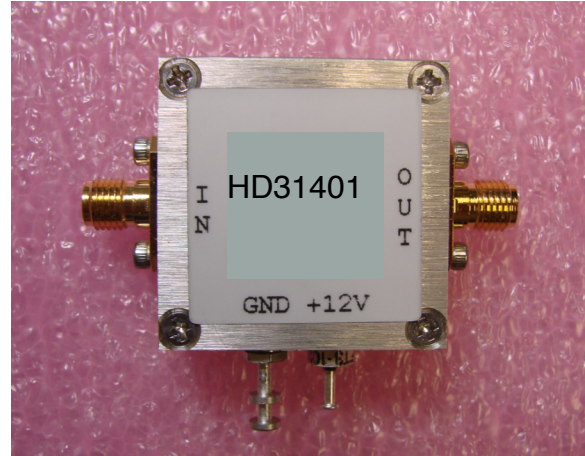


## 0.1 – 50MHz Divide-By-N Prescaler

### Features

- Input Frequency: Up to 50MHz
- Output Frequency:  $F_{in}/N$
- Divide Ratio: N (2 to 256 preset)
- Input/Output: Analog/CMOS
- Phase Noise: -144dBc/Hz
- DC Power: 12V
- SMA Connector

### Picture



### Description

HD31401 is a 50MHz frequency divider with divide ratio of 2 to 256 (N must be specified when ordering). The AC coupled analog input and logic output will fit many PLL applications.

### Electrical Specifications @ +25 °C, Vsupply=+12V

| Parameter                       | Unit   | Minimum                                       | Typical    | Maximum |
|---------------------------------|--------|---|------------|---------|
| Input Frequency Range $F_{in}$  | MHz    | 0.1   |            | 50      |
| Output Frequency Range          | MHz    |   | $F_{in}/N$ |         |
| Fixed Divide Ratio              |        | N<br>(Must be between 2 and 256, Factory set) |            |         |
| Input Power Range               |        |   |            |         |
| f = 100KHz – 200KHz             | dBm    | +10   |            | +17     |
| f = 200KHz – 1MHz               | dBm    | +3  |            | +17     |
| f = 1MHz – 5MHz                 | dBm    | -10   |            | +17     |
| f = 5MHz – 50MHz                | dBm    | -20   |            | +17     |
| HIGH Level Output Voltage       | V      | 4.9   |            |         |
| LOW Level Output Voltage        | V      |   |            | 0.1     |
| Output Voltage Swing (8pF Load) | Vp-p   | 4.8   | 5.0        |         |
| SSB Phase Noise (100KHz Offset) | dBc/Hz |   | -144       |         |
| DC Power Supply                 | V      | 7   | 12         | 24      |
| Supply Current                  | mA     |   | 70         |         |

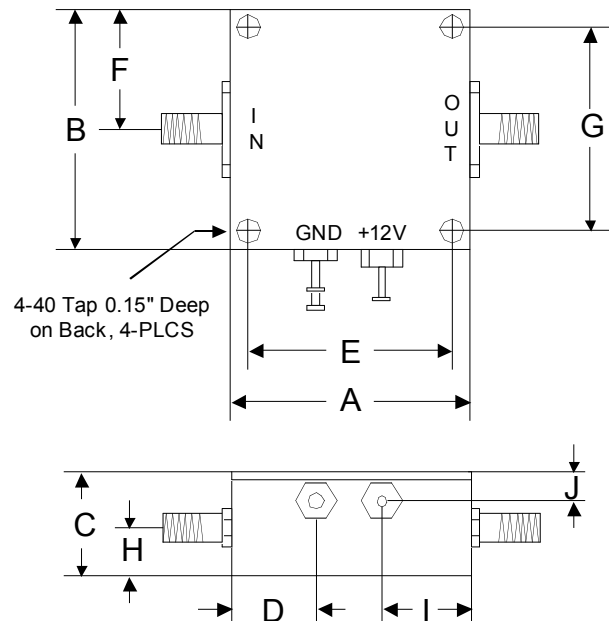
## 0.1 – 50MHz Divide-By-N Prescaler

**Order Example: FCS-2 (N=2, Divide by 2)**

### Absolute Maximum Ratings

| Parameter             | Absolute Maximum  |
|-----------------------|-------------------|
| RF Input Power        | +20dBm            |
| Supply Voltage        | +25V              |
| Operating Temperature | -40 °C to +85 °C  |
| Storage Temperature   | -55 °C to +100 °C |

### Outline



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