

### XOPL53 SERIES Low Jitter 5mm x 3.5mm SMD Programmable Oscillators

#### DESCRIPTION

The Euroquartz range of factory programmable oscillators provide custom frequency and specification oscillators within very short lead times. The parts are very reliable in use and have stabilities from  $\pm 25\text{ppm}$  over  $-40^\circ$  to  $85^\circ\text{C}$ . In addition to the stability over operating temperature range customers may also choose from supply voltages of 2.7, 3.3 and 5.0 Volts, Enable/Disable or Power Down functions and output synchronous or asynchronous.

#### FEATURES

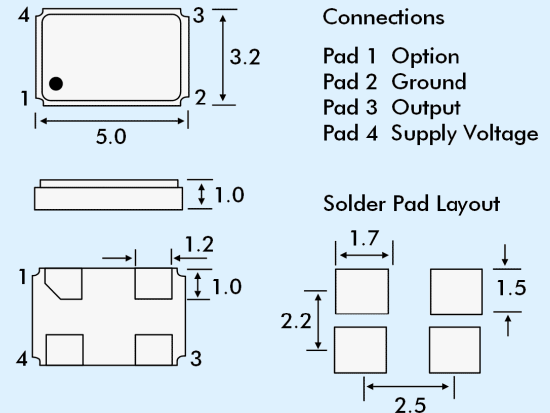
- Very quick delivery available
- Micro-miniature 5mm x 3.2mm SMD package
- Frequency range 1MHz to 160MHz
- Ultra low jitter @ 1 million samples
- Supply Voltages 2.7 Volts, 3.3 Volts or 5.0 Volts
- Enable/Disable or Power Down options

#### GENERAL SPECIFICATION

<b>Package Type:</b>	SMD, ceramic, seam-welded lid	
<b>Frequency Range</b>		
<b>5.0 Volt Supply:</b>	1.0MHz to 160.0MHz	
<b>3.3 Volt Supply:</b>	1.0MHz to 160.0MHz	
<b>2.7 Volt Supply:</b>	1.0MHz to 160.0MHz	
<b>Frequency Stability*:</b>	$\pm 25\text{ppm}$ to $\pm 100\text{ppm}$ (over operating temperature range)	
<b>Operating Temperature Range</b>		
<b>Choice of three ranges:</b>	0° ~ +70°C	Part code: 'C'
	-20° ~ +70°C	Part code: 'D'
	-40° ~ +85°C	Part code: 'I'
<b>Storage Temperature Range:</b>	-55° to +125°C	
<b>Ageing:</b>	$\pm 5\text{ppm/year}$ maximum ( $T_a=25^\circ\text{C}$ , $V_{dd}=2.7\text{V}$ , 3.3V or 5.0V)	
<b>Packaging:</b>	Bulk pack or tubed	
<b>Output Levels:</b>	TTL or CMOS	
<b>Maximum Output Loads</b>		
< 40MHz:	30pF (See note opposite)	
> 40MHz:	15pF (See note opposite)	
<b>Duty Cycle</b>		
<b>CMOS &lt; 40MHz:</b>	45/55% maximum	
<b>CMOS &gt; 40MHz:</b>	40/60% maximum	
<b>Output Clock Rise/Fall Times:</b>	4ns maximum	
<b>Power Supply Current:</b>	25mA (unloaded)	
<b>Standby Current:</b>	10mA typical 50mA maximum	
<b>Start-up Time:</b>	10ms maximum (from power-on)	
<b>Power Down Delay Time</b>		
<b>Synchronous:</b>	T/2ns typical, T+10ns maximum	
<b>Asynchronous:</b>	10ns typical, 15ns maximum	
<b>Output Disable Time</b>		
<b>Synchronous:</b>	T/2ns typical, T+10ns maximum	
<b>Asynchronous:</b>	10ns typical, 15ns maximum (T = frequency period)	
<b>Output Enable Time:</b>	100ns maximum	
<b>Period Jitter S, 1MHz~133MHz:</b>	8ps typical, 99ps maximum	
<b>Period Jitter Peak to Peak</b>		
< 33.0MHz:	65ps typical, 99ps maximum	
33MHz~133MHz:	65ps typical, 80ps maximum	

\* The frequency stability parameter is an inclusive figure and includes adjustment tolerance at 25°C, stability over operating temperature range, variations due to load change  $\pm 10\%$ , supply voltage change  $\pm 10\%$ , first year ageing, shock and vibration.

#### OUTLINE & DIMENSIONS



#### OPERATING LOAD CONDITIONS

<b>Maximum Capacitive Load TTL</b>		
<b>5.0 Volt Supply</b>		
1.0MHz ~ 40MHz:	50pF	
40.1MHz ~ 133MHz:	25pF	
<b>Maximum Capacitive Load CMOS</b>		
<b>5.0 Volt Supply</b>		
1.0MHz ~ 66MHz:	50pF	
66.1MHz ~ 133MHz:	25pF	
<b>3.3 Volt/2.7 Volt Supply</b>		
1.0MHz ~ 40MHz:	30pF	
40.1MHz ~ 100MHz:	15pF	

#### PRODUCT SELECTION

Model Number	Frequency Stability (ppm)	Operating Temperature Range
XOPL53100UC	$\pm 100$	0° ~ +70°
XOPL53050UC	$\pm 50$	0° ~ +70°
XOPL53025UC	$\pm 25$	0° ~ +70°
XOPL53100UD	$\pm 100$	-20° ~ +70°
XOPL53050UD	$\pm 50$	-20° ~ +70°
XOPL53025UD	$\pm 25$	-20° ~ +70°
XOPL53100UI	$\pm 100$	-40° ~ +85°
XOPL53050UI	$\pm 50$	-40° ~ +85°
XOPL53025UI	$\pm 25$	-40° ~ +85°

#### PART NUMBER GENERATION

Frequency	Model No.	Output Option	Supply Voltage
Nominal Frequency (MHz)	See table above	T = Tristate (Enable/Disable) P = Power Down	Blank = 5.0 Volts A = 3.3 Volts B = 2.7 Volts

**EXAMPLE:** 24.8920MHz XOPL53050UDTA

Frequency = 24.8920MHz, XOPL53 package,  $\pm 50\text{ppm}$   $-20^\circ \sim +70^\circ\text{C}$ , Tristate, supply voltage 3.3 Volts

#### SYNCHRONOUS/ASYNCHRONOUS

By default oscillators with Enable/Disable or Power Down functions are supplied ASYNCHRONOUS. If SYNCHRONOUS operation is required append 'SYNC' to the part number