

Narrow Band Phase Shifter

50Ω 180° Voltage Variable 12 to 16 MHz

JSPHS-16+



CASE STYLE: BK276
PRICE: \$29.95 ea. QTY (1-9)

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

The +Suffix has been added in order to identify 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 | 20V |

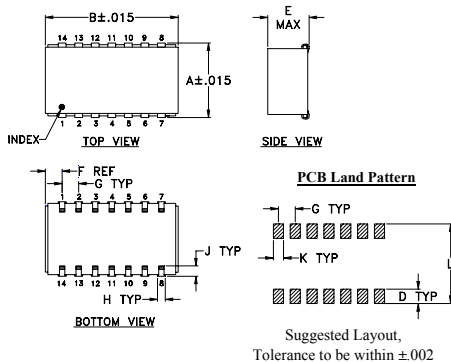
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

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

^ pins must be connected together externally

Outline Drawing

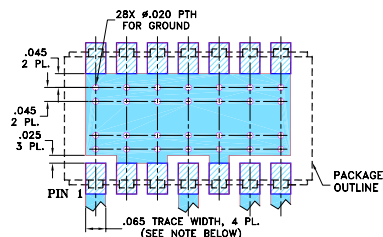


Outline Dimensions (inch mm)

| 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-122 Suggested PCB Layout (PL-030)



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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, 1.1:1 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 |

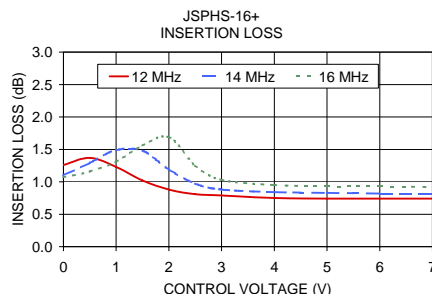
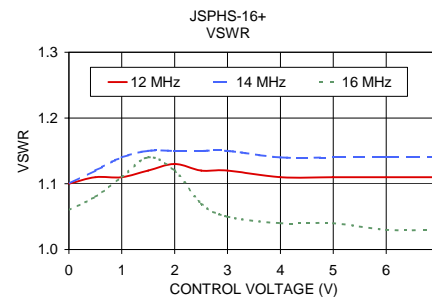
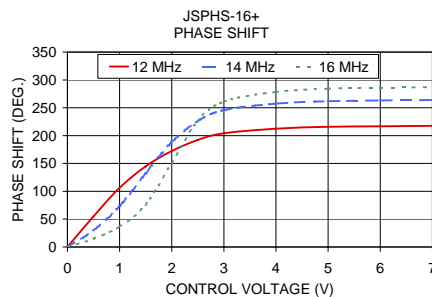
Maximum operating power, 0 dBm

DC input resistance at Control port: 3500 ohms typ.

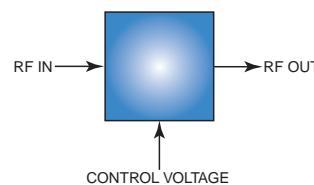
Typical Performance Data

| 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



For detailed performance specs & shopping online see web site

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