



Helping Customers Innovate, Improve & Grow



OX-170

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

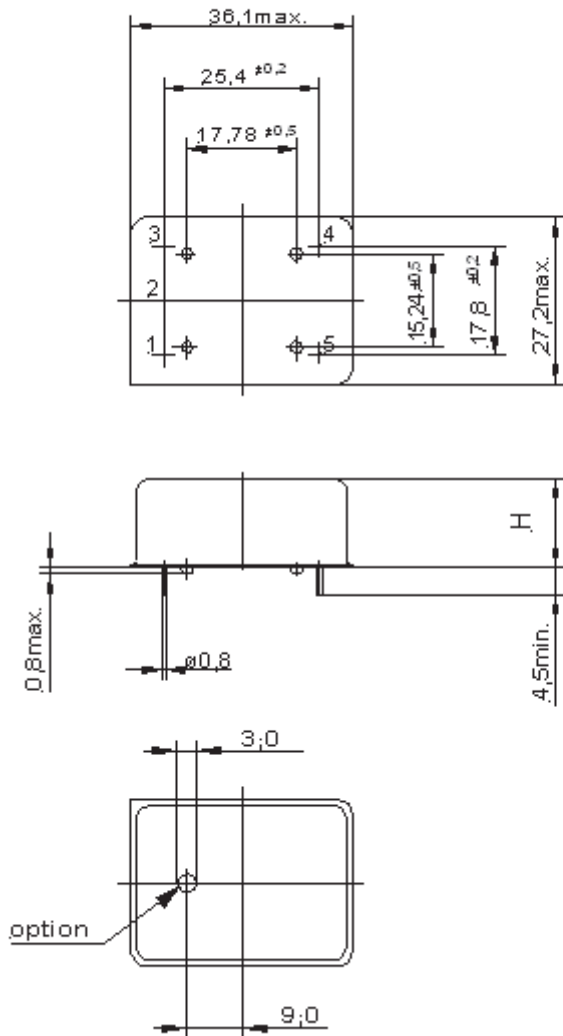
Performance Specifications

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 ⁵
Tuning Range	±3.0		±8	ppm	
	±0.75		±2.0	ppm	
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 ³			-90	dBc/Hz	1 Hz
			-120	dBc/Hz	10 Hz
			-140	dBc/Hz	100 Hz
			-145	dBc/Hz	1 kHz
			-150	dBc/Hz	10 kHz
Phase Noise ³			-75	dBc/Hz	1 Hz
			-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

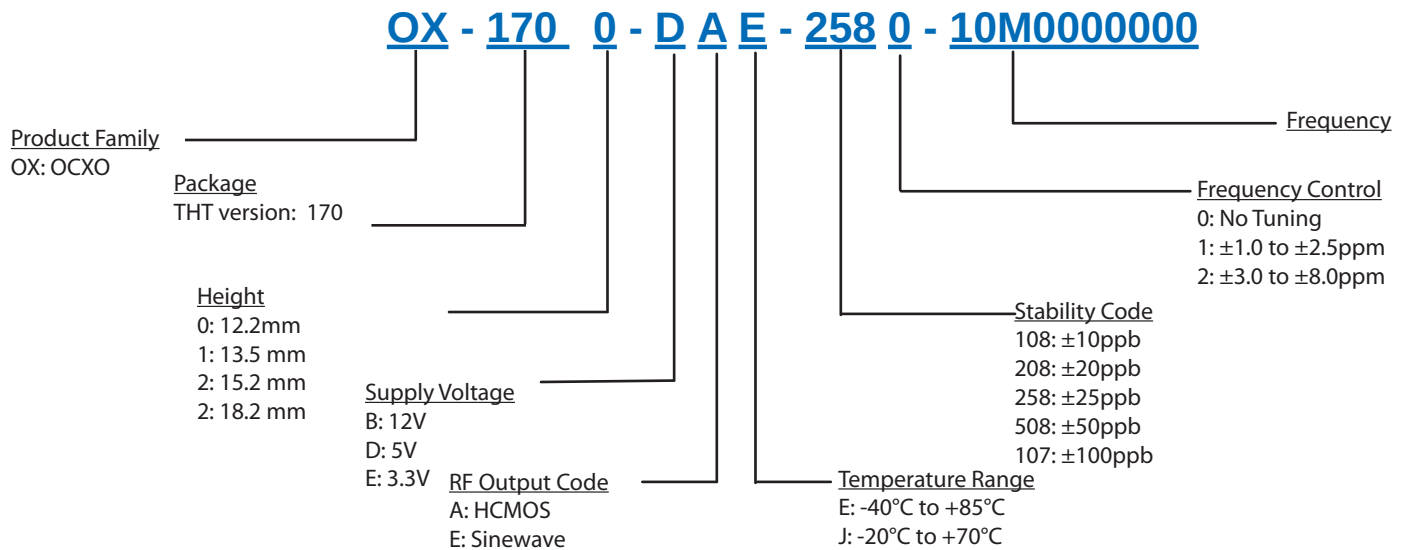
Height "H"	Pin Length "L"
12.2	4.5 mm min
13.5	4.5 mm min
15.2	4.5 mm min
18.2	4.5 mm min

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.

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