

# OCO-M36CES

Through hole OCXO  
Sine wave



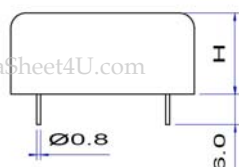
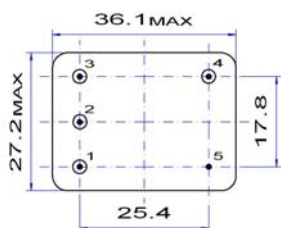
## Features

- Applications: CDMA, networking, instrumentation
- High frequency stability vs. temperature (up to  $\pm 7.5 \times 10^{-9}$ )
- Wide operating temperature range: -40 up to +85 °C

Parameter	Specification	
	OCO-M36CES5	OCO-M36CES12
Frequency range	10.0000 ~ 40.0000 MHz	
Standard frequencies	10.00, 12.80, 13.00, 15.36, 16.00, 16.384, 20.00, 26.00, 30.72, 32.00, 32.768 & 38.40 MHz	
Frequency stability vs. operating temperature range	$\leq \pm 2.0 \times 10^{-8}$	over -40 ~ +85 °C
	$\leq \pm 1.0 \times 10^{-8}$	over -20 ~ +70 °C
	$\leq \pm 7.5 \times 10^{-9}$	over -10 ~ +60 °C
vs. supply voltage change	$\leq \pm 5 \times 10^{-9}$	$\pm 5 \%$
vs. load change	$\leq \pm 5 \times 10^{-9}$	$\pm 5 \%$
vs. aging after 30 days of operation	$\leq \pm 3 \times 10^{-8}$	1 <sup>st</sup> year
Short term stability	$< 2 \times 10^{-11}$	Allan deviation per 1 s
Output waveform	sine wave	> 300 mV (rms)
Output load	50 $\Omega$	$\pm 5 \%$
Supply voltage	+5.0 V $\pm 5 \%$	+12 V $\pm 5 \%$
Steady-state current consumption @ +25 °C	< 200 mA	< 80 mA
Warm-up time	< 3 min	$< \pm 1 \times 10^{-7}$ @ +25 °C
Frequency pulling range	$> \pm 5 \times 10^{-7}$	positive slope
Vcontrol (Vc) via external potentiometer (20 k $\Omega$ )	0 ~ +4.5 V	0 ~ +5.0 V
Reference voltage output (Vref)	+4.5 V	+5.0 V
Phase noise @ 20 MHz carrier frequency	< -105 dBc/Hz	@ 10 Hz
	< -135 dBc/Hz	@ 100 Hz
	< -145 dBc/Hz	@ 1 kHz
	< -150 dBc/Hz	@ 10 kHz
Harmonics	< -30 dBc	
Operating temperature range	-10 ~ +60 °C, -20 ~ +70 °C, -40 ~ +70 °C or -40 ~ +85 °C	
Storage temperature range	-55 ~ +85 °C	
Case height (H)	16.0 mm	

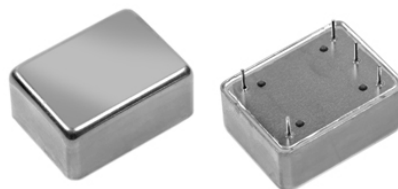
## Environmental test

vibration	acceleration: 5 g; 10 Hz up to 500 Hz and down to 10 Hz; all 3 axes, 4.5 h/axis	
shock	100 g, half-sine, 3 ms (3 shocks each, 6 directions)	

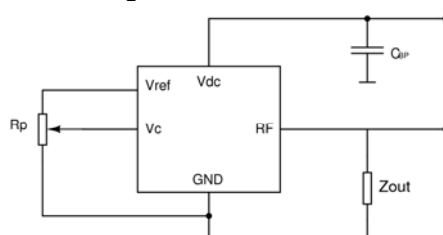


## Pin function

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



## Circuit diagram



$C_{BP} = 0.01 \text{ mF}$

$Z_{out} = 10 \text{ k}\Omega // 15 \text{ pF}$

2002/95/EC RoHS compliant

12 May. 10