

QPSK MODULATOR

MODEL QP

Model No.	Carrier Frequency GHz	Modulation Frequency GHz	Insertion Loss, dB Typ Max	Phase Accuracy vs Frequency ± Deg., Max.	Amplitude Variation vs Phase Change ± dB, Max.	RF VSWR Typ Max	Carrier Suppression dB Min.
QP-24	2-4	0-0.5	6 8	5	1.0	1.5 2.2	30
QP-48	4-8	0-1.0	7 9	5	1.0	1.8 2.5	30
QP-86	8-16	0-4.0	9 11	10	2.0	2.0 2.5	25

NOTES:

1. Other frequencies are available.
2. Insertion loss data is for $P_{rf} < 0$ dBm. Units with higher power of operation are available. Contact factory.
3. All parameters can be improved over narrow bands.
4. Units are available without driver, with ECL driver, or with TTL driver.
5. Specifications subject to change without notice.

MAXIMUM RATINGS

Storage

Temperature: -65°C to +95°C

Operating

Temperature: -54°C to +85°C

RF Input Power: 200 mW @ 25°C
100 mW @ 85°C

Environment: MIL-E-5400, MIL-STD-202,
MIL-E-16400, MIL-STD-883
(Special request only).

NOTES:

1. For units without a driver, logic state 1 corresponds to +10 mA, logic state 0 corresponds to -10 mA.
2. Insertion loss will improve by approximately 0.5 dB @ -54°C and degrade by 1.0 dB maximum @ +85°C.
3. Units with RF operating power greater than 0 dBm are available.

POWER REQUIREMENTS

Unit without a driver:

±10 mA or +10 dBm

Unit with ECL driver:

-5.2V ± 5% @ 30 mA
+5V @ 50 mA

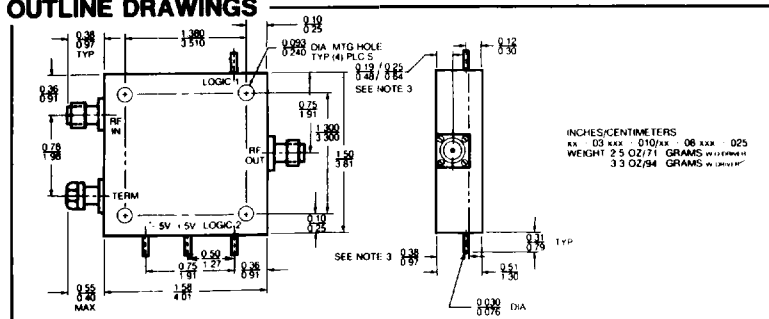
Unit with TTL driver:

+5V @ 60 mA,
-5V @ 30 mA

FEATURES:

- Low Insertion Loss
- Excellent Phase Accuracy
- Octave RF Bandwidth
- Low Amplitude Modulation
- Wide Modulation Bandwidth

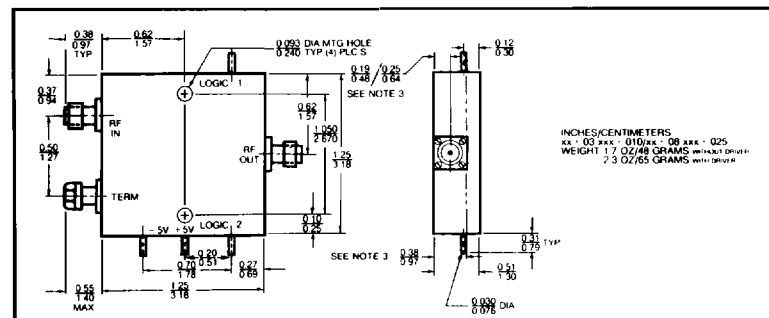
OUTLINE DRAWINGS



NOTES:

- 1) Different types of connectors are available.
- 2) Hermetically sealed units are available.
- 3) Thickness will be 0.51 with driver and 0.38 without driver. When driver is not supplied +5V and -5V terminals are omitted and Logic 1 and Logic 2 inputs are supplied as SMA connectors.

MODEL QP-48



MODEL QP-86

ORDERING INFORMATION

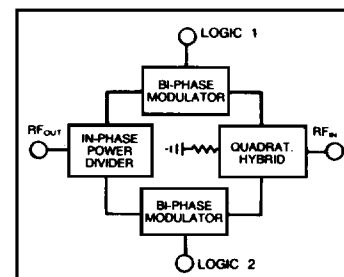
When ordering specify the control type:

QP-12—no driver

QP-12E—ECL driver

QP-12T—TTL driver

SCHEMATIC DIAGRAM



PHASE STATE Deg.	LOGIC STATE	
	1	2
0	1	1
90	0	1
180	0	0
270	1	0

TYPICAL MODEL NO.

QP — (xx) X (L)
Model Freq. Code Driver (None, E or T) IF < 1 MHz (option)

**KDI/triangle
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