



## 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 $\pm 100$ ppm available $\pm 25$ ppm $\sim \pm 100$ 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 $\pm 10\%$															
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"> <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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RoHS	started from date corde May, 2005															
packing unit	40 pcs.															
part no.	12.91500-12.91999															

Z: high impedance **Enable/Disable Phase Delay Time 100 ns max.**

