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SPACE QUALIFIED

OVEN CONTROLLED CRYSTAL OSCILLATOR

Description

The FE-4220C Series of Space Qualified Low Noise Quartz Oscillators features operation from 10Mhz to 145Mhz with Low Phase Noise and excellent stability. A unique Class "K" Hybrid Assembly (MIL-PRF-38534) in conjunction with a 5th overtone SC-Cut Crystal achieves Low Aging, Temperature Stability and excellent Radiation Immunity (100Krads) needed in the Space Environment. An External DC Voltage Input or Resistor is provided for Fine Frequency Adjustment.

Features

- Low Phase Noise
- Excellent Temperature Stability < ±2 x 10^{-7}
- -10^{o}C to +60^{0}C Operating
- Low Aging ±1 ppm for life
- Space Qualified
- Radiation Immunity 100 Krads
- Highly Reliable: Over 20 years of space service with zero failures
- Small Size and Light Weight

Typical Applications

- Clocks for Spacecraft

Model FE-4220C

Specifications on reverse side

ELECTRICAL CHARACTERISTICS
FE-4220C SERIES

Output

Frequency:
Range 10MHz to 145 MHz

RF Output:
Level 1.5±1 dBm into 50? load
Waveform Sine
Harmonics -20dBc max
Spurious -120dBc

Frequency Stability:
Temperature ±2 x 10^{-7} (-10°C to +60°C)
Supply Voltage
15V±1% ± 1 x 10^{-7}

Aging:
Per 10 Year ± 1 ppm 10 MHz to 35 MHz
± 5 ppm 35 MHz to 100 MHz
± 7 ppm 100 MHz to 150 MHz

Phase Noise:
10Hz -83dBc/Hz
100Hz -115dBc/Hz
1KHz -140dBc/Hz
10KHz -150dBc/Hz

Retrace:
Retrace ±1 x 10^{-7} in 20 min. after 24 hours power off

G-Sensitivity:
G-Sensitivity 2 x 10^{-9} per G, any axis

Electrical

Power:
Supply Voltage +15v DC ±2%
Warm-up 3.5W max.
Steady State 2W @ 0ºC,
1.2W@25ºC,
0.4W@60ºC
Warm-up to Spec:6 minutes

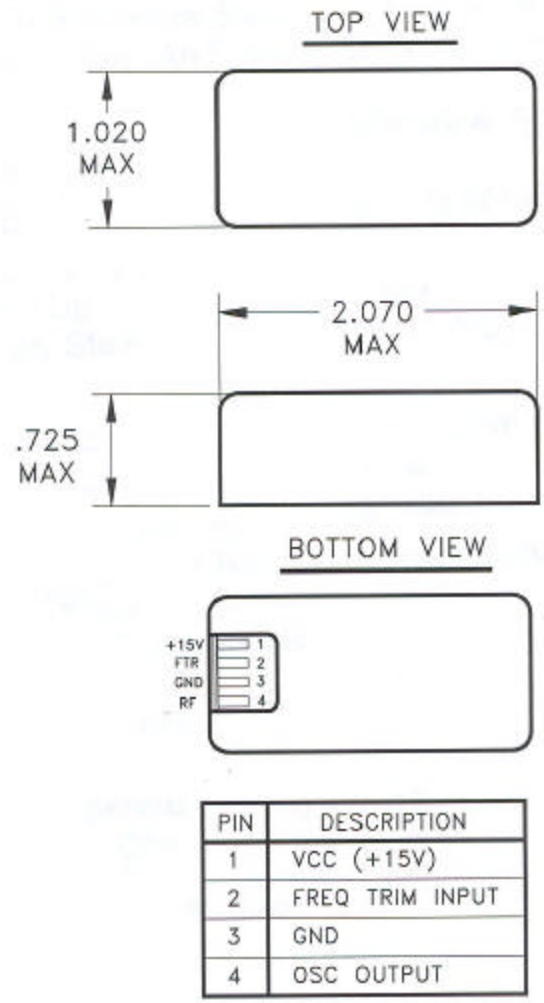
Note: +12v DC option available

Environmental

Temperature Range:
Operating -10°C to +60°C
Operational -40°C to +85°C but may not meet frequency stability

Physical Size

Package:
Size 1.0" x 2.0" x 0.7"



PIN	DESCRIPTION
1	VCC (+15V)
2	FREQ TRIM INPUT
3	GND
4	OSC OUTPUT