

## Full Size Clock Oscillators TTL Compatible



The XO-53 series oscillator is TTL compatible and features fast rise/fall times with high reliability at low cost. The metal package with pin 7 case ground acts as shielding to minimize EMI radiation.

### FEATURES

- 10 TTL output load
- Size: 14 pin full size
- Industry standard
- Wide frequency range
- Low cost
- Resistance weld package
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

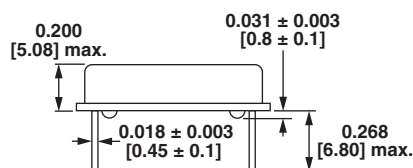
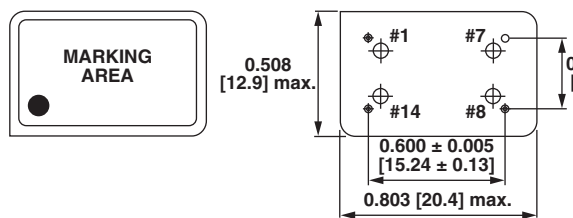
### STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE
Frequency range	$F_O$	-	1.0 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	$I_{DD}$	1.0 MHz to 23.999 MHz	15 mA max.
		24.000 MHz to 69.999 MHz	30 mA max.
		70.000 MHz to 100.000 MHz	60 mA max.
Output symmetry	Sym	at 1.4 V	40 %/60 % (45 %/55 % option)
Rise time	$t_r$	0.4 V to 2.4 V	5 ns max.
Fall time	$t_f$	2.4 V to 0.4 V	5 ns max.
Output voltage	$V_{OH}$	-	2.4 V min.
	$V_{OL}$	-	0.4 V max.
Output load	TTL load	-	1 TTL to 10 TTL
Start-up time	$t_s$	-	10 ms max.

#### Note

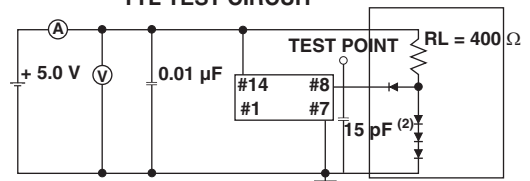
<sup>(1)</sup> Include: 25 °C tolerance, operating temperature range, input voltage change, aging, load change, shock and vibration

### DIMENSIONS in inches [millimeters]



PIN	CONNECTION
#1	N.C
#7	GND
#8	OUTPUT
#14	$V_{DD}$

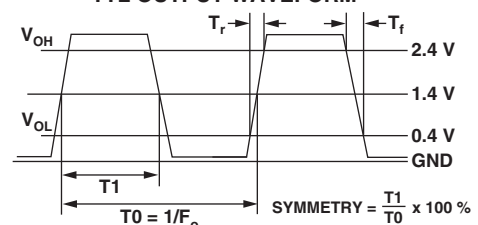
#### TTL TEST CIRCUIT



Note

<sup>(2)</sup> Includes Stray and Probe Capacitance

#### TTL OUTPUT WAVEFORM





## ORDERING INFORMATION

<b>XO-53</b>	<b>B</b>	<b>R</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) standard	OTR blank = 0 °C to + 70 °C R = - 40 °C to + 85 °C	FREQUENCY/MHz	JEDEC LEAD (Pb)-FREE standard

## GLOBAL PART NUMBER

<b>X</b>	<b>O</b>	<b>5</b>	<b>3</b>	<b>C</b>	<b>T</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>4</b>	<b>0</b>	<b>M</b>
MODEL				FREQUENCY STABILITY	OTR	PACKAGE CODE	OPTIONS		FREQUENCY		

## GLOBAL PART NUMBERING

<b>X</b>	<b>O</b>	<b>5</b>	<b>2</b>	<b>C</b>	<b>T</b>	<b>E</b>	<b>L</b>	<b>N</b>	<b>A</b>	<b>4</b>	<b>0</b>	<b>M</b>
<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:	M2803XXXXX (part number)
Line 2:	XX.XXXXM (frequency)
Line 3:	yywwwv (date/factory code)



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