

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	Control Voltage A=2.5Vdc $\pm$ 2.0Vdc / B=2.5Vdc $\pm$ 2.5Vdc If Using 3.3Vdc Option =1.65Vdc $\pm$ 1.65Vdc
Inclusive Tolerance/Stability 100= $\pm$ 100ppm, 50= $\pm$ 50ppm, 25= $\pm$ 25ppm, 20= $\pm$ 20ppm, 10= $\pm$ 10ppm	Linearity A=5% / B=10% / C=15% / D=20%
Operating Temperature Range Blank = 0°C to 70°C, 27 = -20°C to 70°C, 48 = -40°C to 85°C	Frequency Deviation (Over Control Voltage) A= $\pm$ 50ppm / B= $\pm$ 100ppm / C= $\pm$ 150ppm / D= $\pm$ 200ppm / E= $\pm$ 250ppm / F= $\pm$ 300ppm / G= $\pm$ 350ppm
Supply Voltage Blank = 5.0Vdc $\pm$ 5%, A=3.3Vdc $\pm$ 5%	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 $\pm$ 5%, 3.3Vdc $\pm$ 5%
Aging (at 25°C)	$\pm$ 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 $\pm$ 2.0Vdc / B=2.5Vdc $\pm$ 2.5Vdc
Linearity	$\pm$ 20%, $\pm$ 15%, $\pm$ 10% Maximum $\pm$ 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 / $\pm$ 25pSeconds Maximum >40.000MHz / $\pm$ 50pSeconds Maximum
Absolute Clock Jitter	< 40.000MHz / $\pm$ 100pSeconds Maximum >40.000MHz / $\pm$ 200pSeconds Maximum
Frequency Tolerance / Stability	Inclusive of Operating Temperature Range, Supply Voltage and Load $\pm$ 100ppm, $\pm$ 50ppm, $\pm$ 30ppm, $\pm$ 25ppm, $\pm$ 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 $\pm$ 10% (Standard) 50 $\pm$ 5% (Optional)
Frequency Deviation Over Control Voltage	A= $\pm$ 50ppm Min. / B= $\pm$ 100ppm Min. / C= $\pm$ 150ppm Min. / D= $\pm$ 200ppm Min. / E= $\pm$ 250ppm Min. / F= $\pm$ 300ppm Min. / G= $\pm$ 350ppm Min.

MECHANICAL DIMENSIONS

Marking Guide on page F3-F4

14 Pin Full Size All Dimensions in mm.		8 Pin Half Size All Dimensions in mm.	
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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