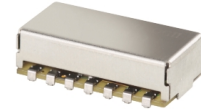


# Narrow Band Phase Shifter

# JSPHS-150+ JSPHS-150

50Ω 180° Voltage Variable 100 to 150 MHz



## Maximum Ratings

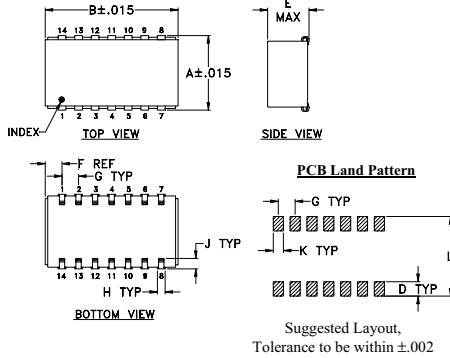
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	20 dBm max.
Control Voltage	20V

## Pin Connections

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

^A pins must be connected together externally

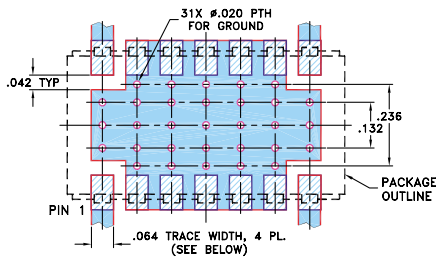
## Outline Drawing



## 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

- low insertion loss, 1.0 dB typ.
- good VSWR, 1.3 typ.
- solder-plated J-leads for excellent solderability and strain relief
- aqueous washable

## Applications

- aircraft communication
- delay for feed-forward amplifier

CASE STYLE: BK276  
PRICE: \$31.95 ea. QTY (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

## Phase Shifter Electrical Specifications

FREQUENCY (MHz)	PHASE RANGE (Degrees)	INSERTION LOSS (dB)		CONTROL VOLTAGE (V)	CONTROL BANDWIDTH (kHz)	VSWR (:1)	
		Typ.	Max.			Typ.	Max.
100-150	180	1.2	2.5	0-12	DC-30	1.2	1.7

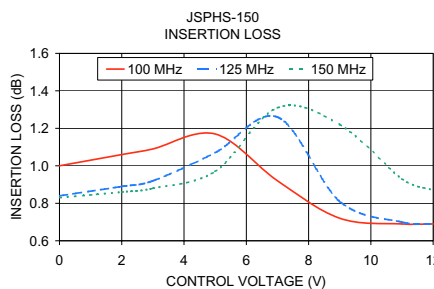
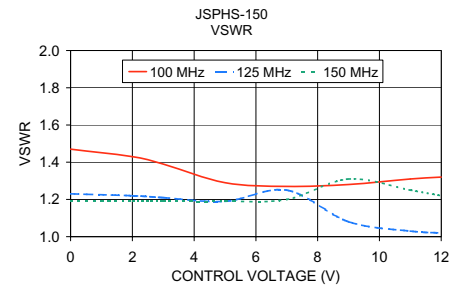
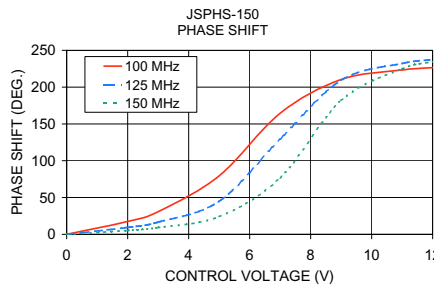
Maximum operating power, 0 dBm

DC input resistance at Control port: 5900 ohms typ.

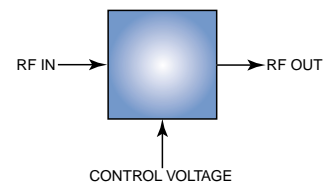
## Typical Performance Data

Control Voltage (V)	Phase Shift* (Degrees)			VSWR (:1)			Insertion Loss (dB)		
	100 MHz	125 MHz	150 MHz	100 MHz	125 MHz	150 MHz	100 MHz	125 MHz	150 MHz
0.00	0.00	0.00	0.00	1.47	1.23	1.19	1.00	0.84	0.83
2.00	17.45	9.44	5.29	1.43	1.22	1.19	1.06	0.89	0.86
3.00	30.77	16.64	9.21	1.39	1.21	1.19	1.09	0.92	0.88
5.00	79.43	44.98	24.15	1.29	1.19	1.19	1.17	1.07	0.97
7.00	164.59	129.35	76.74	1.27	1.25	1.20	0.92	1.26	1.31
9.00	210.43	209.45	181.98	1.28	1.08	1.31	0.72	0.81	1.22
11.00	223.27	232.18	225.01	1.31	1.03	1.25	0.69	0.70	0.93
12.00	226.44	237.51	234.67	1.32	1.02	1.22	0.69	0.69	0.87

\* Normalized at control voltage = 0V



## electrical schematic



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