

## CLOCK OSCILLATORS

TTL / HCMOS, TRISTATE

Combine state-of-the-art, thick film hybrid technology with precision quartz oscillators to achieve unsurpassed qualities of small size, cost, high reliability and frequency accuracy.

The crystal clock oscillator is composed of a crystal resonator and an oscillator circuit which is made by the hybrid IC technique. So, the oscillator itself is the perfect stable oscillator. This technique and process are entirely IC's one, so you can expect high reliability on it.

### Standard Specifications

item	Tri-State																
model	KXO-410																
package	DIL 8																
frequency range	0,5 ~ 100 MHz																
frequency stability	standard ± 100 ppm available ± 25 ppm ~ ± 100 ppm																
storage temperature range	-55 °C ~ +125 °C																
operating temperature range	standard -20 °C ~ + 70 °C available -40 °C ~ + 85 °C (=KXO-415)																
symmetry	standard 60/40% (+1/2V <sub>DD</sub> ) available 55/45%																
rise and fall time max.	10 ns 0.5 ~ 25 MHz 6 ns 25.1 ~ 70 MHz 4 ns 70.1 ~ 100 MHz																
"0" level (max.)	+0.5V (10%V <sub>DD</sub> )																
"1" level (min.)	+4.5V (90%V <sub>DD</sub> )																
input voltage	+5.0VDC ± 10%																
input current max.	20mA 0.5 ~ 20MHz 40mA 20.1 ~ 70MHz 60mA 70.1 ~ 100MHz																
output load	1 - 8TTL or CL = 50pF (TYP)																
logic family	TTL or HCMOS compatible																
test circuit	fig. 3, 4																
pin connection	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>PIN</th> <th colspan="2">CONNECTION</th> </tr> </thead> <tbody> <tr> <td>#1 (#1)</td> <td>„L“ (OV)</td> <td>„H“ (+5V) or OPEN</td> </tr> <tr> <td>#7 (#4)</td> <td colspan="2">GND</td> </tr> <tr> <td>#8 (#5)</td> <td>Z</td> <td>OUTPUT</td> </tr> <tr> <td>#14 (#8)</td> <td colspan="2">Vcc</td> </tr> </tbody> </table>		PIN	CONNECTION		#1 (#1)	„L“ (OV)	„H“ (+5V) or OPEN	#7 (#4)	GND		#8 (#5)	Z	OUTPUT	#14 (#8)	Vcc	
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lead-free	started from date code May, 2005																
packing unit	40 pcs.																
order no.	12.91500-12.91999																

Z: high impedance

**Enable/Disable Phase Delay Time 100 ns max.**

