

HCO36 Series



3.6 x 2.2mm, high temperature Clock oscillator unit

Wide operating temperature up to 210°C
 High shock and vibration resistant
 Land pattern is compatible with 3.2 x 2.5mm package size
 RoHS and REACH compliant

Applications
 Down hole drilling, Avionics, Geothermal equipment, Airborne equipments

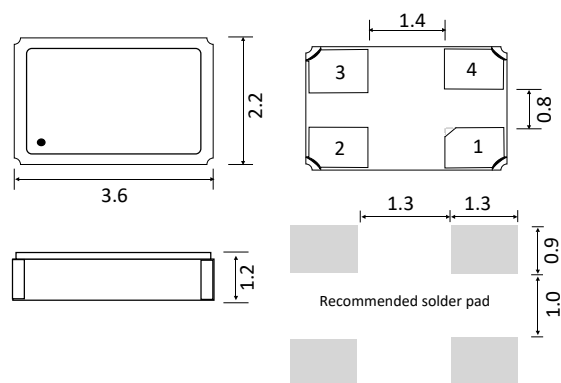
Parameters		Specification	Remarks
Frequency range	F_nom	10.0kHz ~ 60.0MHz	Table 1
Supply voltage	Vcc	2.5V, 3.3V, 5.0V	±5% , 47nF capacitor must be connected between GND and Vcc operable over 2.3 to 5.5V
Frequency stability over temperature range	F_stb	≤ ±100.0ppm over -55°C ~ +125°C	Includes adjustment at +25°C, long term aging 1,000h at Tmax ordered over supply voltage ±5% and over load min to max
		≤ ±150.0ppm over -55°C ~ +150°C	
		≤ ±300.0ppm over -55°C ~ +175°C	
		≤ ±400.0ppm over -55°C ~ +210°C	
Input current	Icc	Table 2	without load
Output type		HCMOS	
Duty cycle	Sym	40/ 60 %	
Rise & Fall time	Tr, Tf	≤ 150.0 n sec	For 32.768kHz, load 15pF, 20% to 80%
		≤ 7.0 n sec	For ≤ 20MHz, load 15pF, 20% to 80%
		≤ 3.0 n sec	For ≥ 20MHz, load 15pF, 10% to 90%
Level "0" & "1"		<0.4> Vcc - 0.5V	
Start-up time		< 5 msec	
Load min / max		3.0pF / 47.0pF	
Storage temperature range		-65°C ~ +125°C	
Vibration resistance survival		10 to 2,000Hz / 80g	
Shock resistance survival		10,000g /0.3ms/ ½ sine	
Tristate (Pad 1)		Pad 1 open → Enable oscillator output	-No power to E/D pad before Vcc is setting on -E/D option not available for f < 500kHz -E/D option on request only
		Pad 1 High → Enable oscillator output	
		Pad 1 low → Disable oscillator output	

4MHz	8MHz	10MHz	12MHz
16MHz	20MHz	24MHz	40MHz
50MHz	60MHz		
Please enquire for other frequencies			

Frequency	32kHz	< 10MHz	≤ 20MHz	>20MHz
Vcc = 2.5V	< 300µA	< 2mA	< 3mA	< 15mA
Vcc = 3.3V	< 1mA	< 4mA	< 5mA	< 20mA
Vcc = 5.0V	< 2mA	< 6mA	< 7mA	< 30mA

Reflow soldering	260°C / 10s max
Lids	Ceramic (Kovar for part with operating temp. -55°C ~ +210°C)
Termination	Au plated (standard), For tinned Ag/Cu/Sn please enquire

Dimensions (mm)



Pad 1	Tristate
Pad 2	GND
Pad 3	Output
Pad 4	Supply voltage Vcc

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Specification requirement							
ACT series	Frequency (MHz/kHz)	Frequency Stability over operating temperature (\pm ppm/ $^{\circ}$ C)	Supply voltage (V)	Tristate	Termination	Packaging	RoHS Code
HCO36	Example 32.768kHz 8.0MHz 14.7456MHz 40.0MHz	\pm 100ppm over -55 ~ +125 $^{\circ}$ C \pm 150ppm over -55 ~ +150 $^{\circ}$ C \pm 300ppm over -55 ~ +175 $^{\circ}$ C \pm 400ppm over -55 ~ +210 $^{\circ}$ C	2.5 V 3.3V 5.0V	Tristate YES/NO	Au plated (standard) Tinned (Ag/Cu/Sn)	Loose : 128pcs/tray Tape : min 250pcs available in 12mm tape	-PF
HCO36/8MHz/ \pm 100ppm over-55 ~ +125 $^{\circ}$ C/ 3.3V/Tristate/ Au plated/Loose							
A unique part number will be generated for each specification request. Example: HCO36-2000M-Cxxxx-PF							

Additional information

Drawing control: (Internal use only)
Commodity code: 854160 00 00
Issue number: N1
Date: 1/08/2019
Internal reference: M1