



# Crystal Oscillators

## OCXO/7050 SMD/±100ppb/-20~+70°C

### 20.000MHz/3.3V/AS020000HA

### Description

AS020000HA is Oven Controlled Voltage Controlled Crystal Oscillator(OCVCXO) of the SMD 7 × 5mm package. OCXO Series can be output to 6-160MHz by Operating Voltage:3.3V(Oscillation) and 3.3V(Oven Heater:0.33w)in the heaterpower supply. As for the frequency stability level, ±100ppb is -20~+70°C possible.

### Feature

- 7 × 5 × 1.85mm SMD 16pin PKG
- Frequency stability:±100ppb/-20~+70°C/3.3V±5%
- Frequency short term stability:Warm up/10sec
- Phase noise:-90dBc/10Hz,-150dBc/1KHz, at 10MHz
- Phase Jitter:≤0.1psec RMS(10Hz to 10MHz)
- Excellent aging characteristics:±500ppb/Y/30days
- Power consumption:3mA(OSC),100mA(Heater)/3.3V
- Operating temperature : -20~+70°C,-40~+85°C

### Applications

- Mobilephone Base station
- Measuring instrument
- Exchanger
- High-end router

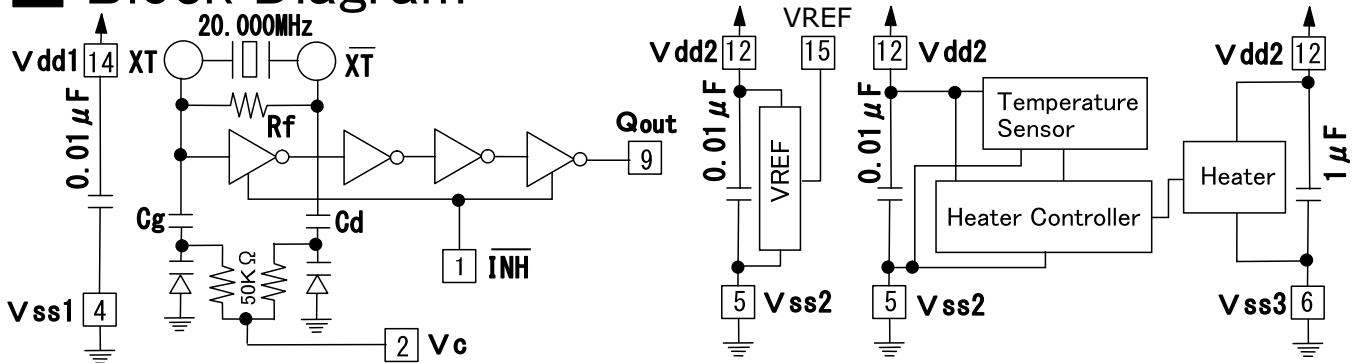
### Product Number: AS020000HA

AS	02000	O:Function Series	H:Package	A:Version
Compy Code	Frequency 20.000MHz (6~160MHz)	O:SMD OCVCXO	16Lead SMD:7 × 5 × 1.85mm	A:-20~70°C ±100ppb,3.3V (0.33W)

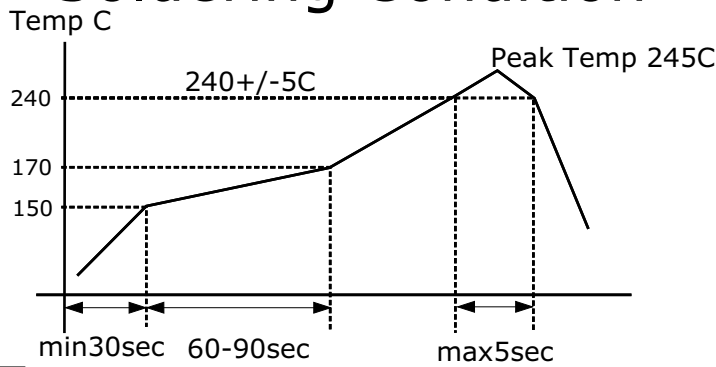
### Specifications

ITEMS	TYPE	AS020000HA
Output Frequency:		20.000000MHz
Frequency Stability		±100ppb: -20 to +70°C/Vdd=3.3V+/-5%
Initial frequency tolerance		±500ppb: Vc=1.65V/shipment
Initial supply voltage tolerance		±10ppb: Vdd=3.3V±5%
Initial load change tolerance		±10ppb: Vload:±5%
Initial aging tolerance/day		±5ppb: after 30 days of operation
Initial aging tolerance/year		±250ppb: after 30 days of operation
Warm-up time		10sec:to ±100ppb/final frequency/1 hour after/25°C
Phase Noise		Typ:-90dBc/10Hz,-120dBc/100Hz,-150dBc/1KHz at 10MHz
PhaseJitter		≤0.1psec RMS(1KHz to 20MHz)
Operating Temperature Range		-20 to +70°C
Storage Temperature Range		-40 to +85°C
Power SupplyVoltage/Oscillation		3.3V±5%
Power SupplyVoltage/Oven heater		3.3V±5%
Power Consumption/Oscillation(No load)		Typ:3.0mA/3.3V,Max:5.0mA/3.3V
Power Consumption/Oven Heater		Typ:100mA/3.3V,Max:250mA/3.3V
Input Level		Min:VIH :+0.9Vdd, Max:VIL :+0.1Vdd
Output Level/CMOS		Min:VOH:+0.9Vdd, Max:VOL:+0.1Vdd
Output Load		15pF
Output Rise/Fall Time		5nsec max(0.3 to 3.0V)/5nsec max(3.0 to 0.3V)
Assembly Temperature Range		Peak Temperature 240C +/- 5C for 5 sec max.Maximum Temperature 245C

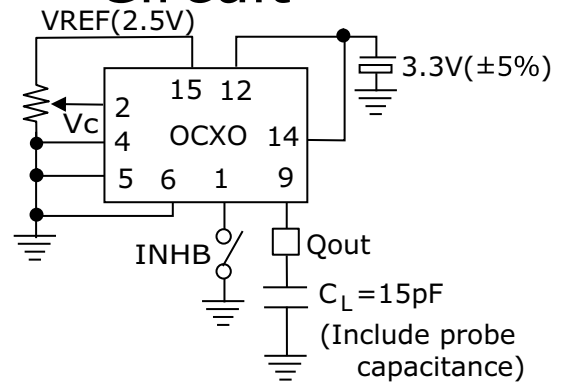
## Block Diagram



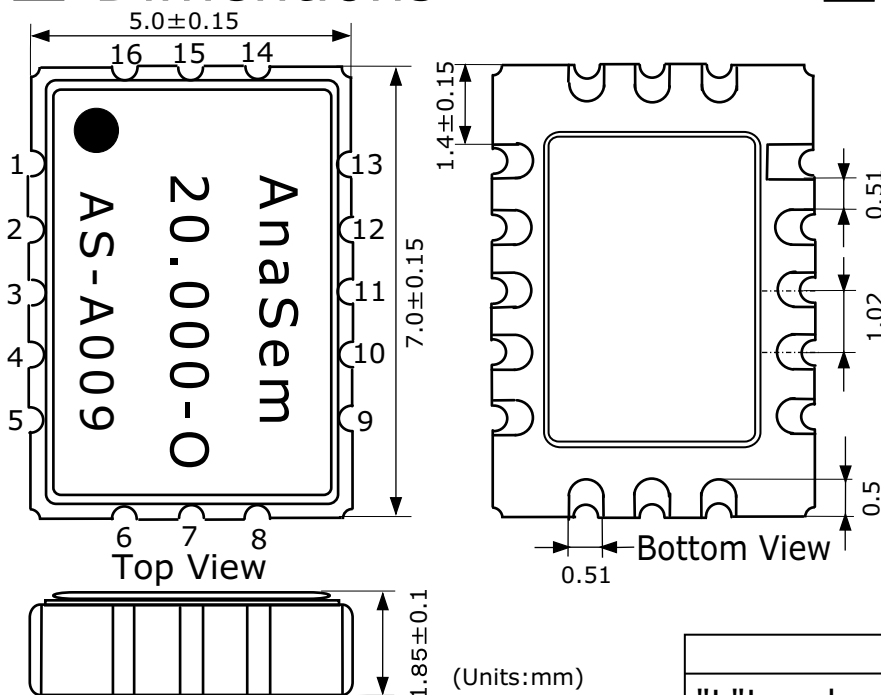
## Recomended Reflow Soldering Condition



## Measurement Circuit



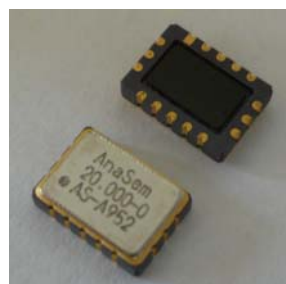
## Dimintions



## Pin Connections

1	INHB
2	Vc
3	Vcnt
4	Vss1(OSC)
5	Vss2(Tcnt)
6	Vss3(RGND)
7	NC
8	NC
9	Qout
10	NC
11	NC
12	Vdd2(Tcnt:3.3V)
13	NC
14	Vdd1(OSC:3.3V)
15	Vdd3(VREF:2.5V)
16	NC

## Package



/INHIBIT	
"L"Level	Open or "H"Level
High Impedance	Enable:Output

## AnaSem. InC

2-13-10 Maehara Nishi Funabashi Chiba Japan  
 TEL (047) 470-5810 FAX470-5825  
 Home Page: <http://www.anasem.co.jp>  
 e-mail: support@anasem.co.jp