VAC31, VBC31 Series

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

Lead-Free
RoHS Compliant

C A L I B E R
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 Controll Voltage
A=±50ppm / B=±100ppm / C=±150ppm / D=±200ppm /
E=±250ppm / F=±300ppm / G=±350ppm

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

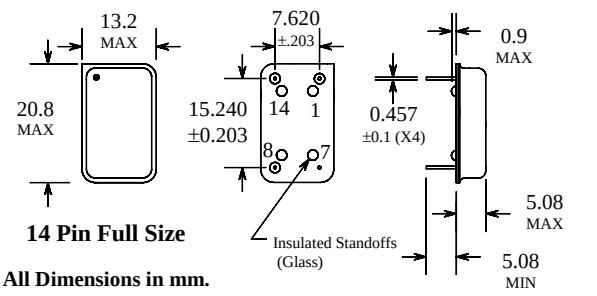
ELECTRICAL SPECIFICATIONS

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 20.001MHz to 30.000MHz 30.001MHz to 160.000MHz	30mA Maximum 40mA Maximum 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 w/HCMOS Load	2.4Vdc Minimum Vdd –0.5Vdc Minimum
Output Voltage Logic Low (Vol)	w/TTL Load w/HCMOS Load	0.4Vdc Maximum 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

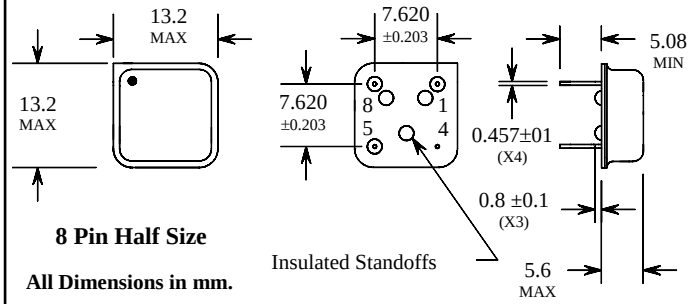
Marking Guide on page F3-F4



14 Pin Full Size

All Dimensions in mm.

Pin 1: Control Voltage (Vc)	Pin 8: Output
Pin 7: Case Ground	Pin 14: Supply Voltage



8 Pin Half Size

All Dimensions in mm.

Pin 1: Control Voltage (Vc)	Pin 5: Output
Pin 4: Case Ground	Pin 8: Supply Voltage