

0/180 Degrees Bi-Phase Modulator from 26.5 GHz to 40 GHz with TTL Control, 100nsec Speed and 2.92mm

The FM86GM2008 is a 0° to 180° Bi-Phase Modulator that operates across a broadband frequency range from 26.5 GHz to 40 GHz. This modulator takes a TTL level digital bit stream and encodes it onto the RF carrier using 2 phase shift keying (2PSK). 2 Phase Shift Keying utilizes 2 phases which are separated by 180°. Impressive typical performance includes low insertion loss of 5.5 dB, 50 nsec switching speed, broadband phase shift +/- 30°, and amplitude balance of +/- 2 dB. The design is bidirectional with input and output RF ports, and employs dual bias voltages (+5/-5 Vdc) and integrated TTL processing to phase modulate the control data onto the RF, and operates across a wide temperature range of -55°C to +85°C. The rugged and compact package uses TTL, Bias, Ground pins, and field replaceable 2.92mm Female connectors. The high reliability design meets MIL-STD-202 environmental test conditions for Humidity, Shock, Vibration, Altitude, and Temperature Cycle.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	26.5		40	GHz
Impedance		50		Ohms
VSWR		2:01	3:01	
Phase Shift		30		Degrees
Insertion Loss		5.5		dB
Amplitude Balance		2		dB
Switching Speed (Risetime)			100	ns
Phase State (Off)		0		degrees
Phase State (On)		180		degrees
Bias Voltage (+)		5		Volts
Bias Voltage (-)		-5		Volts
Bias Current @ +5 Vdc		40	70	mA
Bias Current @ -5 Vdc		7	30	mA

Mechanical Specifications

Size		
Length	1 in	[25.4mm]
Width	1 in	[25.4 mm]
Height	0.5 in	[12.7 mm]
Weight	0.125 lbs	[56.7 g]

Configuration

Design	Bi-Phase Modulator
Connector Option	Field Replaceable
RF Connector	2.92mm Female

Environmental Specifications

Temperature

Operating Range	-55deg C 85deg C
Storage Range	-65deg C 125deg C



Features:

- 0° to 180° Bi-Phase Modulator module
- 2 Phase Shift Keying (2PSK) Modulation
- Frequency Range: 26.5 GHz to 40 GHz
- Insertion Loss: 5.5 dB typ
- Switching Speed 50 nsec typ
- Broadband Phase Shift +/- 30°
- Amplitude Balance +/- 2 dB
- Compact Package Design
- Field Replaceable 2.92mm Connectors
- Dual Bias Voltage: +5/-5 Vdc
- Integrated TTL Driver
- -55°C to +85°C Operating Temperature
- Designed to meet MIL-STD-202 Test Conditions
- Bi-directional Operation

Applications:

- Communication Systems
- Microwave Radio
- Radar
- High Data Rate Test & Measurement
- Serial Data Transmission
- Basestation Infrastructure

Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Other

Humidity	90 % Non-Condensing
Shock	MIL-STD-202, Method 213B Cond. B
Vibration	MIL-STD-202, Method 204D Cond. B
Altitude	MIL-STD-202, Method 105C Cond. B
Temperature Cycle	MIL-STD-202, Method 107D Cond. A

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

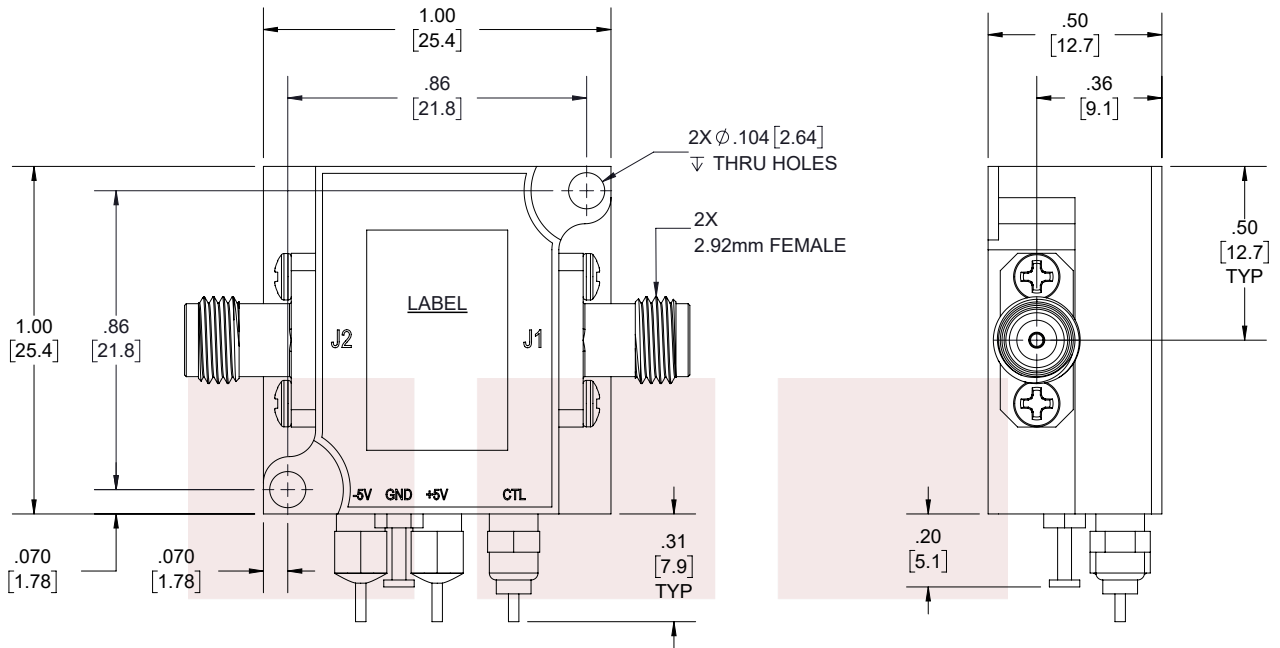
Notes:

0/180 Degrees Bi-Phase Modulator from 26.5 GHz to 40 GHz with TTL Control, 100nsec Speed and 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [0/180 Degrees Bi-Phase Modulator from 26.5 GHz to 40 GHz with TTL Control, 100nsec Speed and 2.92mm FM86GM2008](#)

URL: <https://www.fairviewmicrowave.com/undefined-url-for-pn-fm86gm2008-fm86gm2008-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



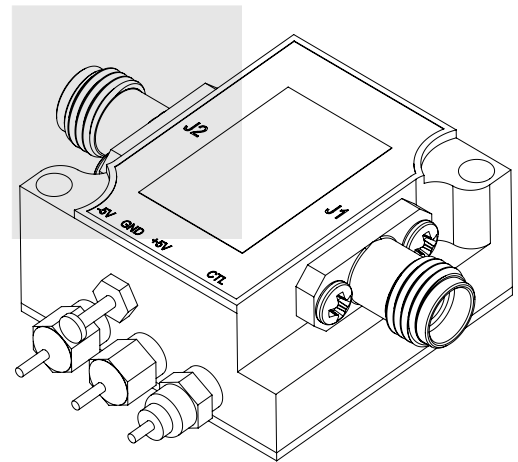
LABEL

Fairview Microwave
an INFINIT[®] brand
BI-PHASE MODULATOR
MODEL NO:
FM86GM2008
SERIAL NO:
PLXXXX/XXXX

STANDARD TOLERANCES

.X ±0.2
.XX ±0.01
.XXX ±0.005

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES



<p>Fairview Microwave an INFINIT[®] brand</p>		<p>NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].</p>				
<p>TITLE 0/180 Degrees Bi-Phase Modulator from 26.5 GHz to 40 GHz with TTL Control, 100nsec Speed and 2.92mm</p>		<p>DWG NO FM86GM2008</p>		<p>CAGE CODE 3FKR5</p>		
CAD FILE	05/09/18	SHEET	1 OF 1	SCALE	N/A	SIZE A 7361