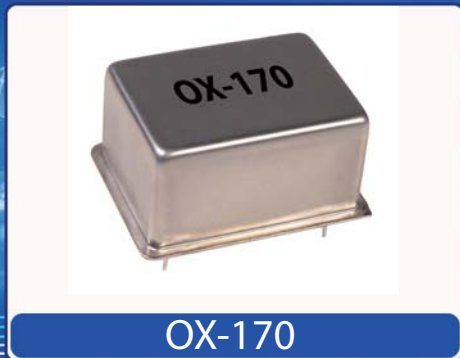


Helping Customers Innovate, Improve & Grow



**Features**

- Reflow Process Compatible
- AT-CUT and SC\_CUT Crystal Options
- Low Profile Compact Package

**Applications**

- Base stations
- Test equipment
- Synthesizers
- Military communication equipment
- Digital Switching

**Performance Specifications**

Frequency Stabilities <sup>1</sup> (AT-Cut Crystal-Standard - )						
Parameter	Min	Typical	Max	Units	Condition	Options <sup>5</sup>
vs. operating temperature range (referenced to +25°C)	-30		+30	ppb	0 to +70°C	
	-80		+80	ppb	-20 to +70°C	
	-100		+100	ppb	-20 to +70°C	
	-200		+200	ppb	-40 to +85°C	
Initial tolerance	-0.3		+0.3	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	-5		+5	ppb	V <sub>s</sub> ±5% static	
vs. load change	-5		+5	ppb	Load ±5% static	
vs. aging / day	-2		+2	ppb	after 30 days of operation	
vs. aging / year	-500		+500	ppb	after 30 days of operation	
vs. aging / year (following year)	-250		+250	ppb	after 30 days of operation	
Warm-up time			5	minutes	to ±100ppb of final frequency (1 hour reading) @ +25°C	
Frequency Stabilities <sup>1</sup> (SC-Cut Crystal-Option)						
vs. operating temperature range (referenced to +25°C)	-10		+10	ppb	0 to +70°C	
	-10		+10	ppb	-20 to +70°C	
	-20		+20	ppb	-20 to +70°C	
	-30		+30	ppb	-40 to +85°C	
Initial tolerance	-0.1		+0.1	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	-5		+5	ppb	V <sub>s</sub> ±5% static	
vs. load change	-5		+5	ppb	Load ±5% static	
vs. aging / day	-1		+1	ppb	after 30 days of operation	
vs. aging / year	-100		+100	ppb	after 30 days of operation	
vs. aging / year (following year)	-50		+50	ppb	after 30 days of operation	
Warm-up time			5	minutes	to ±100ppb of final frequency (1 hour reading) @ +25°C	

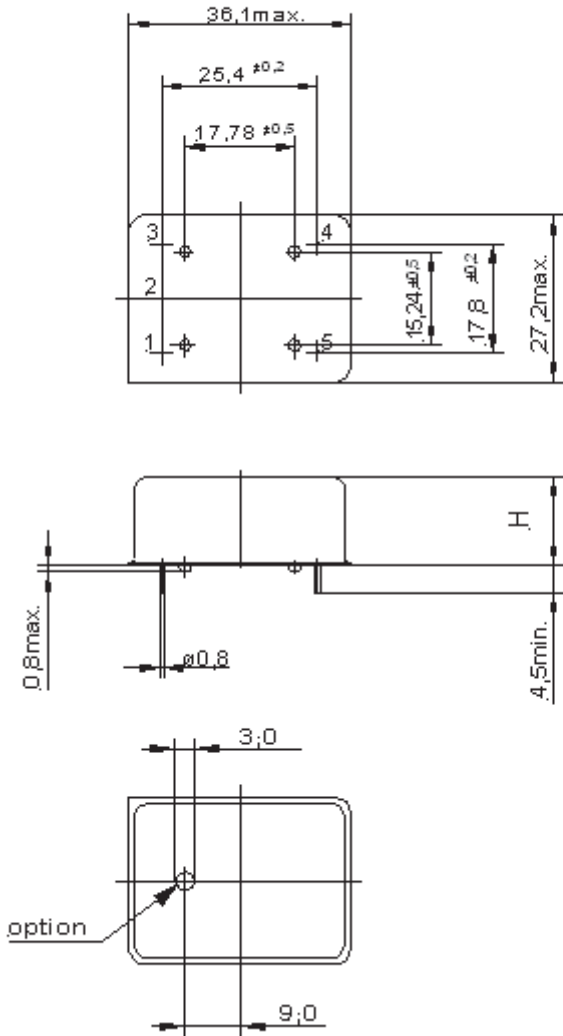
## Performance Specifications

Supply Voltage (Vs)						
Parameter	Min	Typical	Max	Units	Condition	
Supply voltage (standard)	3.135	3.3	3.465	VDC		
	4.75	5.0	5.25	VDC		
	11.4	12.0	12.6	VDC		
Power consumption			3.5	Watts	during warm-up	
			1.0	Watts	steady state @ +25°C	
RF Output						
Signal [standard]	HCMOS					
Load		15		pF		
Signal Level (Vol)			0.4	VDC	with Vs=3.3V and 15pF Load	
Signal Level (Vol)			0.5		with Vs=5.0V & 12V and 15pF Load	
Signal Level (Voh)	2.4			VDC	with Vs=3.3V and 15pF Load	
Signal Level (Voh)	3.5				with Vs=5.0V & 12V and 15pF Load	
Duty Cycle	45		55	%	@ (Voh-Vol)/2	
Signal	Sine Wave					
Load		50		Ω		
Output Power @3,3V	2	5	8	dBm	50 Ω load	
Putput Power @ 5.0V	5	8	11	dBm	50 Ω load	
Harmonics			-30	dBm	50 Ω load	
Frequency Tuning (EFC)						
Tuning Range	Fixed OCXO; No adjust				Option <sup>5</sup>	
Tuning Range	±3.0		±8	ppm		with AT cut crystal
	±0.75		±2.0	ppm		with SC cut crystal
Linearity	10%					
Tuning Slope	Positive					
Control Voltage Range	0.0	1.4	2.8	VDC	with Vs=3.3V	
	0.0	2.0	4.0		with Vs=5.0V	
	0.0	2.0	4.0	VDC	with Vs=12.0V	
Reference Voltage Output (Vref)						
Reference Voltage	2.75	2.8	2.85	VDC	with Vs = 3.3 VDC	
	3.92	4.0	4.08	VDC	with Vs = 5.0 VDC	
	4.9	5.0	5.1	VDC	with Vs =12 VDC	
Additional Parameters						
Phase Noise <sup>3</sup>			-90	dBc/Hz	1 Hz	@ 10MHz with SC Cut
			-120	dBc/Hz	10 Hz	
			-140	dBc/Hz	100 Hz	
			-145	dBc/Hz	1 kHz	
			-150	dBc/Hz	10 kHz	
Phase Noise <sup>3</sup>			-75	dBc/Hz	1 Hz	@ 10MHz with AT Cut
			-105	dBc/Hz	10 Hz	
			-130	dBc/Hz	100 Hz	
			-140	dBc/Hz	1 kHz	
			-150	dBc/Hz	10 kHz	
Weight			14	g		
Processing & Packing	Handling & Processing Note					

Absolute Maximum Ratings					
supply voltage (Vs)			6.5	V	with Vs=3.3 & 5.0 VDC
			15.0	V	with Vs= 12 VDC
Output Load			50	pF	
Operable Temperature Range	-55		+85	°C	
Storage Temperature Range	-55		+125	°C	

## Outline Drawing / Enclosure

G157

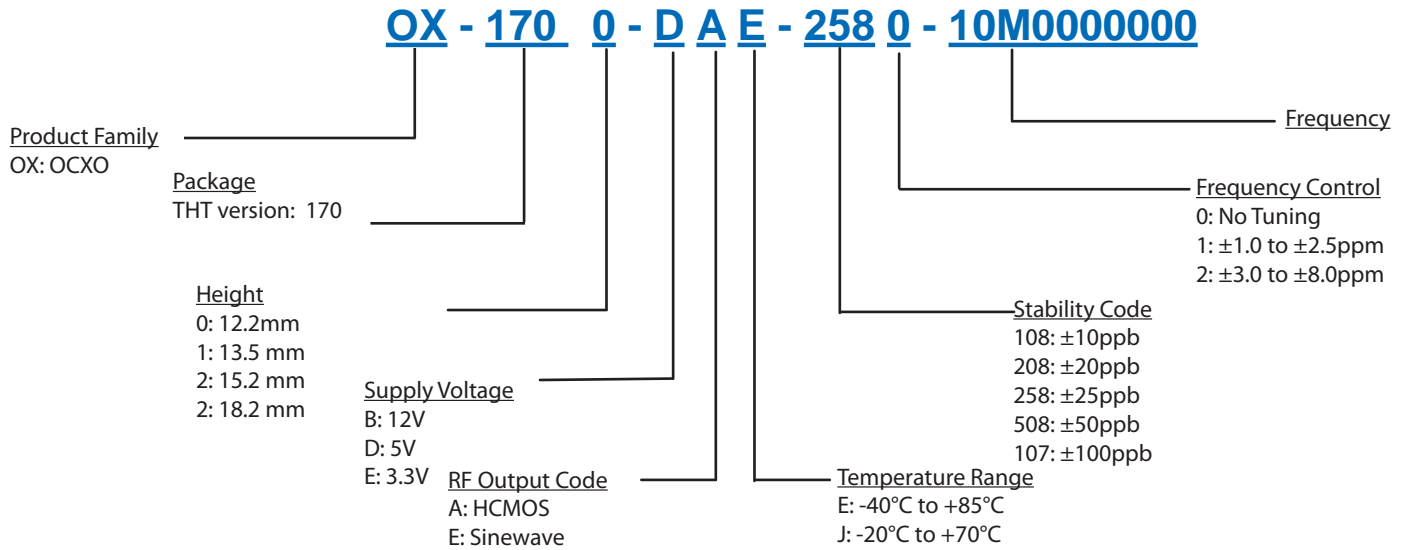


OX-170	
Height "H"	Pin Length "L"
12.2	4.5 mm min
13.5	4.5 mm min
15.2	4.5 mm min
18.2	4.5 mm min

Pin Connections	
1	Electronic Frequency Control Input (EFC)
2	Reference Voltage Option
3	Supply Voltage Input (VS)
4	RF Output
5	Ground (Case)

Dimensions in mm

## Ordering Information



**Notes:**

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

## For Additional Information, Please Contact

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