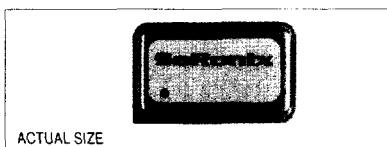


### Technical Data

### SEL2400 / SEL3400 Series



#### Description

A crystal controlled, high frequency, highly stable oscillator, compatible with Motorola 10KH, 10KE or 100LVE logic families. SaRonix proprietary fundamental high frequency sealed crystals available for exceptional stability and reliability. The output can be disabled and wired-OR for testing or combining multiple clocks. Open emitter output allows the user to select the load termination to optimize performance. Complementary outputs are available.\*

#### Applications & Features

- Frequencies up to 250 MHz including SONET/ATM/SDH 155.52 MHz
- Gigabit Ethernet
- Fibre Channel Hubs/Routers
- Ideal for high resolution graphics & imaging applications
- Provides 10KH and 10KE (Motorola ECLinPS) compatible outputs
- 3.3V PECL versions are LVDS compatible
- Disable/wired-OR output feature and complementary output are available
- Superior stability with AT-cut crystal performance compared to SAW technology
- Fundamental or overtone crystal operation results in superior jitter characteristics over PLL implementations
- Standard 0.200" high package
- Surface mountable gull wing version available

\*For internal termination contact factory.

<b>Frequency Range:</b>	7 MHz to 250 MHz
<b>Frequency Stability:</b>	±20, ±25, ±50 or ±100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, aging, shock and vibration.
<b>Temperature Range:</b>	
Operating:	0 to +70°C or -40 to +85°C
Storage:	-55 to +125°C
<b>Supply Voltage:</b>	5.0V or -5.2V, 3.3V PECL
<b>Supply Current:</b>	
SEL34xx:	70mA typ, 100mA max, 75mA max @ 3.3V
SEL24xx:	48mA typ, 80mA max, 65mA max @ 3.3V
<b>Output Drive:</b>	
Symmetry:	45/55% max @ V <sub>BB</sub> or Complementary Outputs Crossing
Rise & Fall Times:	1ns typ, 3ns max 20% to 80% for 10KH Logic 350ps typ, 550ps max 20% to 80% for 10KE Logic
Logic 0:	V <sub>CC</sub> -1.595 max, 0 to +70°C V <sub>CC</sub> -1.595 max, -40 to +85°C
Logic 1:	V <sub>CC</sub> -1.02 min, 0 to +70°C V <sub>CC</sub> -1.08 min, -40 to +85°C
Load:	50Ω to V <sub>CC</sub> -2V
Jitter:	3.5ps max RMS period jitter, 1ps max 1σ cycle-to-cycle jitter

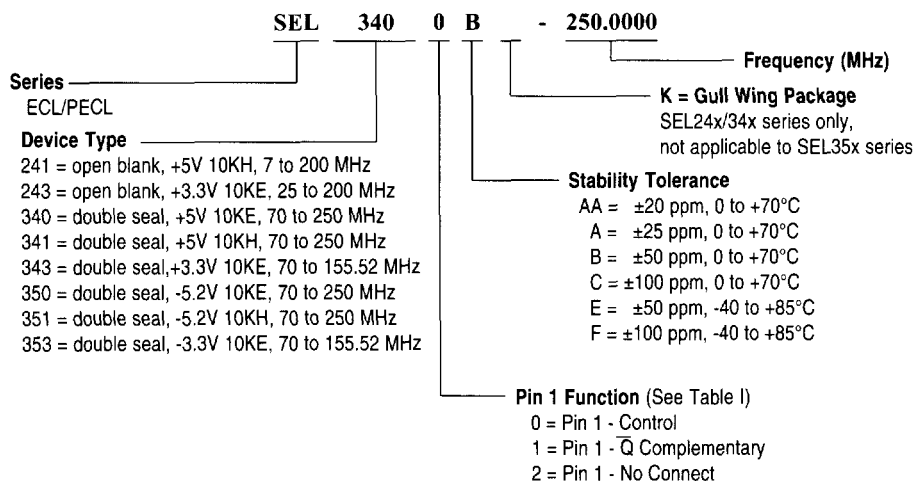
#### Mechanical:

Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-202, Method 211, Conditions A & C
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition A, B or C ( I or J for Gull Wing on SEL34xx )

#### Environmental:

Gross Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

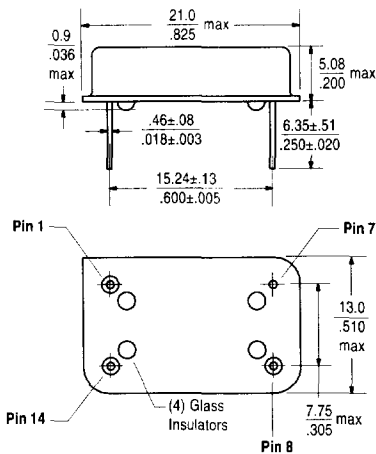
#### Part Numbering Guide



### Technical Data

### SEL2400 / SEL3400 Series

#### Package Details

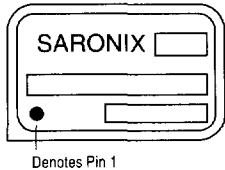


#### Pin Functions:

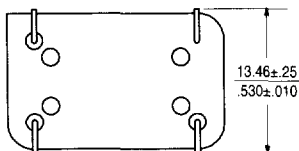
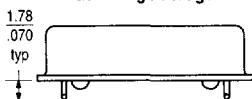
Pin 1: $\bar{Q}$ SELxxx1 E/D SELxxx0 N/C SELxxx2	Pin 7: Case VEE SELx4xx Vcc SELx5xx
Pin 14: VCC SELx4xx VEE SELx5xx	Pin 8: Q

#### Marking Format\*\*

Includes Date Code, Frequency, Model



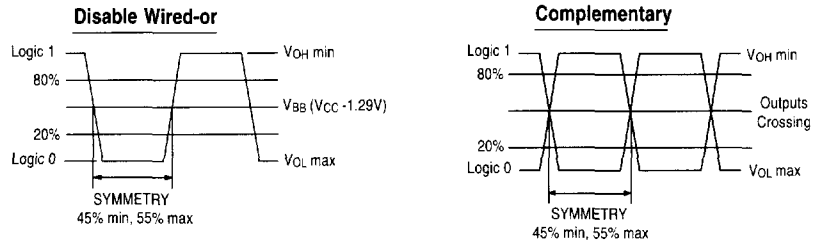
#### Gull Wing Package



Scale: None (Dimensions in mm/inches)

\*\* Exact location of items may vary

#### Output Waveforms



#### Enable Function and Supply Options

Pin 1 $\bar{EN}$	Pin 8
Logic 0	Clock Output
Logic 1	Logic 0

Enable/Disable Propagation Delay:

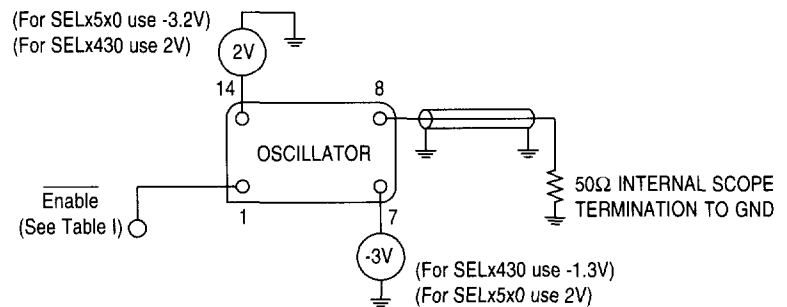
10K:  $((1/f)/2) + 250ps$  max  
10KH:  $((1/f)/2) + 2ns$  max

Device Type	Pin 7 (Case)*	Pin 14
SELx4xx	VEE 0V (or VEE -5V [-3.3V 10KE])	VCC +5V (+3.3V 10KE) (or VCC 0V)
SELx5xx	VCC 0V (or VCC +5V [+3.3V 10KE])	VEE -5V (-3.3V 10KE) (or VEE 0V)

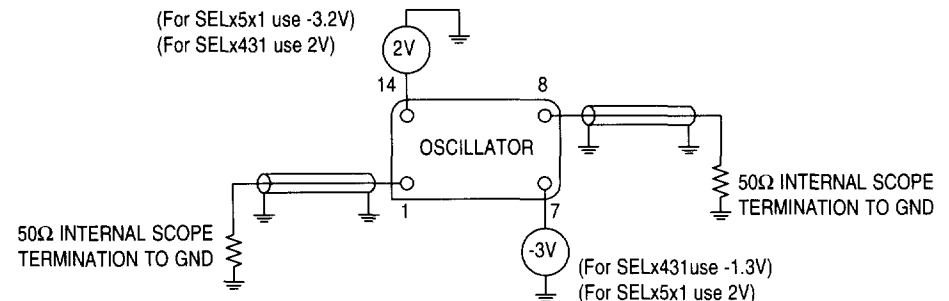
\*Pin 14 connected to case available, please contact SaRonix.

#### Test Circuits

##### SELx4x0



##### SELx4x1



All specifications are subject to change without notice.