



CMOS SC-1420 Series

Description

The **SC-1420 Series** of quartz crystal oscillators provide enable/disable 3-state CMOS compatible signals for bus connected systems. Supplying Pin 1 of the SC-1420 units with a logic "1" or open enables its Pin 3 output. In the disable mode, Pin 3 presents a high impedance to the load.

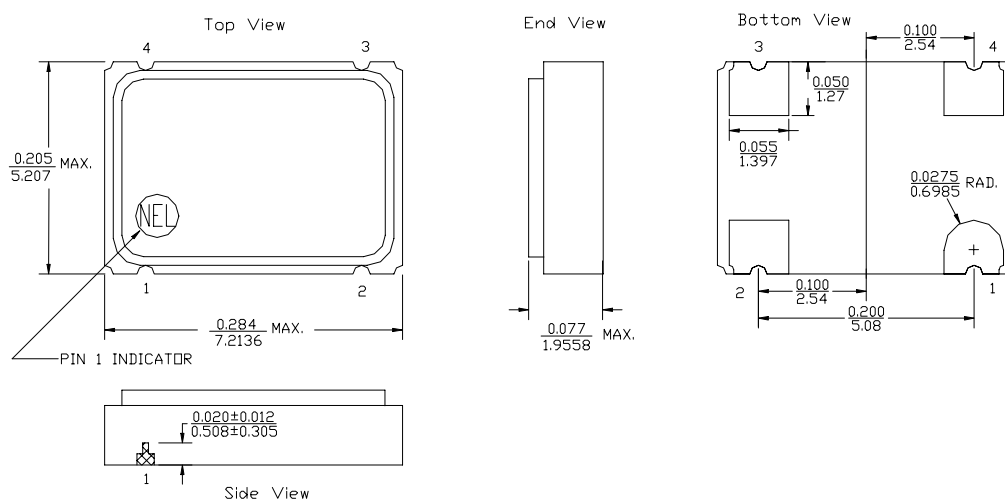
Features

- Wide frequency range—1.0MHz to 80.0MHz
- User specified tolerance available
- Will withstand vapor phase temperatures of 253°C for 4 minutes maximum
- Space-saving alternative to discrete component oscillators
- High shock resistance, to 1000g
- Low Jitter
- No internal PLL avoids cascading PLL problems
- Metal lid electrically connects to ground to reduce EMI
- Gold plated pads

Electrical Connection

Pin Connection

- | | |
|---|-----------------|
| 1 | Enable/Disable |
| 2 | Ground |
| 3 | Output |
| 4 | V _{DD} |



ALL DIMENSIONS: $\frac{\text{IN}}{\text{mm}}$

All tolerances are ±0.005 inches (±0.127 mm) unless otherwise specified.



**FREQUENCY
CONTROLS, INC.**

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SC-1420 Series Continued
CMOS

Rev. E

Operating Conditions and Output Characteristics**Electrical Characteristics**

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	1.0MHz	-----	80.0MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	V_{OL}	@ 600 μ A	-----	-----	0.2V
Logic 1	V_{OH}	@ 600 μ A	$V_{DD}-0.2V$	-----	-----
Rise & Fall Time	$t_{r,f}$	10-90% V_O	-----	-----	8.0 ns
Jitter, RMS ⁽²⁾	-----	Overtone	-----	-----	5 psec
		Fundamental	-----	-----	8 psec
T_{pz}	-----	-----	-----	-----	25 ns
Enable Voltage	-----	-----	2.0V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.8V
Frequency Stability ⁽¹⁾	dF/F	Overall conditions including: voltage, calibration, temp., 10 year aging, shock, vibration	-100ppm	-----	+100ppm

General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage ⁽³⁾	V_{DD}	-----	4.75V	5.0V	5.25V
Supply Current	I_{DD}	No Load	0.0 mA	-----	40 mA
Output current	I_O	Low level Output Current	0.0 mA	-----	± 16.0 mA
Operating temperature	T_A	-----	0°C	-----	70°C
Storage temperature	T_S	-----	-55°C	-----	125°C
Power Dissipation	P_D	-----	-----	-----	210 mW
Lead temperature	T_L	Soldering, 10 sec.	-----	-----	300°C
Load	-----	-----	-----	-----	15pf
Start-up Time	t_s	20MHz or greater	-----	-----	10 ms
		Less than 20MHz	-----	-----	2 ms

Environmental and Mechanical Characteristics

Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	0.060" double amplitude 10 Hz to 55 Hz, 35g's 55Hz to 2000 Hz
Soldering Condition	300°C for 10 seconds
Hermetic Seal	Leak rate less than 1×10^{-8} atm.cc/sec

Footnotes:

- 1) Standard frequency stability ($\pm 20, \pm 25, \pm 50$ ppm & others available)
- 2) Jitter performance is frequency dependent. Please contact factory for full characterization.
- 3) External high frequency power supply decoupling required.

Creating a Part Number**SC - A142X - FREQ****Package Code**

SC 4 pad 5x7mm SMD

Tolerance/Performance

0 ± 100 ppm 0-70°C
 1 ± 50 ppm 0-70°C
 7 ± 25 ppm 0-70°C
 9 Customer Specific
 A ± 20 ppm 0-70°C
 B ± 50 ppm -40 to +85°C
 C ± 100 ppm -40 to +85°C

Input Voltage

Code	Specification
A	3.3V
	5V


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