

## DESCRIPTION

PMI MODEL: PIQ-18G40G-360D-10dB-OPT24G IS A 24 GHz +/-125 MHz HIGH PERFORMANCE IQ VECTOR MODULATOR WITH 2 X 12 BIT TTL COMPATIBLE CHANNELS (I AND Q). THIS MODEL OFFERS A FULL 360 DEGREES OF PHASE SHIFT WITH A MINIMUM OF 10 dB AMPLITUDE CONTROL AT AN INPUT POWER -10 dBm.

## SPECIFICATIONS

- FREQUENCY RANGE: 24 GHz +/- 125 MHz
- DYNAMIC RANGE: 10 dB & 360°
- RF INPUT POWER: OPTIMIZED FOR -10dBm & 25°C
- INSERTION LOSS: 16.0 dB MAX
- VSWR: 3.5:1 MAX (50 OHM SYSTEM)
- ATTENUATION VS FREQUENCY: ±3.5 dB TYP @ -10 dBm
- PHASE VS FREQUENCY: ±20.0° TYP @ -10 dBm
- CONTROL LOGIC: 2X12 BITS (I&Q), TTL COMPATIBLE
- CONTROL SLOPES: LINEAR
- SWITCHING SPEED: 500 ns MAX
- POWER SUPPLY: ± 12V TO ±15V @ ±100mA MAX
- RF CONNECTORS: SMA FEMALE INPUT AND OUTPUT
- POWER/LOGIC CONNECTIONS: 37 PIN D-SUB CONNECTOR PLUG
- SIZE: 3.5" X 2.50" X 0.75"
- FINISH: GOLD PLATED

## ENVIRONMENTAL RATINGS

- TEMPERATURE: ----- -10 °C TO +60 °C (OPERATING)  
-65 °C TO +125 °C (STORAGE)
- HUMIDITY: ----- MIL-STD-202F, METHOD 103B COND. B
- SHOCK: ----- MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: ----- MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: ----- MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: ----- MIL-STD-202F, METHOD 107D COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

**PMI CONFIDENTIAL AND PROPRIETARY**

| REVISIONS |      |             |          |          |
|-----------|------|-------------|----------|----------|
| ZONE      | REV. | DESCRIPTION | DATE     | APPROVED |
|           | 1    | PRELIMINARY | 10/21/15 | PK       |
|           |      |             |          |          |
|           |      |             |          |          |

## 37-PIN CONNECTOR PIN-OUT

| PIN | FUNCTION     | PIN | FUNCTION   |
|-----|--------------|-----|------------|
| 1   | I-5          | 20  | I-4        |
| 2   | I-6          | 21  | I-7        |
| 3   | I-8          | 22  | I-3        |
| 4   | I-9          | 23  | I-2        |
| 5   | I-10         | 24  | I-1        |
| 6   | I-11         | 25  | I-12 (LSB) |
| 7   | NC           | 26  | NC         |
| 8   | +12V TO +15V | 27  | NC         |
| 9   | GND          | 28  | GND        |
| 10  | GND          | 29  | NC         |
| 11  | -12V TO -15V | 30  | NC         |
| 12  | Q-3          | 31  | NC         |
| 13  | Q-2          | 32  | Q-4        |
| 14  | Q-1 (LSB)    | 33  | NC         |
| 15  | Q-5          | 34  | NC         |
| 16  | Q-6          | 35  | Q-12       |
| 17  | Q-7          | 36  | Q-11       |
| 18  | Q-8          | 37  | Q-10       |
| 19  | Q-9          |     |            |

## PLANAR MONOLITHICS INDUSTRIES, INC.

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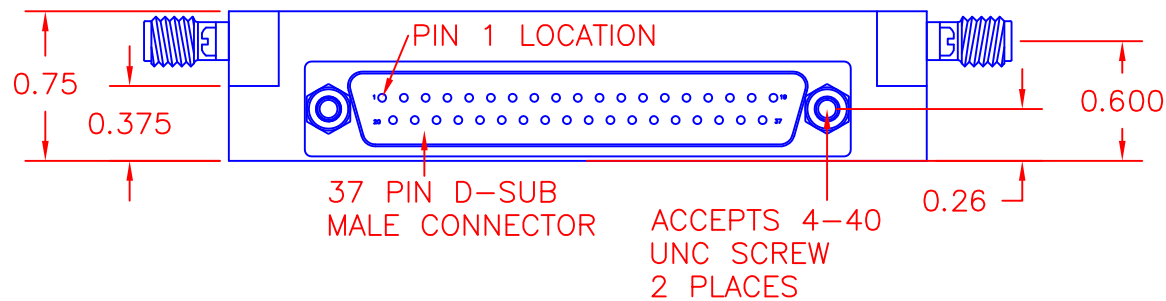
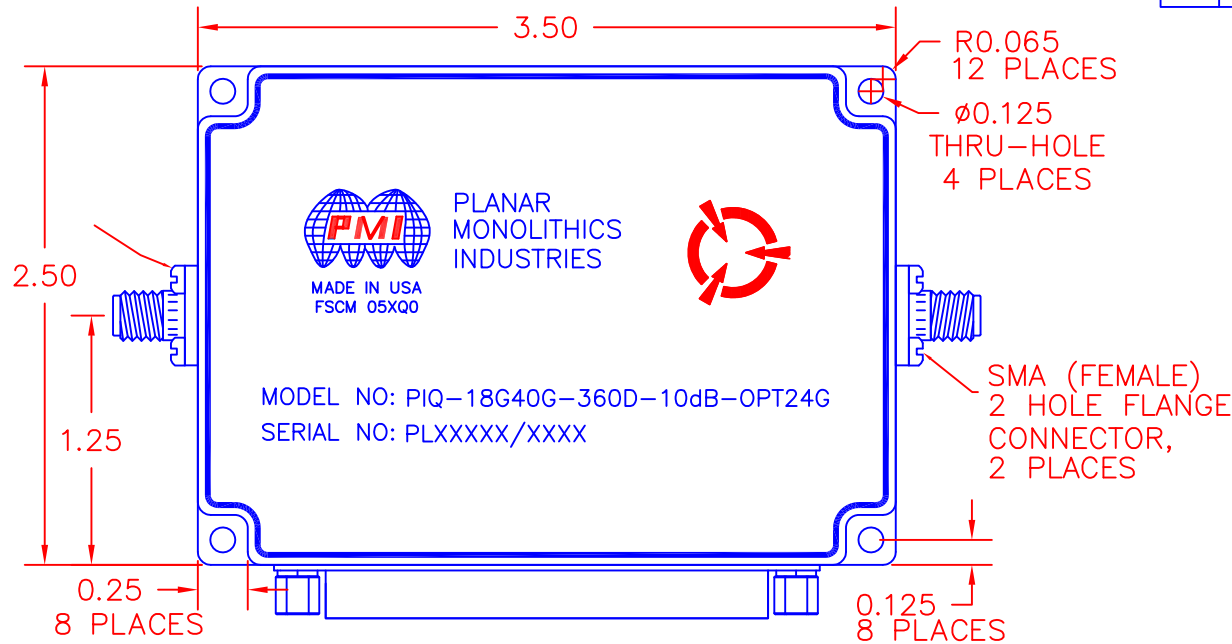
ISO 9001 CERTIFIED



|                     |                 |                                                             |                   |                     |                 |               |
|---------------------|-----------------|-------------------------------------------------------------|-------------------|---------------------|-----------------|---------------|
|                     |                 | TITLE<br><br>PRODUCT FEATURE<br>PIQ-18G40G-360D-10dB-OPT24G |                   |                     |                 | REV.<br><br>1 |
| APPROVALS           | DATE            |                                                             |                   |                     |                 |               |
| DRAWN<br><i>PJK</i> | <i>10/21/15</i> |                                                             |                   |                     |                 |               |
| CHECKED             |                 | SIZE<br>A                                                   | FSCM NO.<br>05XQ0 | DWG NO.<br>270XXXXX |                 |               |
| ISSUED              |                 | SCALE<br>N:S                                                |                   |                     | SHEET<br>1 OF 2 |               |

# MECHANICAL OUTLINE

| REVISIONS |      |             |          |          |
|-----------|------|-------------|----------|----------|
| ZONE      | REV. | DESCRIPTION | DATE     | APPROVED |
|           | 1    | PRELIMINARY | 10/21/15 | PX       |
|           |      |             |          |          |
|           |      |             |          |          |



ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
X.XX ±0.020  
X.XXX ±0.010

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| APPROVALS |  | DATE     |  | TITLE                                          |          |
|-----------|--|----------|--|------------------------------------------------|----------|
| DRAWN     |  | 10/21/15 |  | PRODUCT FEATURE<br>PIQ-18G40G-360D-10dB-OPT24G |          |
| CHECKED   |  |          |  | SIZE                                           | REV.     |
| ISSUED    |  |          |  | A                                              | 1        |
|           |  |          |  | FSCM NO.                                       | DWG NO.  |
|           |  |          |  | 05XQ0                                          | 270XXXXX |
|           |  |          |  | SCALE                                          | SHEET    |
|           |  |          |  | N:S                                            | 2 OF 2   |