellent solderability and strain relief
- aqueous washable

Applications

- cellular
- PCS
- DCS

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.
12-16	180	1.0 2.5	0-7	DC-50	1.1 1.8

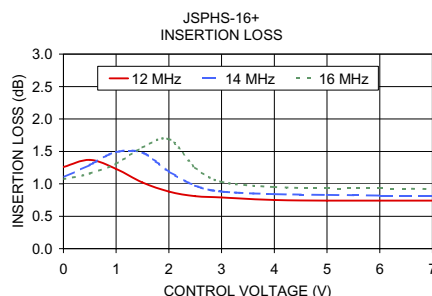
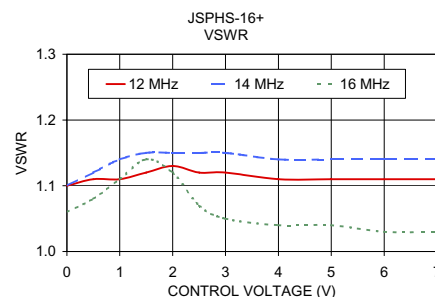
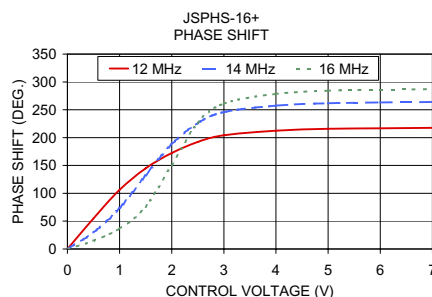
Maximum operating power, 0 dBm

DC input resistance at Control port: 3500 ohms typ.

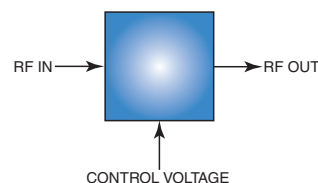
Typical Performance Data

Control Voltage (V)	Phase Shift* (Degrees)			VSWR (:1)			Insertion Loss (dB)		
	12 MHz	14 MHz	16 MHz	12 MHz	14 MHz	16 MHz	12 MHz	14 MHz	16 MHz
0.00	0.02	0.01	0.01	1.10	1.10	1.06	1.26	1.10	1.07
0.50	54.70	29.73	14.67	1.11	1.12	1.08	1.37	1.29	1.16
1.00	106.13	73.46	36.50	1.11	1.14	1.11	1.23	1.49	1.31
1.50	144.75	132.11	75.89	1.12	1.15	1.14	1.02	1.48	1.56
2.00	172.33	188.15	150.51	1.13	1.15	1.12	0.88	1.19	1.69
2.50	192.14	225.95	225.99	1.12	1.15	1.07	0.81	0.97	1.25
3.00	204.26	245.78	261.16	1.12	1.15	1.05	0.79	0.88	1.03
4.00	212.34	257.34	278.43	1.11	1.14	1.04	0.75	0.84	0.95
5.00	215.76	261.84	284.35	1.11	1.14	1.04	0.74	0.83	0.93
6.00	216.71	263.05	285.89	1.11	1.14	1.03	0.74	0.82	0.93
7.00	217.45	263.99	287.07	1.11	1.14	1.03	0.74	0.82	0.92

* Normalized at control voltage = 0V



electrical schematic



Notes

- A. 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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
- C. 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



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