

SERIES VC71, VC72, AND VC73 TTL / HCMOS / ACMOS

- **FEATURES**
 - STANDARD 14 PIN DIP PACKAGE
 - TOLERANCE AND STABILITY TO ± 10 PPM
 - CUSTOM SPECIFICATIONS
- **SPECIFICATIONS**

FREQUENCY RANGE	1.00 MHz TO 30.00 MHz
FREQUENCY STABILITY OVER TEMPERATURE RANGE (REF. TO 25°C)	± 10 PPM TO ± 50 PPM MAX AT VC = +2.5 VDC AND VCC = +5.0 VDC (SEE TABLE 1)
OPERATING TEMPERATURE RANGE	0°C TO +50°C 0°C TO +70°C -40°C TO +85°C AT VC = +2.5 VDC AND VCC = +5.0VDC AND STANDARD LOAD
STORAGE TEMPERATURE RANGE	-40°C TO +85°C
OUTPUT WAVEFORM OPTIONS	TTL, HCMOS, AND ACMOS (SEE TABLE 2)
SUPPLY VOLTAGE	+5 VDC $\pm 5\%$ (3.3 VDC AVAILABLE)
SUPPLY CURRENT	35 mA MAX AT VC = +2.5 VDC, VCC = +5.0 VDC AND STANDARD LOAD AT 25°C
ABSOLUTE PULLING RANGE (APR)	± 50 PPM TO ± 100 PPM MIN OVER CONTROL VOLTAGE RANGE AT VCC = +5.0 V AND STANDARD LOAD AT 25°C
NOMINAL CONTROL VOLTAGE (VC)	+2.5 VDC
SETTABILITY AT V_{fo} †	+2.5 VDC ± 0.5 VDC
CONTROL VOLTAGE RANGE	+0.5 TO +4.5 VDC
LINEARITY	$\pm 10\%$ MAX OF BEST STRAIGHT LINE FIT
SYMMETRY	NORMAL: 40/60% TIGHT: 45/55% (OPTION)
SLOPE	POSITIVE
MODULATION FREQUENCY BANDWIDTH	10 KHz (-3dB) MIN
INPUT IMPEDANCE	10 KOHM MIN
ABSOLUTE VOLTAGE RANGE	-0.5 TO +7.0 VDC FOR VCC AND VC (NON DESTRUCTIVE)
PHASE NOISE (TYPICAL)	SEE GRAPH OF PHASE NOISE CHARACTERISTICS



† V_{fo} IS THE CONTROL VOLTAGE AT WHICH THE OUTPUT FREQUENCY IS EQUAL TO THE NOMINAL FREQUENCY (F_o) AT +25 °C ± 1 °C
ABSOLUTE PULLING RANGE (APR) IS THE MINIMUM GUARANTEED FREQUENCY SHIFT FROM F_o OVER VARIATIONS IN TEMPERATURE, AGING, POWER SUPPLY, AND LOAD.

● TEMPERATURE RANGE DESIGNATIONS

CODE	TEMPERATURE RANGE	TEMPERATURE STABILITY	APR (MIN)
A	0°C TO +50°C	± 10 PPM	± 50 PPM
B	0°C TO +50°C	± 15 PPM	± 50 PPM
C	0°C TO +50°C	± 15 PPM	± 50 PPM
D	0°C TO +50°C	± 20 PPM	± 75 PPM
E	0°C TO +50°C	± 25 PPM	± 75 PPM
F	0°C TO +50°C	± 35 PPM	± 100 PPM
G	0°C TO +70°C	± 10 PPM	± 50 PPM
H	0°C TO +70°C	± 20 PPM	± 50 PPM
I	0°C TO +70°C	± 20 PPM	± 50 PPM
J	0°C TO +70°C	± 25 PPM	± 50 PPM
K	0°C TO +70°C	± 35 PPM	± 75 PPM
L	0°C TO +70°C	± 50 PPM	± 100 PPM
M	-40°C TO +85°C	± 20 PPM	± 50 PPM
N	-40°C TO +85°C	± 30 PPM	± 50 PPM
O	-40°C TO +85°C	± 25 PPM	± 75 PPM
P	-40°C TO +85°C	± 35 PPM	± 75 PPM
Q	-40°C TO +85°C	± 50 PPM	± 100 PPM

● OUTPUT AND LOAD CHARACTERISTICS

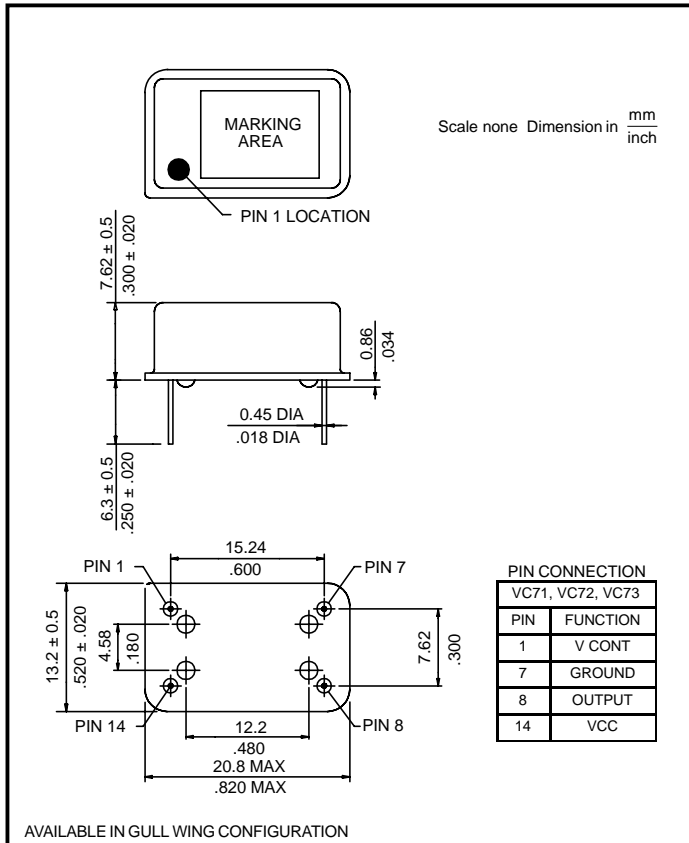
TTL - 3 GATES (VC71)	TTL/HCMOS COMPATIBLE SYMMETRY: 40/60% TO 60/40% AT +1.4 VDC VOH: +2.4 VDC MIN VOL: +0.4 VDC MAX RISE/FALL TIME: 10 ns WITH STANDARD LOAD (20% TO 80%)
HCMOS - 15 pF (VC72)	TTL/HCMOS COMPATIBLE SYMMETRY: 40/60% TO 60/40% AT 50% LEVEL VOH: +4.5 VDC MIN VOL: +0.5 VDC MAX RISE/FALL TIME: 5 ns WITH STANDARD LOAD (20% TO 80%)
ACMOS - 30 pF (VC73)	ACMOS TO DRIVE 3 GATES AT TTL LEVELS SYMMETRY: 40/60% TO 60/40% AT 50% LEVEL VOH: +4.5 VDC MIN VOL: +0.5 VDC MAX RISE/FALL TIME: 5 ns WITH 30 pF LOAD (20% TO 80%)

● AVAILABLE OPTIONS

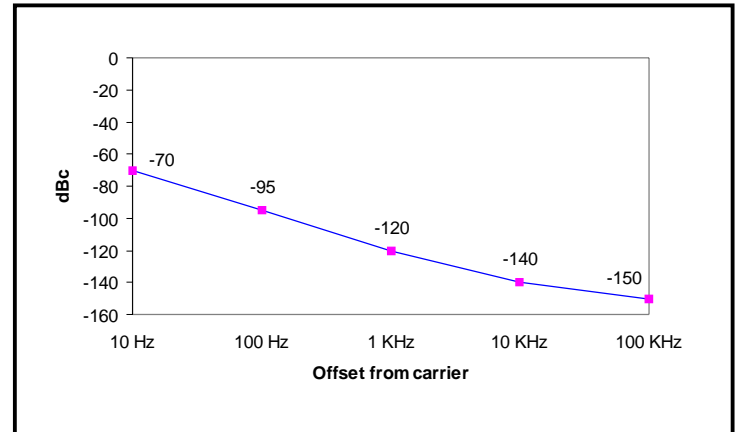
ENABLE / DISABLE WITH 5 PIN BASE
5.08 mm / .200 in MAXIMUM HEIGHT WITH OPEN BLANK DESIGN
CONSULT RALTRON FOR SPECIFICATIONS

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● OUTLINE DRAWING



● PHASE NOISE CHARACTERISTICS



● PART NUMBERING SYSTEM

SERIES	OUTPUT (TABLE 2)	CODE (TABLE 1)	FREQUENCY
VC7	1	TTL	- IN MHz
	2	HCMOS	
	3	ACMOS	
		A THROUGH Q	

EXAMPLE:

VC71D-16M384

TTL OUTPUT, ±20 PPM OVER 0° C TO +50° C

MINIMUM APR ±75 PPM

16.384 MHz

● MECHANICAL CHARACTERISTICS

MECHANICAL SHOCK	IEC-68-2-27 TEST EA, 30g FOR 18 ms HALFSINE
VIBRATION	IEC 68-2-6 (TEST FC) 0.35 mm, 5g, 10-2 kHz, 6 CYCLES AXIS
THERMAL SHOCK	IEC 68-2-14 (TEST NA), 30 min IN EACH TEMPERATURE EXTREME
SEAL	IEC 68-2-17 (TEST QC)
SOLDERING HEAT	IEC 68-2-20A
MECHANICAL	14 PIN DIP, LEADED, PER OUTLINE DRAWING