

## 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 <sup>(1)</sup>		all conditions	$\pm 25$ ppm, $\pm 50$ ppm, $\pm 100$ 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	$\pm 5$ 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

<sup>(1)</sup> 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]

0.268 [6.80] max.

0.018  $\pm$  0.003 [0.45  $\pm$  0.1]

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

Note <sup>(1)</sup> Includes Stray and Probe Capacitance

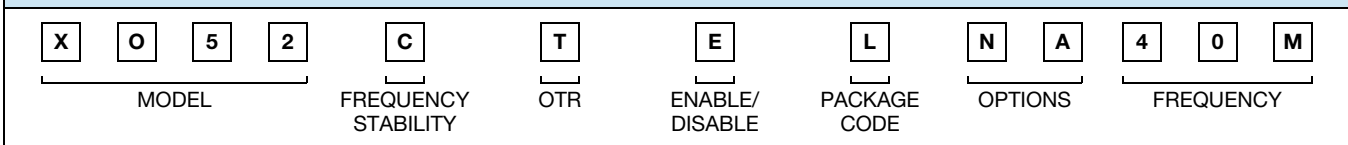
#### HCMOS OUTPUT WAVEFORM

$T_0 = 1/F_0$       SYMMETRY =  $\frac{T_1}{T_0} \times 100 \%$

**ORDERING INFORMATION**

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

**GLOBAL PART NUMBER**



**GLOBAL PART NUMBERING**

X	O	5	2	C	T	E	L	N	A	4	0	M
<b>MODEL NUMBER</b>				<b>FREQUENCY STABILITY</b>	<b>OPERATING TEMPERATURE (OTR)</b>	<b>ENABLE/DISABLE</b>	<b>PACKAGE CODE</b>	<b>OPTION</b>		<b>FREQUENCY</b>		
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	<b>Tape and reel</b> H = RF7  <b>Bulk</b> 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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