## *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<br>0°C TO +70°C<br>-40°C TO +85°C<br>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 ±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<br>AT VCC = +5.0 V AND STANDARD LOAD AT 25°C |
| NOMINAL CONTROL VOLTAGE (VC) | +2.5 VDC |
| SETTABILITY AT Vfo † | +2.5 VDC ±0.5 VDC |
| CONTROL VOLTAGE RANGE | +0.5 TO +4.5 VDC |
| LINEARITY | ±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 |

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

### TEMPERATURE RANGE DESIGNATIONS

TABLE 1

| 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 | ± 100PPM |
| 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

TABLE 2

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

**Raltron Electronics Corporation 10651 NW 19th St. Miami, Florida 33172 U.S.A.**
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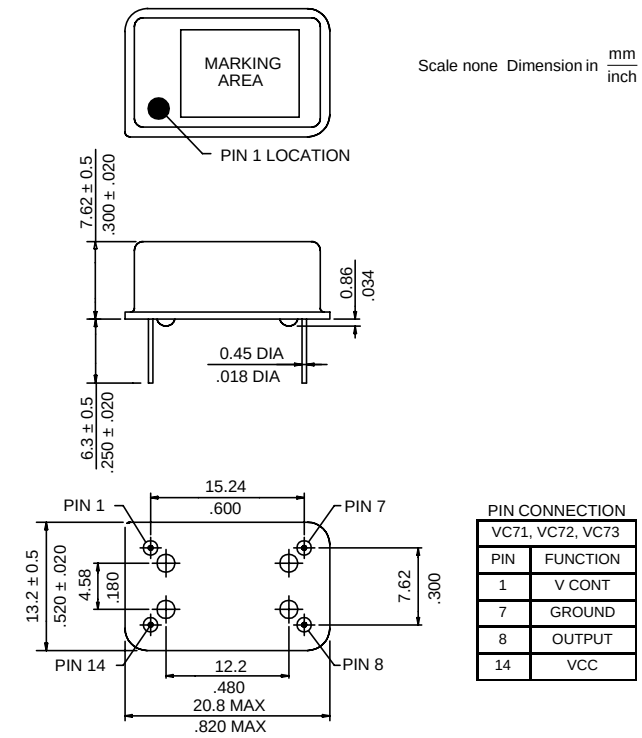
## OUTLINE DRAWING

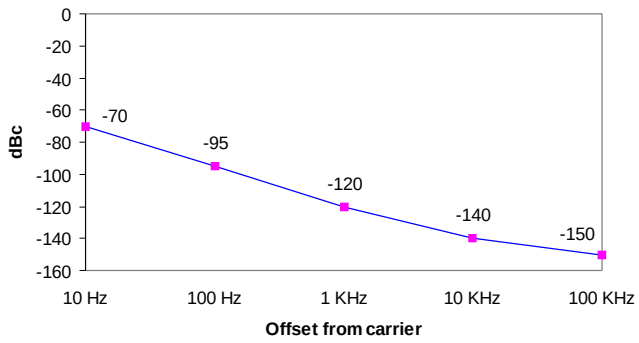



PIN CONNECTION

| VC71, VC72, VC73 | |
|---|---|
| PIN | FUNCTION |
| 1 | V CONT |
| 7 | GROUND |
| 8 | OUTPUT |
| 14 | VCC |

AVAILABLE IN GULL WING CONFIGURATION

## PHASE NOISE CHARACTERISTICS




## PART NUMBERING SYSTEM

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

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 |

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