

7 x 5mm Low Power Consumption Clock Oscillator

FEATURES

- Industry-standard 7.0mm x 5.0mm package
- Frequency Range 10MHz to 50MHz
- Low supply current <1.7mA at 1.8V supply
- Supply voltage range, 1.8V, 2.5V or 3.3Volts
- Tristate function to conserve power

DESCRIPTION

XOK91 oscillators are ideal for battery operated portable or hand-held consumer electronic devices where small size and low supply current consumption is essential. A XOK53 oscillator at 27MHz and 1.8 Volts supply consumes less than 1.7mA in operating mode and less than 2 micro Amps in disabled mode. The oscillator is available with supply voltage at 1.8, 2.5 or 3.3 Volts.

SPECIFICATION

Frequency Range:	10.0MHz to 50.0MHz
Frequency Stability	
Commercial:	$\pm 25\text{ppm}$ to $\pm 100\text{ppm}$ 0° to $+70^\circ\text{C}$
Industrial:	$\pm 25\text{ppm}$ to $\pm 100\text{ppm}$ -40° to $+85^\circ\text{C}$
Output Logic:	HCMOS
Rise/Fall Time:	4ns typical (10% to 90%Vdd)
Fanout:	12mA typical (+3.0V)
Symmetry:	45% minimum, 55% maximum
Start-up Time:	10ms typical (Vdd reaches 1.62V)
Load:	15pF
Voltage Sensitivity:	$\pm 0.8\text{ppm}$ typical (10%Vdd variation)
Period Jitter (RMS)	2.1ps typical with capacitive decoupling between Vdd and Gnd.

Supply Voltage Dependant Parameters	Supply Voltage ($\pm 10\%$)		
	+1.8V	+2.5V	+3.3V
Output Voltage HIGH '1':	+1.40Vmin.	+2.0Vmin.	+2.4Vmin.
Output Voltage LOW '0':	+0.2Vmax.	+0.3Vmax.	+0.4Vmax.
Current Consumption mA typical	10.000MHz	0.66mA	0.96mA
	13.500MHz	0.88mA	1.28mA
	16.000MHz	1.05mA	1.51mA
	20.945MHz	1.34mA	1.86mA
	25.000MHz	1.54mA	2.17mA
	27.000MHz	1.69mA	2.35mA
	30.000MHz	1.93mA	2.74mA
	38.000MHz	2.27mA	3.26mA
	50.000MHz	2.60mA	3.90mA

Tristate (Pad 1 grounded): 2uA typical 4uA max. (oscillator is off)

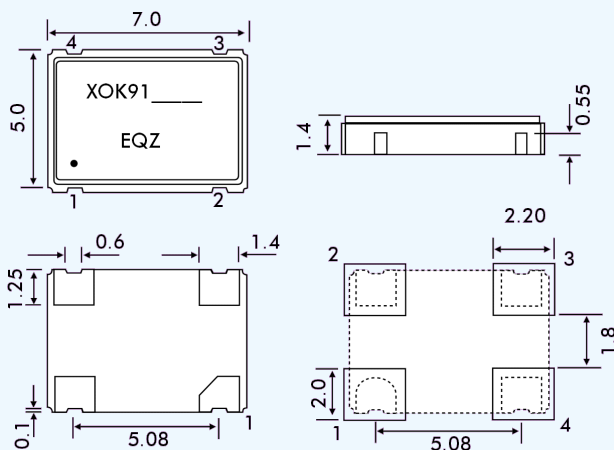
PART NUMBERING

Example: **27.000MHz XOK91050UCTC**

Frequency	27.000MHz
Series Designation	XOK91
Stability	050 = $\pm 50\text{ppm}$ 100 = $\pm 100\text{ppm}$ 025 = $\pm 25\text{ppm}$
Output Universal	
Operating Temp. Range	C = Commercial ($0^\circ\sim 70^\circ\text{C}$) I = Industrial ($-40^\circ\sim +85^\circ\text{C}$)
Tristate Function	
Supply Voltage	A = 3.3 Volts B = 2.5 Volts C = 1.8 Volts

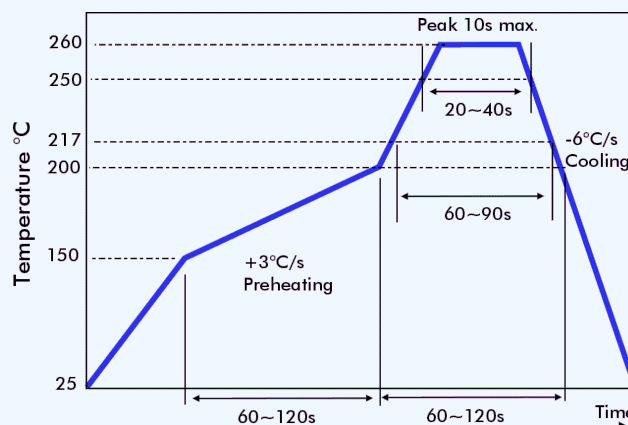


OUTLINE & DIMENSIONS



Pad Connections
 1 Enable/Disable
 2 Ground
 3 Output
 4 Supply Voltage

SOLDER TEMPERATURE PROFILE



PHASE NOISE

Offset	100Hz	1kHz	10kHz	100kHz	1MHz
dBc/Hz	-80	-110	-130	-138	-145

NOTES

Pad 1 Options:	Pad 1 connected to ground, output disabled No connection/Logic HIGH, output enabled Disable time 10ms typical Enable time 10ms typical
Ageing:	$\pm 5\text{ppm}$ per year max.
ESD Protection:	2000V max., human body model
Packaging:	16mm tape, 8mm pitch. 1000 pieces/reel