

# Narrow Band Phase Shifter

## JSPHS-446

50Ω 180° Voltage Variable 366 to 446 MHz

### Maximum Ratings

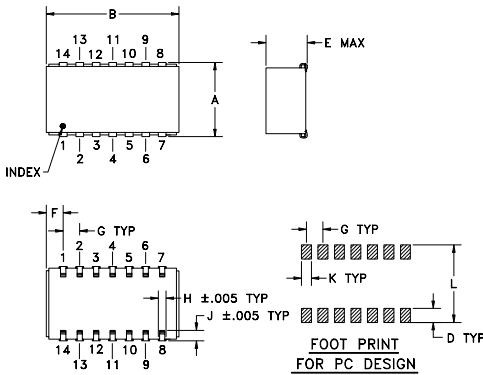
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	20 dBm max.
Control Voltage	20V

### Pin Connections

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

^ pins must be connected together externally

### Outline Drawing



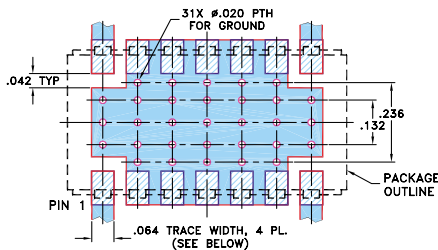
### Outline Dimensions (inch/mm)

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-152 Suggested PCB Layout (PL-214)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. 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

### Features

- good VSWR, 1.3:1 typ.
- low insertion loss, 1.4 dB typ.
- solder-plated J-leads for excellent solderability and strain relief
- aqueous washable

### Applications

- signal processing



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

### Phase Shifter Electrical Specifications

FREQUENCY (MHz)	PHASE RANGE (Degrees)	INSERTION LOSS (dB)		CONTROL VOLTAGE (V)	CONTROL BANDWIDTH (kHz)	VSWR (:1)	
		Typ.	Max.			Typ.	Max.
366-446	Min. 180	1.2	2.5	0-12	DC-50	1.2	1.7

Maximum operating power, 0 dBm

### Typical Performance Data

Control Voltage (V)	Phase Shift* (degrees)			VSWR (:1)			Insertion Loss (dB)		
	366 MHz	406 MHz	446 MHz	366 MHz	406 MHz	446 MHz	366 MHz	406 MHz	446 MHz
0.5	0.05	0.03	0.01	1.17	1.09	1.37	1.10	1.02	1.10
1.0	7.65	5.43	4.14	1.21	1.06	1.34	1.17	1.04	1.08
3.0	57.73	41.01	29.01	1.44	1.19	1.16	1.67	1.37	1.22
5.0	137.57	112.81	84.75	1.38	1.44	1.32	1.68	1.84	1.70
7.0	186.22	174.91	151.47	1.10	1.21	1.29	1.17	1.49	1.79
9.0	205.93	203.06	189.91	1.10	1.22	1.25	1.02	1.25	1.52
10.0	211.22	210.59	200.96	1.12	1.25	1.29	0.99	1.19	1.44

\*Normalized at control voltage=0.5V

