

# Bi-Phase Modulators With Driver

## 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.

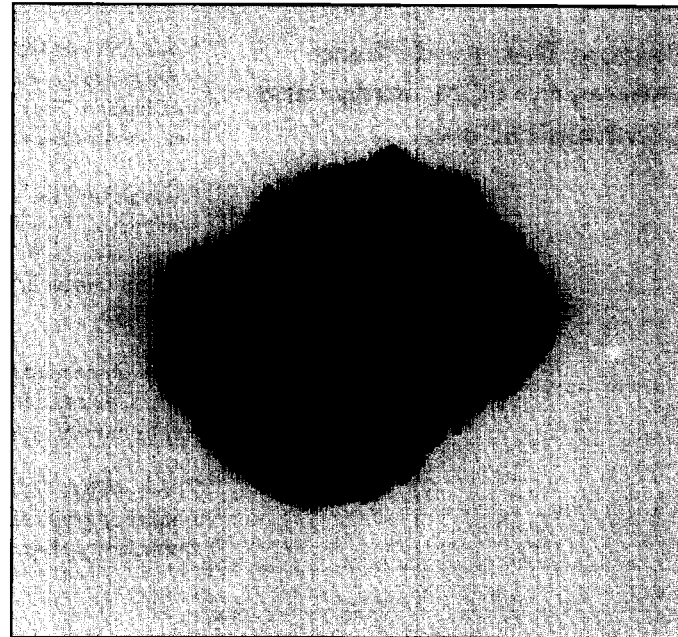
### Environmental

These devices are designed to meet the following conditions:

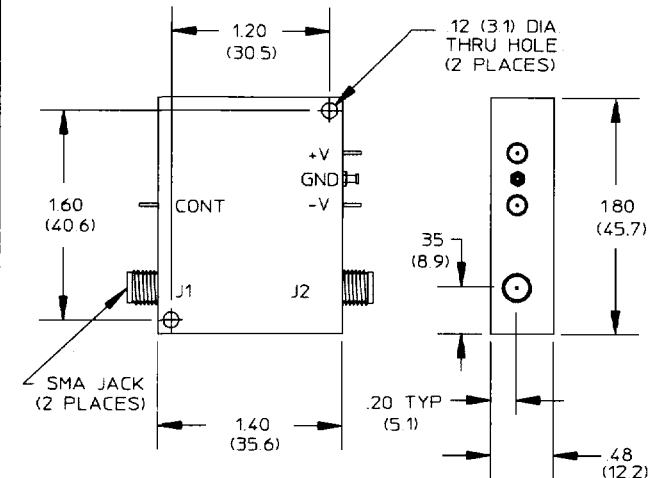
Test	MIL-STD	Method	Cond
Temperature Cycle	883	1010	C
Const. Acceleration	883	2001	A
Vibration	202	214	
Solvent Resistance	883	2015	
Salt Spray	202	101	A
Moisture Resistance	202	106	

### Maximum Ratings

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

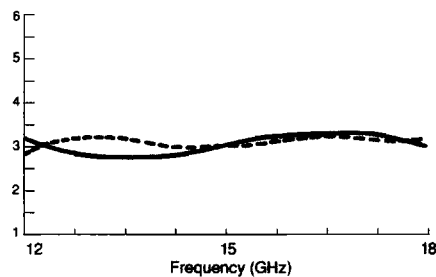


### Mechanical Outline

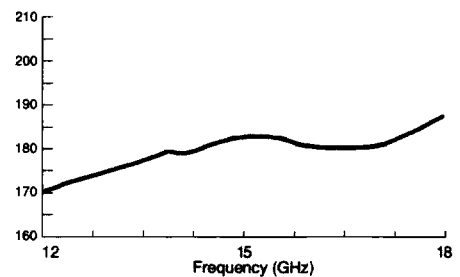


### Typical Performance Data 2696-0109

Insertion Loss (dB)



Relative Phase Shift (degrees)



## 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 <sup>5</sup>
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	1.9	180 ± 10	20	50	0.100	2696-0103-XY
	1.80:1	1.9	180 ± 10	300	500	0.500	2696-0104-XY
8.0-12.0	1.80:1	2.7	180 ± 10	20	50	0.100	2696-0105-XY
	1.80:1	2.7	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	3.5	180 ± 12	20	50	0.100	2696-0109-XY
	2.00:1	3.5	180 ± 12	300	500	0.500	2696-0110-XY

**Notes:**

1. All units include TTL drivers.
2. Driver current required: ±75 mA (typical).
3. Transition Time measured from 10% to 90% of detected RF.
4. Switching Time measured from 50% TTL to 10% or 90% of detected RF.
5. 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 +5V/-15V	