

## CMOS AC-A1460 Series

### Description

The **AC-A1460 Series** of quartz crystal oscillators provide enable/disable 3-state CMOS compatible signals for bus connected systems. Supplying Pin 1 of the AC-A1460 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.

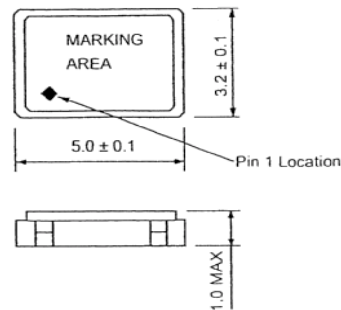
### Features

- Wide frequency range 0.5MHz to 156.250MHz
- User specified tolerance available
- Space-saving alternative to discrete component oscillators
- 3.3 Volt operation
- High shock resistance, to 1000g
- Low Jitter
- High Q Crystal actively tuned oscillator circuit
- No internal PLL avoids cascading PLL problems
- High frequencies due to proprietary design
- Metal lid electrically connects to ground to reduce EMI
- Gold plated pads
- RoHs Compliant, Lead Free Construction

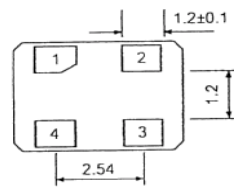
### Electrical Connection

Pin Connection

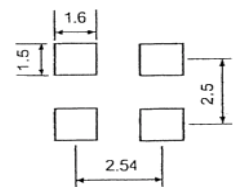
- |   |                 |
|---|-----------------|
| 1 | Enable/Disable  |
| 2 | Ground          |
| 3 | Output          |
| 4 | V <sub>DD</sub> |



All dimensions are typical unless otherwise specified



Recommended Solder Pad Layout



Dimensions in Millimeters

AC-A1460 Series Continued  
CMOS

Rev. -

### Operating Conditions and Output Characteristics

#### Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Frequency	-----	-----	0.5MHz	-----	156.250MHz
Duty Cycle	-----	@ $V_{DD}/2$	45/55%	-----	55/45%
Logic 0	$V_{OL}$	@ 600 $\mu$ A	-----	0.1V	0.2V
Logic 1	$V_{OH}$	@ 600 $\mu$ A	$V_{DD}-0.2V$	$V_{DD}-0.1V$	-----
Rise & Fall Time	tr,tf	10-90% $V_O$	-----	1.0 ns	2.0 ns
Jitter, RMS <sup>(2)</sup>	-----	Overtone	-----	-----	5 psec
$T_{pz}$	-----	-----	-----	-----	100 ns
Enable Voltage	-----	-----	2.0V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.8V
Frequency Stability <sup>(3)</sup>	dF/F	Overall conditions including: voltage, calibration, temp., 10 yr aging, shock, vibration	-100ppm	-----	+100ppm

#### General Characteristics

Parameter	Symbol	Conditions	Min	Typical	Max
Supply Voltage <sup>(1)</sup>	$V_{DD}$	-----	3.00V	3.3V	3.60V
Supply Current	$I_{DD}$	No Load	0.0 mA	40 mA	60 mA
Output current	$I_O$	Low level Output Current	0.0 mA	-----	$\pm 25.0$ mA
Operating temperature	$T_A$	-----	0°C	-----	70°C
Storage temperature	$T_S$	-----	-55°C	-----	125°C
Power Dissipation	$P_D$	-----	-----	-----	216 mW
Solder temperature	$T_L$	4 minutes	-----	-----	253°C
Load	-----	-----	-----	-----	15pf
Start-up Time	$t_s$	-----	-----	-----	10 ms

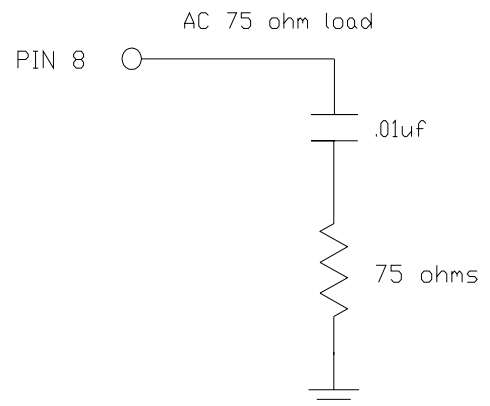
#### Environmental and Mechanical Characteristics

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
Hermetic Seal	Leak rate less than $1 \times 10^{-8}$ atm.cc/sec of helium

#### Footnotes:

- 1) External high frequency power supply decoupling required.
- 2) RMS jitter bandwidth of 12kHz to 20MHz.
- 3) Standard frequency stability (others available)

#### Test Load:



Creating a Part Number	
<b>AC - A146X - FREQ</b>	
<b>Package Code</b>	<b>Tolerance/Performance</b>
AC 4 pad 5x3.2mm SMD	0 $\pm 100$ ppm 0-70°C
	1 $\pm 50$ ppm 0-70°C
	7 $\pm 25$ ppm 0-70°C
<b>Input Voltage</b>	9 Customer Specific
Code Specification	A $\pm 20$ ppm 0-70°C
A 3.3V	B $\pm 50$ ppm -40 to +85°C
	C $\pm 100$ ppm -40 to +85°C