

FAR Series

6.5-12.25GHz Input Frequency Doubler

Features

- Input Frequency: 6.5-12.25GHz
- Output Frequency: 13-24.5GHz
- Conversion Gain: 12dB
- F_0 Isolation: 20dB
- Input Drive Level: +3dBm
- DC Power: 12V/95mA
- SMA Input RF Connector
- K-2.92mm Output RF Connector

Picture



Performance @ $F_{in}=9.5\text{GHz}$, $P_{in}=+3\text{dBm}$

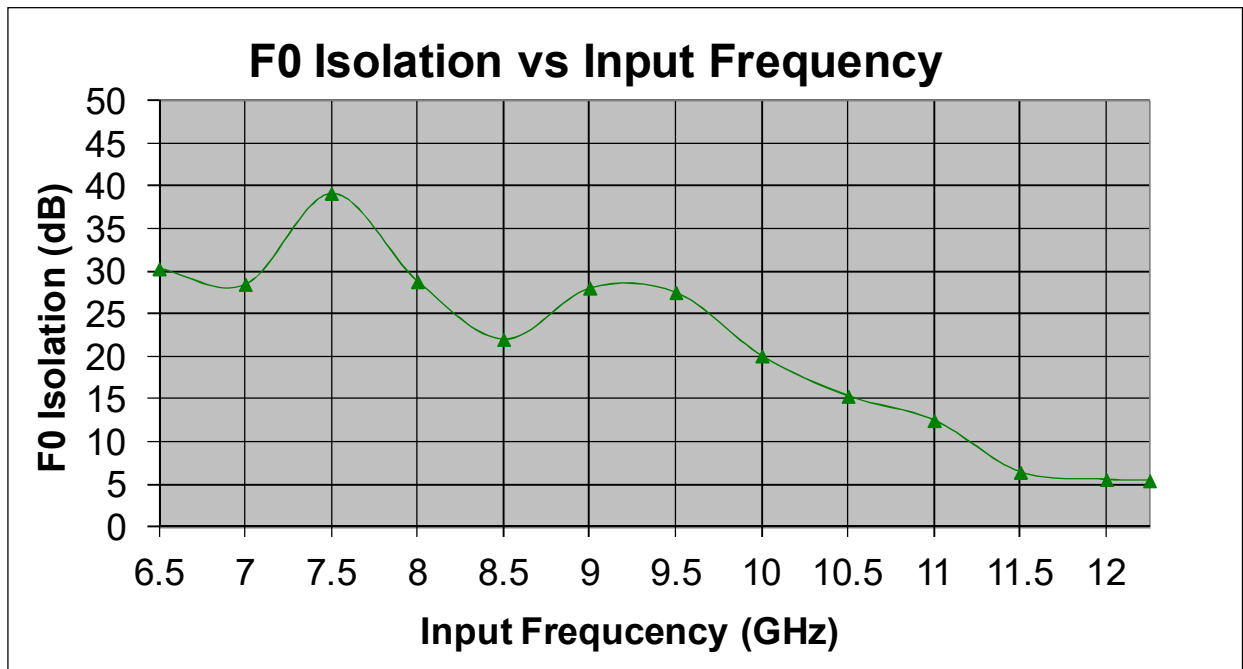
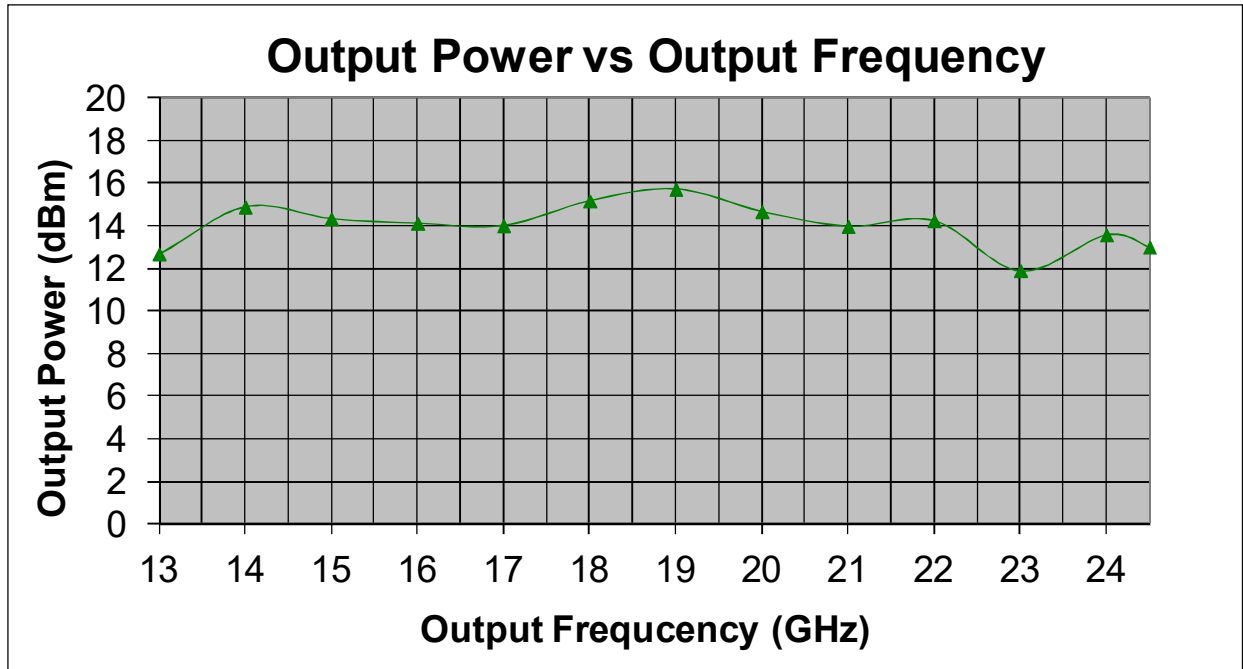
Description

FAR-814 is an active frequency doubler operates with input frequency range from 6.5 to 12.25GHz and output frequency range from 13 to 24.5GHz.

Electrical Specifications @ +25 °C, $Z_{in} = Z_{out} = 50 \Omega$, DC Voltage = +12V

| Parameter | Unit | Min. | Typ. | Max. |
|---|--------|------|-------|-------|
| Input Frequency Range | GHz | 6.5 | | 12.25 |
| Output Frequency Range | GHz | 13 | | 24.5 |
| Conversion Gain $P_{in}=+3\text{dBm}$ | dB | 8 | 12 | |
| Input Power Drive Range | dBm | 0 | +3 | +6 |
| Output Power $F_{in}=9.5\text{GHz}/F_{out}=19\text{GHz}$ | dBm | +10 | +14 | |
| F_0 Isolation * $F_{in}=9.5\text{GHz}/F_{out}=9.5\text{GHz}$ | dB | 20 | 25 | |
| 3 F_0 Isolation * $F_{in}=9.5\text{GHz}/F_{out}=28.5\text{GHz}$ | dB | 20 | 25 | |
| SSB Phase Noise @ 100KHz Offset | dBc/Hz | | -136 | |
| Input VSWR S11 $F_{in}=9.5\text{GHz}$ | | | 2.0:1 | 2.5:1 |
| Output VSWR S22 $F_{out}=19\text{GHz}$ | | | 1.6:1 | 2.0:1 |
| DC Power Input | V | 9 | 12 | 15 |
| Operating Current | mA | | 95 | 110 |

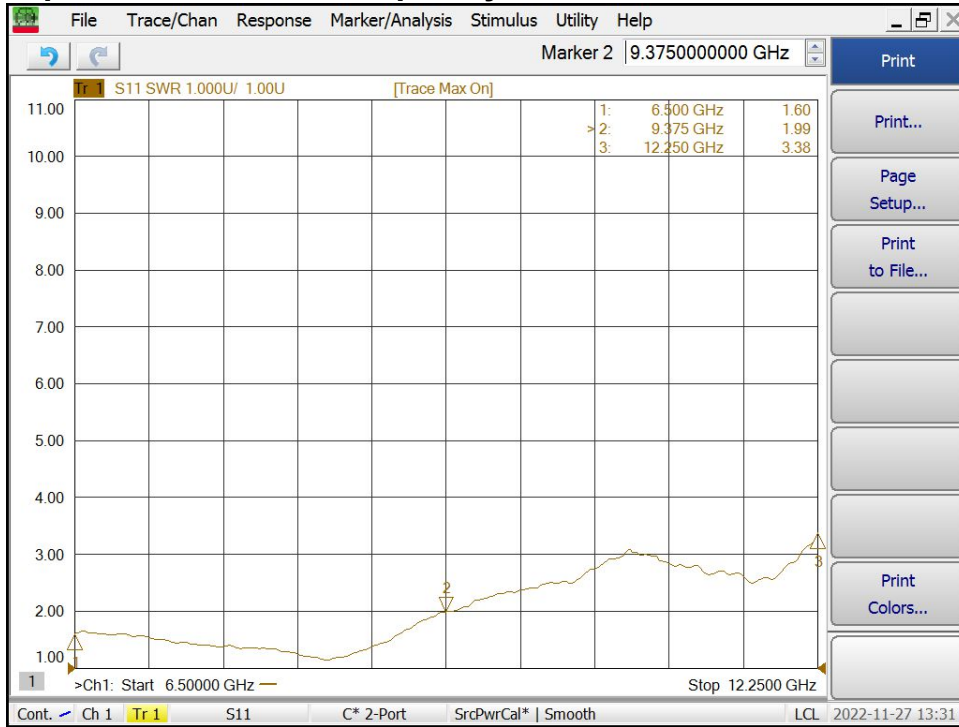
* Isolation with respect to desired frequency output power level at 19GHz



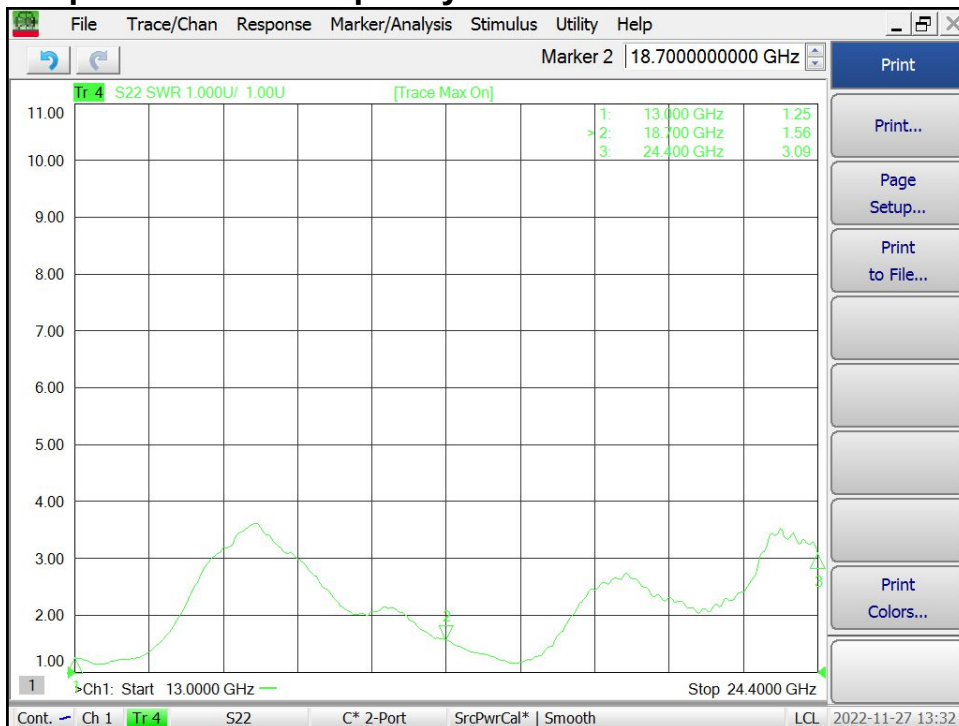
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Input VSWR S11 vs Frequency



Output VSWR vs Frequency



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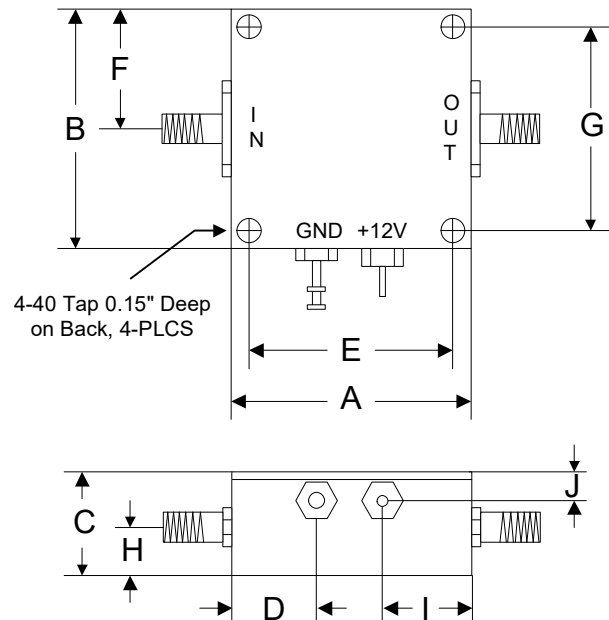
Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|-------------------|
| RF Input Power | +13dBm |
| DC Supply Voltage | +25V |
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -55 °C to +125 °C |

ESD Sensitive Material



Outline



| | A | B | C | D | E | F | G | H | I | J |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Inch | 1.250 | 1.250 | 0.563 | 0.450 | 1.000 | 0.625 | 1.000 | 0.250 | 0.500 | 0.187 |
| mm | 31.75 | 31.75 | 14.29 | 11.43 | 25.40 | 15.88 | 25.40 | 6.35 | 12.70 | 4.76 |