

VAC31, VBC31 Series

14 Pin and 8 Pin / HCMOS/TTL / VCXO Oscillator

Lead-Free
RoHS Compliant

CALIBER
Electronics Inc.

PART NUMBERING GUIDE

Environmental/Mechanical Specifications on page F5

VAC31 100 48 A T A B A - 155.520MHz

Package

VAC31 = 14 Pin Dip / HCMOS-TTL / VCXO
VBC31 = 8 Pin Dip / HCMOS-TTL / VCXO

Inclusive Tolerance/Stability

100= +/-100ppm, 50= +/-50ppm, 25= +/-25ppm,
20= +/-20ppm, 10= +/-10ppm

Operating Temperature Range

Blank = 0°C to 70°C, 27 = -20°C to 70°C, 48 = -40°C to 85°C

Supply Voltage

Blank = 5.0Vdc ±5%, A=3.3Vdc ±5%

Control Voltage

A=2.5Vdc ±2.0Vdc / B=2.5Vdc ±2.5Vdc
If Using 3.3Vdc Option =1.65Vdc ±1.65Vdc

Linearity

A=5% / B=10% / C=15% / D=20%

Frequency Deviation (Over Control Voltage)

A=±50ppm / B=±100ppm / C=±150ppm / D=±200ppm /
E=±250ppm / F=±300ppm / G=±350ppm

Duty Cycle

Blank=40-60% / T=45-55%

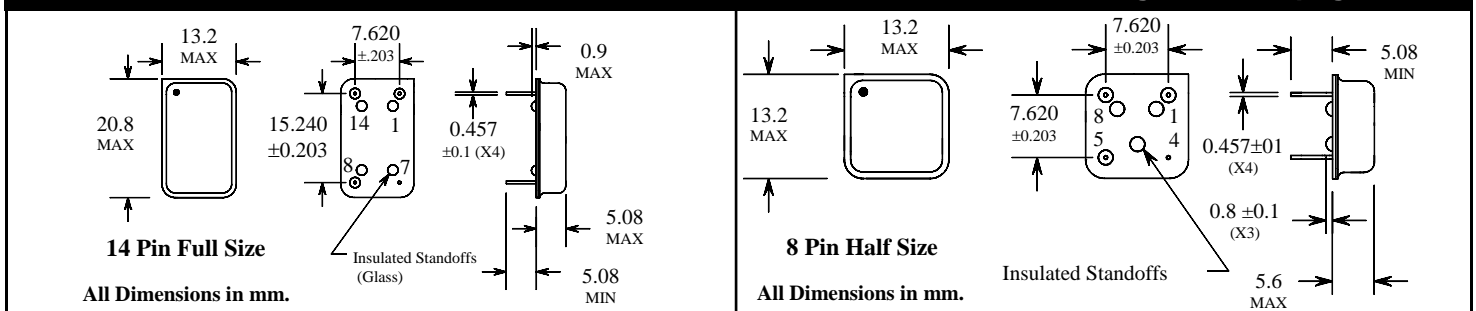
ELECTRICAL SPECIFICATIONS

Revision: 1998-B

Frequency Range (Full Size / 14 Pin Dip)	1.500MHz to 160.000MHz
Frequency Range (Half Size / 8 Pin Dip)	1.000MHz to 40.000MHz
Operating Temperature Range	0°C to 70°C / -20°C to 70°C / -40°C to 85°C
Storage Temperature Range	-55°C to 125°C
Supply Voltage	5.0Vdc ±5%, 3.3Vdc ±5%
Aging (at 25°C)	±5ppm / year Maximum
Load Drive Capability	10TTL Load or 15pF HCMOS Load Maximum
Start Up Time	10mSeconds Maximum
Pin 1 Control Voltage (Positive Transfer Characteristic)	A=2.5Vdc ±2.0Vdc / B=2.5Vdc ±2.5Vdc
Linearity	±20%, ±15%, ±10% Maximum ±5% Maximum (not available with 200ppm frequency deviation)
Input Current	1.000MHz to 20.000MHz: 30mA Maximum 20.001MHz to 30.000MHz: 40mA Maximum 30.001MHz to 160.000MHz: 50mA Maximum
One Sigma Clock Jitter	<40.000MHz / ±25pSeconds Maximum >40.000MHz / ±50pSeconds Maximum
Absolute Clock Jitter	< 40.000MHz / ±100pSeconds Maximum >40.000MHz / ±200pSeconds Maximum
Frequency Tolerance / Stability	Inclusive of Operating Temperature Range, Supply Voltage and Load ±100ppm, ±50ppm, ±30ppm, ±25ppm, ±20ppm (20ppm = 0°C to 70°C Only)
Output Voltage Logic High (Voh)	w/TTL Load: 2.4Vdc Minimum w/HCMOS Load: Vdd -0.5Vdc Minimum
Output Voltage Logic Low (Vol)	w/TTL Load: 0.4Vdc Maximum w/HCMOS Load: 0.5Vdc Maximum
Rise Time / Fall Time	0.4Vdc to 2.4Vdc w/TTL Load; 20% to 80% of Waveform w/HCMOS Load 5nSeconds Maximum
Duty Cycle	@ 1.4Vdc w/TTL Load; @50% w/HCMOS Load @ 1.4Vdc w/TTL Load or w/HCMOS Load 50 ±10% (Standard) 50±5% (Optional)
Frequency Deviation Over Control Voltage	A=±50ppm Min. / B=±100ppm Min. / C=±150ppm Min. / D=±200ppm Min. / E=±250ppm Min. / F=±300ppm Min. / G=±350ppm Min.

MECHANICAL DIMENSIONS

Marking Guide on page F3-F4



Pin 1: Control Voltage (Vc)
Pin 7: Case Ground

Pin 8: Output
Pin 14: Supply Voltage

Pin 1: Control Voltage (Vc)
Pin 4: Case Ground

Pin 5: Output
Pin 8: Supply Voltage

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