

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.

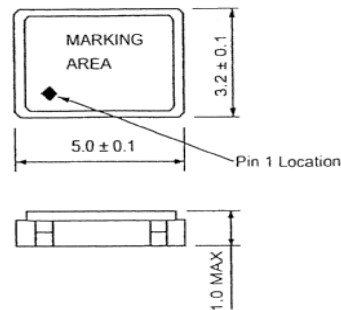
Features

- 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

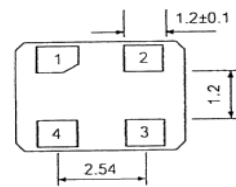
Electrical Connection

Pin Connection

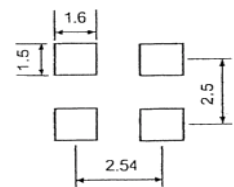
- | | |
|---|-----------------|
| 1 | Enable/Disable |
| 2 | Ground |
| 3 | Output |
| 4 | V _{DD} |



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 μ A	-----	0.1V	0.2V
Logic 1	V_{OH}	@ 600 μ 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 ⁽²⁾	-----	Overtone	-----	-----	5 psec
T_{pz}	-----	-----	-----	-----	100 ns
Enable Voltage	-----	-----	2.0V	-----	-----
Disable Voltage	-----	-----	-----	-----	0.8V
Frequency Stability ⁽³⁾	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 ⁽¹⁾	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	-----	± 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

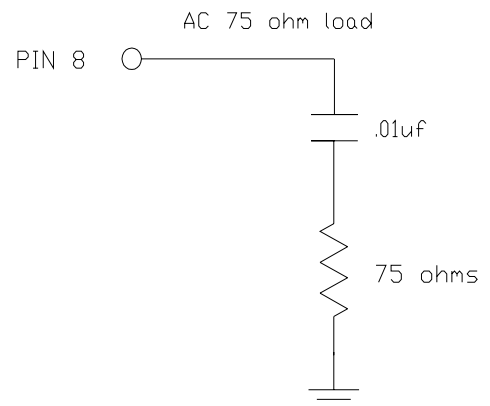
Environmental and Mechanical Characteristics

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 1×10^{-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	
AC - A146X - FREQ	
Package Code	Tolerance/Performance
AC 4 pad 5x3.2mm SMD	0 ± 100 ppm 0-70°C
	1 ± 50 ppm 0-70°C
	7 ± 25 ppm 0-70°C
	9 Customer Specific
Input Voltage	A ± 20 ppm 0-70°C
Code Specification	B ± 50 ppm -40 to +85°C
A 3.3V	C ± 100 ppm -40 to +85°C