

Helping Customers Innovate, Improve & Grow



OX-060

Features

*Very High Stability
Low Aging
SC-Cut Crystal Standard*

Typical Applications

*Base Stations
Test Equipment
Synthesizers
Digital Switching*

Previous Vectron Model Numbers

C4650, 4884

Frequency Range

4 MHz – 15 MHz

Standard Frequencies

5, 10 MHz

Frequency stabilities¹ [SC Cut Crystal]

| Parameter | Min | Typ | Max | Units | Operating temp range |
|--|------|-----|------|---------|--|
| vs. operating temperature range (Referenced to +25°C) | -5 | | +5 | ppb | 0 ... +70°C |
| | -7 | | +7 | ppb | -20 ... +70°C |
| | -10 | | +10 | ppb | -40 ... +70°C |
| Parameter | Min | Typ | Max | Units | Condition |
| Initial tolerance | -250 | | +250 | ppb | at time of shipment, nominal EFC |
| vs. supply voltage change | -1.0 | | +1.0 | ppb | $V_s \pm 5\%$ |
| vs. load change | -1.0 | | +1.0 | ppb | Load $\pm 5\%$ |
| vs. aging / day | -0.5 | | +0.5 | ppb | after 72 hours of operation |
| vs. aging / 1 year | -50 | | +50 | ppb | after 72 hours of operation |
| vs. aging / year (following years) | -30 | | +30 | ppb | |
| Warm-up Time | | | 10 | minutes | to ± 10 ppb of final frequency (1 hour reading) @ +25°C |

Supply Voltage (Vs)

| Parameter | Min | Typ | Max | Units | Condition |
|---------------------------|-------|------|-------|-------|----------------------|
| Supply voltage [Standard] | 11.4 | 12.0 | 12.6 | VDC | |
| Supply voltage [Option] | 14.25 | 15.0 | 15.75 | VDC | |
| Power consumption | | | 6.0 | Watts | during warm-up |
| | | | 1.5 | Watts | steady state @ +25°C |

RF Output

| Parameter | Min | Typ | Max | Units | Condition |
|--------------------|----------|------|------|-------|----------------|
| Signal [Standard] | HCMOS | | | | |
| Load | | 15 | | pF | |
| Signal Level (Vol) | | | 0.5 | VDC | with 15pF load |
| Signal Level (Voh) | 4.5 | | | VDC | with 15pF load |
| Duty cycle | 40 | | 60 | % | @ (Voh-Vol)/2 |
| Signal [Option] | Sinewave | | | | |
| Load | | 50 | | Ohm | |
| Output Power | +5.0 | +7.0 | +9.0 | dBm | 50 Ohm load |
| Harmonics | | | -30 | dBC | 50 Ohm load |

Frequency Tuning (EFC)

| Parameter | Min | Typ | Max | Units | Condition |
|-----------------------|----------|------|------|-------|-----------|
| Tuning Range | ±0.3 | ±0.6 | ±1.0 | ppm | |
| Linearity | | | 20 | % | |
| Tuning Slope | Positive | | | | |
| Control Voltage Range | 0.0 | 2.5 | 5.0 | VDC | |

Additional Parameters

| Parameter | Min | Typ | Max | Units | Condition |
|--------------------------|----------------------------|--------|------|-------|-----------|
| Reference Voltage | 4.7 | 4.9 | 5.1 | VDC | |
| Phase Noise ³ | -95 | dBc/Hz | 1 | Hz | at 10 MHz |
| | -125 | dBc/Hz | 10 | Hz | |
| | -145 | dBc/Hz | 100 | Hz | |
| | -150 | dBc/Hz | 1 | kHz | |
| | -155 | dBc/Hz | 10 | kHz | |
| Weight | | | 53.0 | g | |
| Processing & Packing | Handling & processing note | | | | |

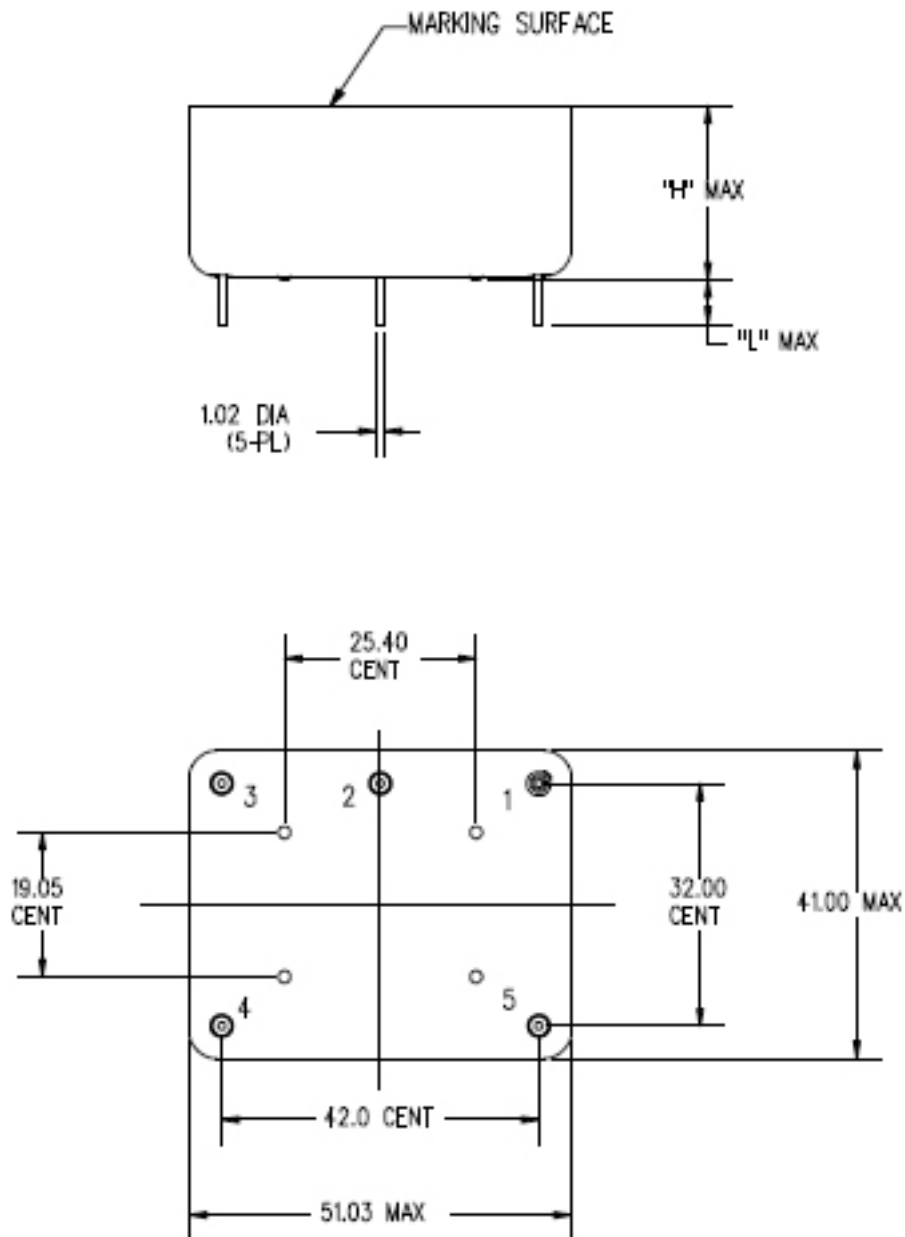
Absolute Maximum Ratings

| Parameter | Min | Typ | Max | Units | Condition |
|----------------------------|-----|-----|----------|-----------|---|
| Supply voltage (Vs) | | | 28.0 | V | |
| Output Load | | | 50 25 | pF Ohm | with HCMOS signal with Sinewave signal |
| Operable temperature range | -55 | | +85 | °C | |
| Storage temperature range | -55 | | +125 | °C | |

Enclosure

Type A

Height "H" = 25.40 mm, Pin Length "L" = 6.40 mm



Dimensions: mm

Pin Connections

| | | | |
|---|---|---|---------------------------|
| 1 | Ground (Case) | 4 | Supply Voltage Input (Vs) |
| 2 | Electronic Frequency Control Input(EFC) | 5 | RF Output |
| 3 | Reference Voltage Output | | |

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How to order this product:

| Use this worksheet to forward the following information to your factory representative : | | | | | | | | | | |
|--|--------|---|---------------------|----------------|-------------------|---|-----------|---------------------------|---|-----------|
| Model | Height | - | Supply Voltage Code | RF Output Code | Temperature Range | - | Stability | Frequency Control/ Enable | - | Frequency |
| OX-060 | 0 | - | B | A | J | - | 509 | 0 | - | 10M000000 |

Height:
0: 25.4 mm

Supply Voltage Code:
A: 15 V
B: 12 V

Temperature Range:
D: -40 ... +70°C
J: -20 ...+70°C
T: 0 ...+70°C

Frequency Control:
0: ±0.3...±1.0 ppm

RF Output Code:
A: HCMOS
E: Sinewave

Stability Code:
509: ±5ppb
709: ±7ppb
108: ±10ppb

Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
- 2 Unless otherwise stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C)
- 3 Phase noise degrades with increasing output frequency.
- 4 Subject to technical modification.
- 5 Contact factory for availability.