



Bi-Phase PIN Diode Modulators With Drivers

2696 Series

Features

- Broadband Performance
- TTL Compatibility
- Small Lightweight Package
- Environmentally Sealed
- Solder Construction
- Low Insertion Loss
- Temperature Range: -40° to +95°C

Description

M/A-COM's miniature 0-180° phase shifter is a vectorial phase shifting network utilizing PIN diodes together with broadband quadrature hybrid coupler circuits. It is driven by a hybrid-IC, TTL-compatible driver for convenient system applications. It features balanced insertion loss in both states, as well as broadband phase response. Applications include antenna beam steering and phase modulation.

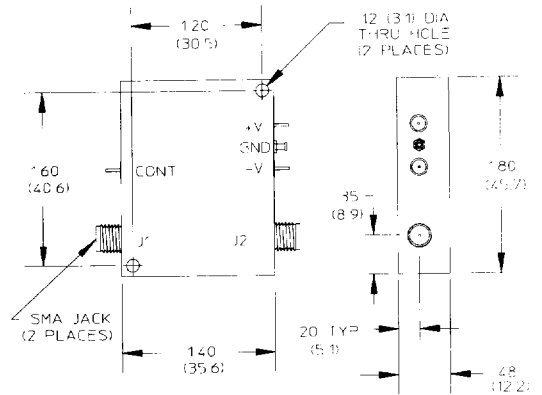
Environmental

These devices are designed to meet the following conditions:

| Test | MIL-STD | Method | Cond |
|---------------------|---------|--------|------|
| Temperature Cycle | 883 | 1010 | C |
| Const. Acceleration | 883 | 2001 | A |
| Vibration | 202 | 214 | |
| Solvent Resistance | 883 | 2015 | |
| Salt Spray | 202 | 101 | A |
| Moisture Resistance | 202 | 106 | |

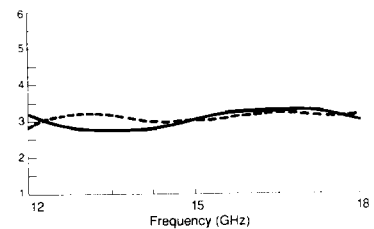
Maximum Ratings

| | |
|-----------------|-----------------|
| Storage Temp. | -65°C to +125°C |
| Operating Temp. | -55°C to +95°C |

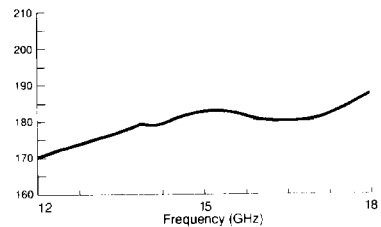


Typical Performance Data 2696-0109

Insertion Loss (dB)



Relative Phase Shift (degrees)



Specifications Subject to Change Without Notice.

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2696-Series

Specifications 25 °C

| Frequency Range (GHz) | VSWR | Insertion Loss (dB) | Phase Delta (Degrees) | Transition Time (nS) | Switching Time (nS) | Operating Power (W) | Part Number ⁵ |
|-----------------------|--------|---------------------|-----------------------|----------------------|---------------------|---------------------|--------------------------|
| 2.0-4.0 | 1.60:1 | 1.8 | 180 ± 8 | 20 | 50 | 0.100 | 2696-0101-XY |
| | 1.60:1 | 1.8 | 180 ± 8 | 300 | 500 | 0.500 | 2696-0102-XY |
| 4.0-8.0 | 1.80:1 | 2.2 | 180 ± 10 | 20 | 50 | 0.100 | 2696-0103-XY |
| | 1.80:1 | 2.2 | 180 ± 10 | 300 | 500 | 0.500 | 2696-0104-XY |
| 8.0-12.0 | 1.80:1 | 2.8 | 180 ± 10 | 20 | 50 | 0.100 | 2696-0105-XY |
| | 1.80:1 | 2.8 | 180 ± 10 | 300 | 500 | 0.500 | 2696-0106-XY |
| 8.0-16.0 | 2.00:1 | 3.3 | 180 ± 15 | 20 | 50 | 0.100 | 2696-0107-XY |
| | 2.00:1 | 3.3 | 180 ± 15 | 300 | 500 | 0.500 | 2696-0108-XY |
| 12.0-18.0 | 2.00:1 | 3.8 | 180 ± 15 | 20 | 50 | 0.100 | 2696-0109-XY |
| | 2.00:1 | 3.8 | 180 ± 15 | 300 | 500 | 0.500 | 2696-0110-XY |

Notes:

- All units include TTL drivers.
- Driver current required: ±75 mA (typical).
- Transition Time measured from 10% to 90% of detected RF.
- Switching Time measured from 50% TTL to 10% or 90% of detected RF.
- Specify voltage and logic connector from option table.

- XY Option Table

| | X Bias Voltage | Y Logic Conn. |
|---|-------------------|------------------|
| 0 | +5V/-12V | 0 Solder Pin |
| 1 | +5V/-5V | 1 SMC Conn. |
| 2 | +15V/-15V | 2 SMA Conn. |
| 3 | +12V/-12V | |
| 4 | +5 V/-15V | |

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