

# OCO-M20AH

Through hole OCXO  
HCMOS

QuartzCom  
the communications company



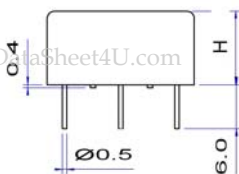
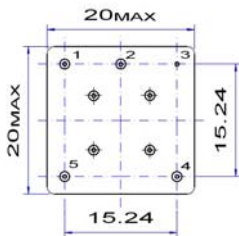
## Features

- Applications: CDMA, 3G, networking, instrumentation
- High frequency stability vs. temperature
- Wide operating temperature range: -40 up to +85 °C
- Low aging

Parameter	Specification	
	OCO-M20AH5	OCO-M20AH12
Frequency range	8.1920 ~ 20.0000 MHz	
Standard frequencies	10.00, 12.80, 13.00, 16.384 & 20.00 MHz	
Frequency stability vs. operating temperature range	$\leq \pm 3 \times 10^{-9}$	over -40 ~ +85 °C
	$\leq \pm 2 \times 10^{-9}$	over -20 ~ +70 °C
	$\leq \pm 1 \times 10^{-9}$	over -10 ~ +60 °C
vs. supply voltage change	$\leq \pm 5 \times 10^{-10}$	$\pm 5 \%$
vs. load change	$\leq \pm 5 \times 10^{-10}$	$\pm 5 \%$
vs. aging after 30 days of operation	$\leq \pm 3 \times 10^{-8}$	1 <sup>st</sup> year
Short term stability	$< 5 \times 10^{-12}$	Allan deviation per 1 s
Output waveform	HCMOS	$V_{OH} \geq 4.5 \text{ V}$ $V_{OL} \leq 0.5 \text{ V}$
Output load	10 k $\Omega$ / 30 pF	
Supply voltage	+5.0 V $\pm 5 \%$	+12 V $\pm 5 \%$
Steady-state current consumption @ +25 °C	< 400 mA	< 150 mA
Warm-up time	< 3 min	< $\pm 2 \times 10^{-8}$ @ +25 °C
Frequency pulling range	$> \pm 4 \times 10^{-7}$	positive slope
Vcontrol (Vc) via external voltage	0 ~ +4.5 V	0 ~ +5.0 V
Vcontrol (Vc) via external potentiometer	20 k $\Omega$	
Reference voltage output (Vref)	+4.5 V	+5.0 V
Phase noise @ 10 MHz carrier frequency & Vdc = 12 V	< -125 dBc/Hz	@ 10 Hz
	< -145 dBc/Hz	@ 100 Hz
	< -150 dBc/Hz	@ 1 kHz
	< -155 dBc/Hz	@ 10 kHz
Operating temperature range	-10 ~ +60 °C, -20 ~ +70 °C, -40 ~ +70 °C or -40 ~ +85 °C	
Storage temperature range	-55 ~ +85 °C	
Customer specifications on request		

## Environmental test

vibration	acceleration: 5 g; 10 Hz up to 200 Hz and down to 10 Hz; all 3 axes, 4.5 h/axis
shock	75 g, half-sine, 3 ms (3 shocks each, 6 directions)



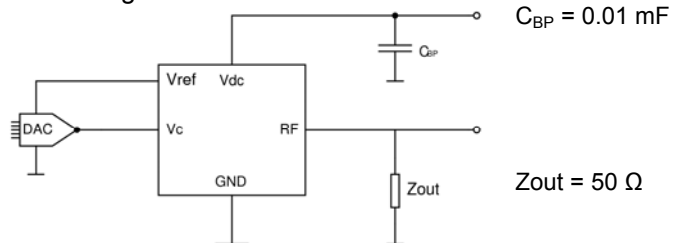
## Pin function

- # 1 Vdc
- # 2 RF output
- # 3 GND
- # 4 Vc
- # 5 Vref

Case height H = 12.7 mm



## Circuit diagram



2002/95/EC RoHS compliant

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