



|                                       |   |
|---------------------------------------|---|
| <b>FREQUENCY STABILITY</b>            |   |
| OVER:                                 |   |
| OPERATING TEMP. RANGE :               | see note 1  |
| LONG TERM AGING 1ST YEAR:             | < ±0.7 ppm *  |
| 10 YEARS:                             | < ±4.0 ppm *  |
| SUPPLY VOLTAGE ± 0.2 V                | < ±0.1 ppm *  |
| LOAD ±10%:                            | < ±0.01 ppm   |
| <b>POWER SUPPLY</b>                   |   |
| SUPPLY INPUT:                         | V <sub>cc</sub> = 5 V ±0.2 V *  |
| INPUT CURRENT :                       | < 70 mA @ +30 °C *  |
| INPUT CURRENT :                       | < 110 mA @ -20 °C *   |
| <b>FREQUENCY CONTROL RANGE</b>        |   |
| CONTROL VOLTAGE:                      | see note 2  |
| FREQUENCY DEVIATION:                  | > ±4 ppm *  |
| RESPONSE SLOPE:                       | positive  |
| <b>OUTPUT</b>                         |   |
| OUTPUT SIGNAL:                        | HC-MOS compatible   |
| SYMMETRY:                             | 40 (min.) / 60 (max.)<br>% @ V <sub>cc</sub> / 2 *  |
| RISE AND FALL TIME:                   | t <sub>r</sub> < 7ns t <sub>f</sub> < 7 ns *  |
| LEVEL „0“ AND „1“:                    | < 0.4 V > V <sub>cc</sub> - 0.5 V   |
| FAN OUT (LOAD):                       | 10 LS   |
| <b>ENVIRONMENT</b>                    |   |
| OPERABLE TEMP. RANGE:                 | -40 to +85 °C   |
| STORAGE TEMP. RANGE:                  | -65 to +125 °C  |
| VIBRATION:                            | 10 to 2000 Hz / 10 g  |
| SHOCK:                                | 2000 g, 0.3 ms, ½ sine  |
| PACKAGE:                              | DIL 14, 4 pins, GND to case   |
| PACKAGE HEIGHT:                       | 8 mm<br>(see packaging info)  |
| <b>WARM-UP</b>                        |   |
| ΔF/F:                                 | within spec after 30s @ 0°C *   |
| CURRENT:                              | < 250 mA during 10s   |
| <b>MISCELLANEOUS</b>                  |   |
| SHORT TERM STABILITY:                 | < 5 E-10 0.1 s to 30 s<br>Typical 5 E-11 @ 1 s  |
| PHASE NOISE (BW = 1Hz):               | 1 Hz : -70 dBc / Hz<br>10 Hz : -100 dBc / Hz<br>100 Hz : -130 dBc / Hz<br>1 kHz : -140 dBc / Hz |
| * Customer's specification on request |   |

|                        |                                       |
|------------------------|---------------------------------------|
| <b>NOTE 1</b>          |                                       |
| <b>OCXOVT-AR1, AV5</b> |                                       |
| TEMP. RANGE *          | 0 to +60 °C                           |
| STABILITY *            | ±0.075 ppm<br>(0.15 ppm peak to peak) |
| <b>OCXOVT-BR1, BV5</b> |                                       |
| TEMP. RANGE *          | -20 to +70 °C                         |
| STABILITY *            | ±0.15 ppm<br>(0.3 ppm peak to peak)   |
| <b>OCXOVT-CR1, CV5</b> |                                       |
| TEMP. RANGE *          | -40 to +85 °C                         |
| STABILITY *            | ±0.25 ppm<br>(0.5 ppm peak to peak)   |

|                             |            |
|-----------------------------|------------|
| <b>NOTE 2</b>               |            |
| <b>OCXOVT-AR1, BR1, CR1</b> |            |
| ADJUSTMENT WITH RESISTOR    | 0 to 10 kΩ |
| (connected to ground)       |            |
| INPUT IMPEDANCE             | > -4.7 kΩ  |
| <b>OCXOVT-AV5, BV5, CV5</b> |            |
| ADJUSTMENT WITH VOLTAGE     | 0.5 to 5 V |
| INPUT IMPEDANCE             | > 47 kΩ    |

|  |   |           |           |
|--|---|-----------|-----------|
| <b>MARKING EXAMPLE</b>   |   |           |           |
|  |  | Type      | Spec No.  |
| OCXOVT-BV5   |   | Frequency | Date Code |
| 20.000 MHz   | 01.25   | ○ (PIN 1) | Piece No. |
| ○  | 12  |           |           |

|                                     |   |                             |   |
|-------------------------------------|---|-----------------------------|---|
| <b>ORDERING INFORMATION EXAMPLE</b> |   |                             |   |
| O C X O V T - B V 5 20 MHz x x x    |   |                             |   |
| Oscillator Type                     | OCXO = oven controlled Crystal Oscillator   |                             | N° of customer spec.  |
| Oscillator Version                  | V = low power voltage 5V<br>T = tight tolerance   | Oscillator output frequency |   |
| Temperature Range                   | A = 0 to +60°C; +/-0.075ppm<br>B = -20 to +70°C; +/-0.15ppm<br>C = -40 to +85°C; +/-0.25ppm<br>X = custom spec. | Frequency Adjustment        | R1 = external resistor<br>V5 = voltage 5V<br>Y = custom spec. |

|                                   |         |         |         |         |         |
|-----------------------------------|---------|---------|---------|---------|---------|
| <b>STANDARD FREQUENCIES (MHz)</b> |         |         |         |         |         |
| 10.0000                           | 12.8000 | 16.0000 | 16.3840 | 19.4400 | 20.0000 |
| 40.0000                           |         |         |         |         |         |

|       |           |                 |
|-------|-----------|-----------------|
| DATE: | June 2003 | Revision No.: 7 |
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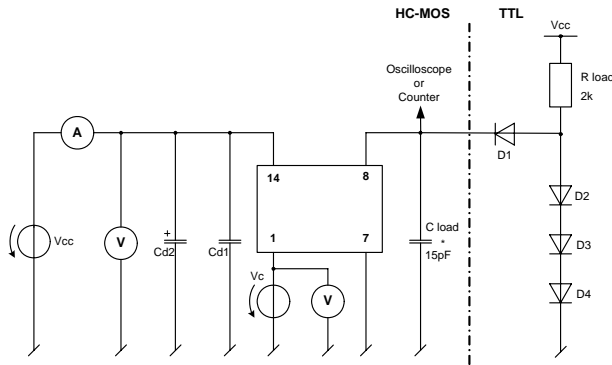
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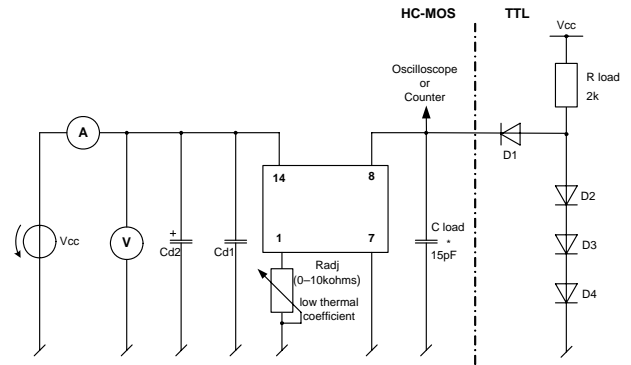
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**Application and Test Circuit:**

Adjustment with voltage

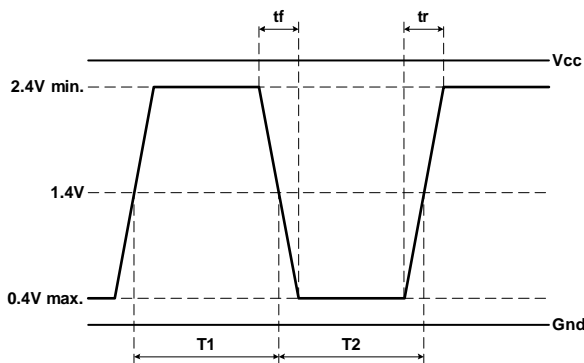


Adjustment with resistor

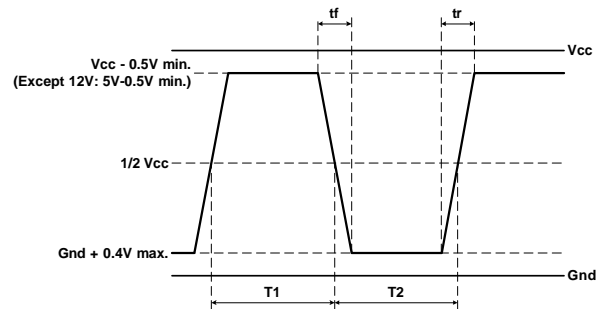


**Waveform Output:**

Waveshape TTL



Waveshape HC-MOS



$$Duty Cycle = 100 \times \frac{T1}{T1 + T2} [\%]$$

|       |           |                 |
|-------|-----------|-----------------|
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