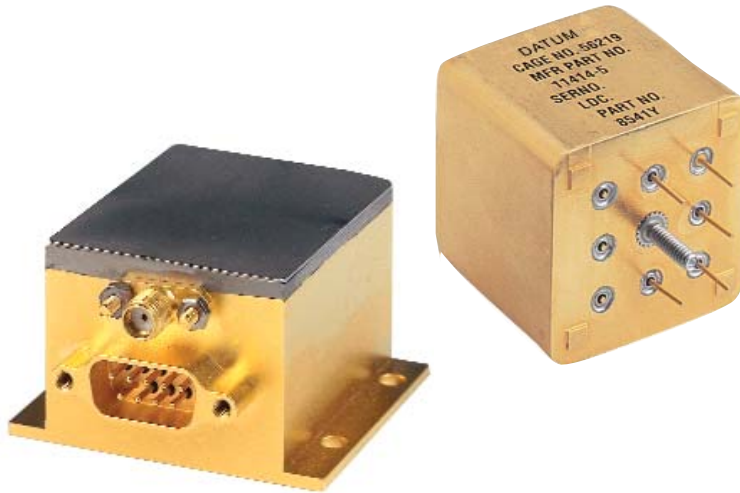


HIGH REL/SPACE PRODUCTS
Caesium and Quartz Products

Features

Output Frequency:	60 MHz - 100 MHz
Fast warm up:	5 Min. from -30° C
Low power consumption:	1.7W @ 25° C (Vacuum)
Compact sizes	
Typical:	1.33" x 1.33" x 1.31"
Optional:	1.7"x 1.5" x 1.0"
Frequency Aging @ 100 MHz:	2E-6/year
Temperature Coefficient:	± 5E-7
Low Acceleration Sensitivity:	<8E-10/g Typical
Temperature Range:	-30° C to +70° C
Component Quality:	B-level military std.

9800 Series Hi-Reliability VHF Oscillators



Overview

The 9800 is an ultra-miniature ovenized crystal oscillator that provides high stability RF sine wave output.

The use of hybrid circuitry allows for the greatest reduction in size possible without compromise of the performance or reliability.

Assembly is performed by skilled operators certified to NASA approved workmanship standards. Hybrid circuits are produced at facilities qualified to MIL-PRF-38534C. All discrete components are manufactured and tested to B-level standards.

The environmentally rugged 9800 features an SC-cut quartz resonator and sustaining electronics that are controlled at a precise temperature to achieve temperature insensitive performance, excellent phase noise and aging characteristics.

High-end crystal oscillator precision is required for both time and frequency in a wide variety of applications including:

- Radio navigation
- Radar Warning Receiver
- Satellite transmission
- Satellite tracking and guidance

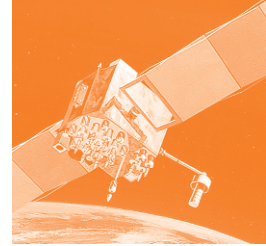
The 9800 is the obvious choice where a combination of excellent spectral purity, and long term stability is essential. It contributes to simplification of system design because of low frequency aging which extends the period of time needed between synchronization.

This rugged, compact crystal oscillator is especially advantageous when utilized in mobile transportable and portable applications where fast warm-up, low power consumption and small size are required.



Timing, Test & Measurement

9800 Series Hi-Reliability VHF Oscillators



Specifications

HIGH REL/SPACE PRODUCTS
Caesium and quartz products

Output level/load 7.0 dBm, min./50 Ω

Frequency Aging 2E-6
Per Year

Phase Noise @ 100 MHz

Offset Frequency	L(f)
1 Hz	-60 dBC/Hz
10 Hz	-90 dBC/Hz
100 Hz	-120 dBC/Hz
1 KHz	-150 dBC/Hz
10 KHz	-160 dBC/Hz
100 KHz	-166 dBC/Hz

Frequency vs Temp ± 5E-7

Harmonic Distortion -30 dBc

Non-Harmonic Distortion -90 dBc

Frequency Retrace ± 1E-8

(After up to 24 hrs. Off & 1 hours use at @25°C)

Input Voltage

Range 15 to 18 V dc
Sensitivity 1E-7, ±5%

Power, Steady State 1.7 Watts @25° C Vacuum

Warm-Up Power 5 Watts

Load Change Sensitivity ± 5E-8, ±5%

Warm-Up Time from -40° C 5 minutes to 2E-8*

Elec. Freq. Cont. Range (EFC) ± 10ppm

EFC Voltage Input -10 TO +10Vdc, (-) Sensing

Physical

Size	1.9" x 1.5" x 1.0"	1.33" x 1.33" x 1.31"
Weight	6.5 ounces	3.5 ounces
Volume	2.25 cu inches	2.95 cu inches

Operating Temp. Range -30° C to +70° C

Storage Temp. (Non-op) -55° C to +100° C

Acceleration Sensitivity

Typical 8E-10 per g

Random Vibration 20 Grms

Radiation 100K Rad

EMI/EMC specification For performance levels contact the factory

Reliability Specification MIL-HDBK-217E

MTBF >6 million hours

*Fast warm-up option available

Specifications subject to change without notice.