

Half Size Clock Oscillator Enable/Disable



The XO-52 series oscillator is half size, has tri-state enable/disable controlled function. The metal package with pin 4 case ground acts as shielding to minimize EMI radiation.

FEATURES

- Size: 8 pin half size
- Industry standard
- Tri-state enable/disable
- Wide frequency range
- Low cost
- Resistance weld package
- 5 V
- Compliant to RoHS Directive 2002/95/EC



| STANDARD ELECTRICAL SPECIFICATIONS | | | |
|------------------------------------|------------|--------------------------------|---|
| PARAMETER | SYMBOL | CONDITION | VALUE |
| Frequency range | F_O | - | 1.000 MHz to 100.000 MHz |
| Frequency stability ⁽¹⁾ | | all conditions | ± 25 ppm, ± 50 ppm, ± 100 ppm |
| Operating temperature range | T_{OPR} | - | 0 °C to 70 °C |
| | | | - 40 °C to + 85 °C (option) |
| Storage temperature range | T_{STG} | - | - 55 °C to + 125 °C |
| Power supply voltage | V_{DD} | - | 5.0 V \pm 10 % |
| Aging (first year) | | 25 °C \pm 3 °C | ± 5 ppm |
| Supply current | I_{DD} | 1.000 MHz to 23.999 MHz | 20 mA max. |
| | | 24.000 MHz to 49.999 MHz | 30 mA max. |
| | | 50.000 MHz to 69.999 MHz | 40 mA max. |
| | | 70.000 MHz to 100.000 MHz | 60 mA max. |
| Output symmetry | Sym | at $1/2 V_{DD}$ | 40 %/60 % (45 %/55 % option) |
| Rise time | t_r | 20 % V_{DD} to 80 % V_{DD} | 10 ns max. |
| Fall time | t_f | 80 % V_{DD} to 20 % V_{DD} | 10 ns max. |
| Output voltage | V_{OH} | - | 90 % V_{DD} min. |
| | V_{OL} | - | 10 % V_{DD} max. |
| Output load | TTL load | - | 1 TTL to 10 TTL |
| | HCMOS load | - | to 50M: 50 pF |
| | | - | to 70M: 30 pF |
| | | - | to 100M: 15 pF |
| Start-up time | t_s | - | 10 ms max. |
| Pin 1, tri-state function | | - | pin 1 = H or open (output active at pin 5) pin 1 = L (high impedance at pin 5) |

Note

⁽¹⁾ Include: 25 °C tolerance, operating temperature range, input voltage change, aging, load change, shock vibration

DIMENSIONS in inches [millimeters]

MARKING AREA

0.508 [12.9] max.

0.300 \pm 0.005 [7.62 \pm 0.13]

0.300 \pm 0.005 [7.62 \pm 0.13]

0.580 [12.9] max.

0.220 [5.6] max.

0.031 \pm 0.003 [0.8 \pm 0.1]

0.018 \pm 0.003 [0.45 \pm 0.1]

0.268 [6.80] max.

| ENABLE/DISABLE FUNCTION | |
|--------------------------|----------------|
| INPUT (PIN 1) | OUTPUT (PIN 5) |
| OPEN | ENABLE |
| $V_{IN} \geq 2.2 V_{DC}$ | ENABLE |

| PIN | CONNECTION |
|-----|------------|
| #1 | N.C. |
| #4 | GND |
| #5 | OUTPUT |
| #8 | V_{DD} |

HCMOS TEST CIRCUIT

Test Point O_o

CMOS Load

CL ⁽¹⁾

CL = 15 pF or 50 pF (see individual spec. sheet)

Note ⁽¹⁾ Includes Stray and Probe Capacitance

HCMOS OUTPUT WAVEFORM

V_{OH}

V_{OL}

90 % V_{DD}

50 % V_{DD}

10 % V_{DD}

GND

T_1

$T_0 = 1/F_O$

SYMMETRY = $\frac{T_1}{T_0} \times 100$ %



ORDERING INFORMATION

| XO-52 | B | R | E | 40M | e2 |
|-------|--|---|--|---------------|-------------------------------|
| MODEL | FREQUENCY STABILITY | OTR | ENABLE/DISABLE | FREQUENCY/MHz | JEDEC LEAD (Pb)-FREE standard |
| | AA = 0.0025 % (25 ppm) A = 0.005 % (50 ppm) B = 0.01 % (100 ppm) | blank = 0 °C to + 70 °C R = - 40 °C to + 85 °C | blank = pin 1 open E = disable to tri-state | | |

GLOBAL PART NUMBER

| | | | | | | | | | | | | |
|-------|---|---|---|---------------------|-----|----------------|--------------|---------|---|-----------|---|---|
| X | O | 5 | 2 | C | T | E | L | N | A | 4 | 0 | M |
| MODEL | | | | FREQUENCY STABILITY | OTR | ENABLE/DISABLE | PACKAGE CODE | OPTIONS | | FREQUENCY | | |

GLOBAL PART NUMBERING

| X | O | 5 | 2 | C | T | E | L | N | A | 4 | 0 | M |
|---|---|---|---|---|---|---|--|--|---|---|---|---|
| MODEL NUMBER | | | | FREQUENCY STABILITY | OPERATING TEMPERATURE (OTR) | ENABLE/DISABLE | PACKAGE CODE | OPTION | | FREQUENCY | | |
| XO53 = XO-53 XO54 = XO-54 XO34 = XO-543 XO52 = XO-52 XO32 = XO-523 XO5M = XOSM-52 XO63 = XOSM-533 XO62 = XOSM-532 XO61 = XOSM-531 XO57 = XOSM-57 XO37 = XOSM-573 XO27 = XOSM-572 XO17 = XOSM-571 XO55 = XOSM-55 XO35 = XOSM-553 | | | | C = 0.01 % (100 ppm) D = 0.005 % (50 ppm) E = 0.0025 % (25 ppm) | T = 0 °C to + 70 °C R = - 40 °C to + 85 °C | F = pin 1 open E = disable to tristate | Tape and reel H = RF7 Bulk A = B04 (XO63, XO62, XO61) C = D06 (XO57, XO37, XO27, XO17) D = D07 (XO53, XO54, XO34, XO55, XO35) L = D08 (XO52, XO32, XO5M) | NA = no additional options 60 = 45/55 symmetry Contact factory for all other options | | 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency | | |
| Example: XO52CTELNA40M | | | | | | | | | | | | |

PART MARKING

| | |
|---------|----------------------------|
| Line 1: | M2802XXXXX (part number) |
| Line 2: | XX.XXXXM (frequency) |
| Line 3: | yywwvv (date/factory code) |



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