

Helping Customers Innovate, Improve & Grow



Features

- 4-Pin Dip
- Fast Warm-up
- Frequency Range: 80 MHz to 120 MHz
- Low g-sensitivity
- Low Phase Noise

Applications

- Base Stations
- Test Equipment
- Synthesizers
- Military Communication Equipment

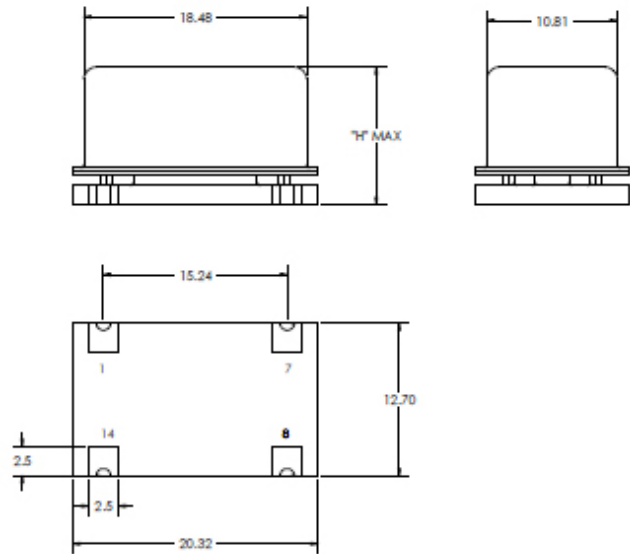
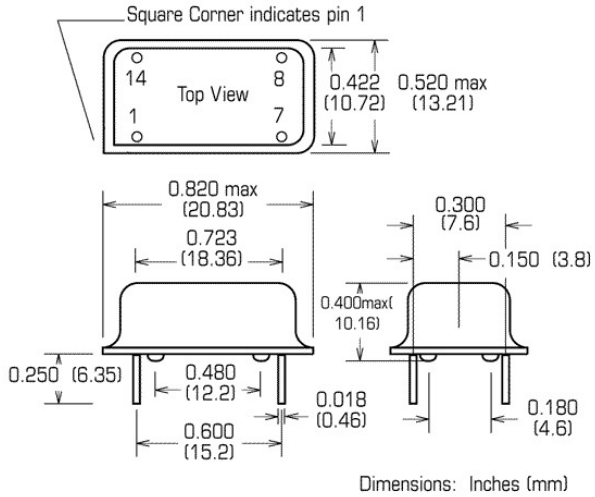
Performance Specifications

Frequency Stabilities ¹ (AT-Cut Crystal-Standard)					
Parameter	Min	Typical	Max	Unit	Condition
vs. operating temperature range (referenced to +25°C)	-200		+200	ppb	0 to +70°C
	-350		+350	ppb	-20 to +70°C
	-700		+700	ppb	-40 to +85°C
Initial tolerance vs. supply voltage change vs. load change vs. aging/day vs. aging/1st year	-0.5		+0.5	ppm	at time of shipment, nominal EFC V _s ±5% static Load ±5% static after 30 days of operation after 30 days of operation
	-100		+100	ppb	
	-10		+10	ppb	
	-10		+10	ppb	
	-500		+500	ppb	
Warm-up time			3	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)	-100		+100	ppb	0 to +70°C
	-250		+250	ppb	-20 to +70°C
	-500		+500	ppb	-40 to +85°C
Initial tolerance vs. supply voltage change vs. load change vs. aging/day vs. aging/1st year	-0.2		+0.2	ppm	at time of shipment, nominal EFC V _s ±5% static Load ±5% static after 30 days of operation after 30 days of operation
	-50		+50	ppb	
	-10		+10	ppb	
	-3		+3	ppb	
	-300		+300	ppb	
Warm-up time			3	minutes	to ±100ppb of final frequency (1 hour reading) @ +25°C

Performance Specifications

Supply Voltage (Vs)					
Parameter	Min	Typical	Max	Unit	Condition
Supply Voltage	4.75	5.0	5.25	VDC	
Power Consumption			2.5 1.0	Watts Watts	during warm-up steady state @ +25°C
RF Output					
Signal [Standard]	HCMOS				
Load		15		pF	
Signal Level (Vol)			0.5	VDC	with Vs=5V and 15 pF Load
Signal Level (Voh)	4.7			VDC	with Vs=5V and 15 pF Load
Duty Cycle	40		60	%	@ (Voh-Vol)/2
Frequency Tuning (EFC)					
Tuning Range	±5.0 ±1.0		±12.0 ±3.0	ppm ppm	with AT cut crystal with SC cut crystal
Linearity			5	%	
Tuning Slope	Positive				
Control Voltage Range	0.0	2.0	4.0	VDC	
Additional Parameters					
Phase Noise ³			-95 -125 -145 -155 -160	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz @ 100MHz
G-Sensitivity			0.5	ppb/g	worst direction
Weight			8	g	
Absolute Maximum Ratings					
Supply Voltage (Vs)			6.0	V	
Output Load			50	pF	
Operable Temperature Range	-55		+85	°C	
Storage Temperature Range	-55		+125	°C	

Outline Drawing / Enclosure



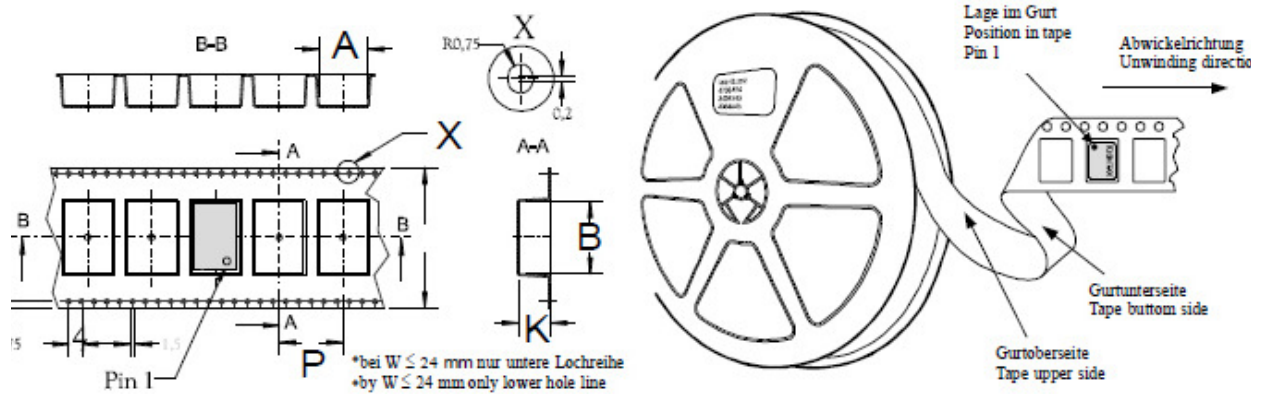
Dimensions in inches (mm)

Type A (400)		
Code	Height "H"	Pin Length "L" Min
0	9.3	5.85
1	8.3	5.85
Pin Connections		
1	Electronic Frequency Control Input (EFC)	
7	Ground (Case)	
8	RF Output	
14	Supply Voltage Input (VS)	

Dimensions in mm

Type B (401)		
Code	Height "H"	Pin Length "L" Min
0	10.4	NA
Pin Connections		
1	Electronic Frequency Control Input (EFC)	
7	Ground (Case)	
8	RF Output	
14	Supply Voltage Input (VS)	

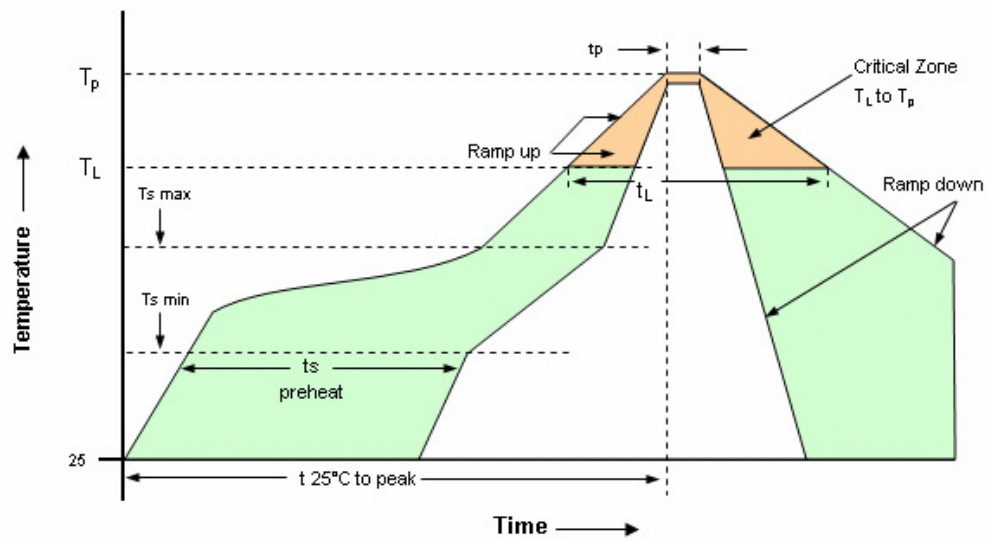
Standard Shipping Method



Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
Type B	44	50	300	20

Recommended Reflow Profile

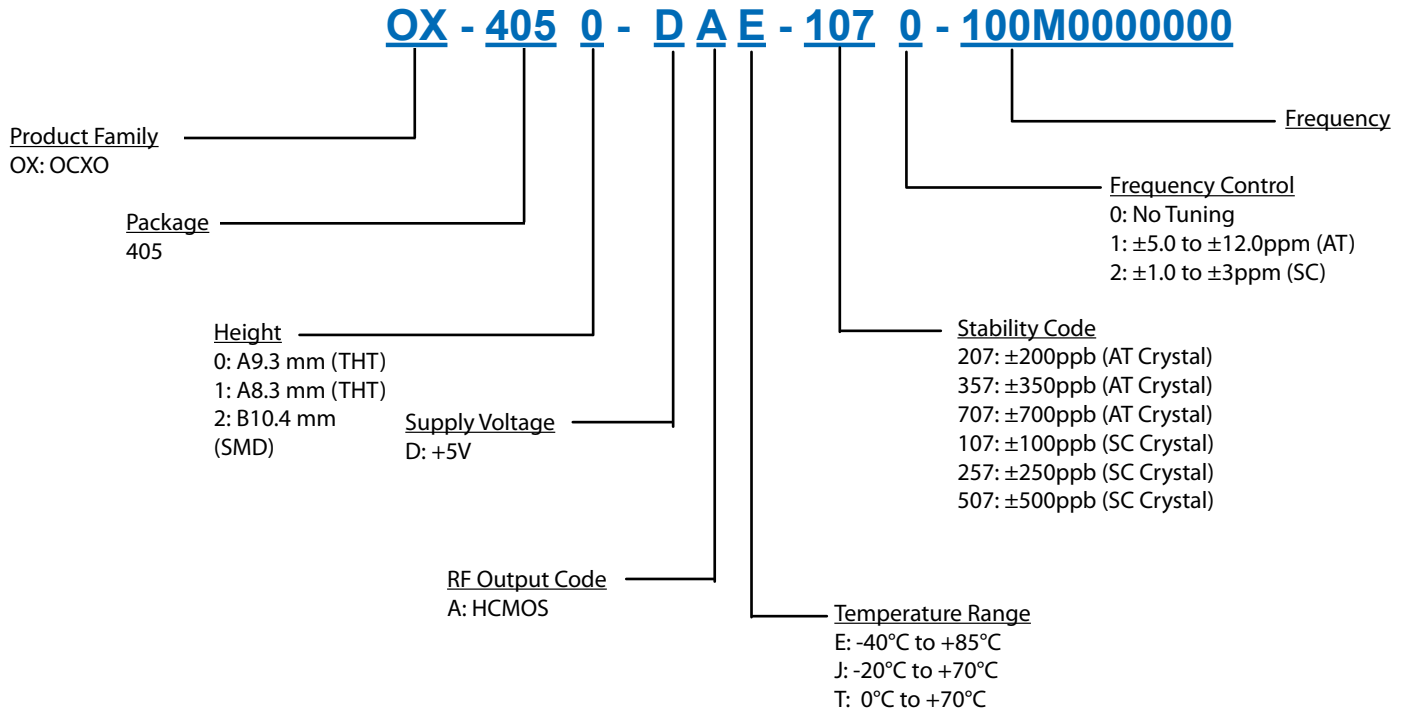
Solderprofile:



Profile Feature	Pb-Free Assembly /Sn-Pb Assembly	Profile Feature	Pb-Free Assembly /Sn-Pb Assembly
Average ramp-up rate (T _L to T _p)	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min T _{Smin} -Temperature Min T _{Smax} -Time (min to max) (t _s)	150°C 200°C 60-180 seconds	Time maintained above - Temperature (T _L) - Time (t _L)	217°C 60-150 seconds
T _{Smax} to T _L - Ramp-up Rate	3°C/second max.		
Time maintained above - Temperature (T _L) - Time (t _L)	217°C 60-150 seconds	Time within 5°C of actual Peak Temperature (t _p)	20-40 seconds
Peak Temperature (T _p)	max 260°C	Ramp-down Rate	6°C/second max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

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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