RALTRON
A RAMI TECHNOLOGY Company

Oven Controlled Crystal Oscillator

OCXO SERIES OXD30

FEATURES

Ultra High Stability
Low Aging

RoHS Compliant

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range*	f_o			10.000		MHz
Supply Voltage	V_s	Vs ±5%	3.135	3.3	3.465	V
			4.75	5.0	5.25	
			11.40	12.0	12.60	
Power Consumption	P_S	Steady state, @ 25°C			2.0	W
	$P_{S,w}$	During warm-up ,@ 25°C			4.7	W
Warm-up Time	t_W	Vs, Ta=+25°C, within ±100ppb of final frequency with reference after 1 hour on			5	min
Frequency Calibration	$\Delta f/f_0$	Ta=+25°C, after 15mins power on ref. to nominal frequency	-100		+100	ppb
Frequency Stability vs. Temperature	$\Delta f/f_0$ (T_a)	Measurement referenced to ($f_{max}+f_{min}$)/2. See Table	-0.2		+0.2	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0$ (ΔV_{CC})	Ta=25°C, Vs±5%, load=15pF	-0.3		+0.3	ppb
Frequency Stability vs. Load Variation	$\Delta f/f_0$ (Δl)	Ta=25°C, Vs, load=15pF±5%	-0.3		+0.3	ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Per day	-0.2		+0.2	ppb
	$\Delta f/\Delta t_y$	First year	-50		+50	ppb
	$\Delta f/\Delta t_y$	10 years	-0.3		+0.3	ppm
Operating Temperature Range			-40		+80	°C
Storage Temperature	$T_{(stg)}$		-40		+105	°C
Short Term Stability		τ=1s			0.05	ppb
Control Voltage Range	V_C		0	2.5	5.0	V
Frequency Tuning Range		V_C = 0V	-0.8		-0.4	ppm
		V_C = 1.65V	-200		+200	ppb
		V_C= 3.3V	+0.4		+0.8	ppm
Linearity			-10		+10	%

***Not any Combination Frequency-Operating Temperature Range- Stability is available. Please consult factory**
****The above Specification is an example for 10.000MHz, 5V**

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PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@1 Hz Offset	£ (Δf)				-90	dBc/Hz
@10 Hz Offset	£ (Δf)				-120	dBc/Hz
@100 Hz Offset	£ (Δf)				-140	dBc/Hz
@1 kHz Offset	£ (Δf)				-145	dBc/Hz
@10 kHz Offset	£ (Δf)				-150	dBc/Hz
@100 kHz Offset	£ (Δf)				-155	dBc/Hz

CMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH/VOL	V_{CC} = 5.0V, load = 15pF		3.8/0.5		V
Duty Cycle	DC	load = 15pF		45/55		%
Rise/Fall Time	t_r/t_f	10% ~ 90% Vout			5	ns
Load				15		pF

SINE-WAVE OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels			5	7	9	dBm
Harmonics					-40	dBc
Spurious					-70	dBc
Load				50		Ω

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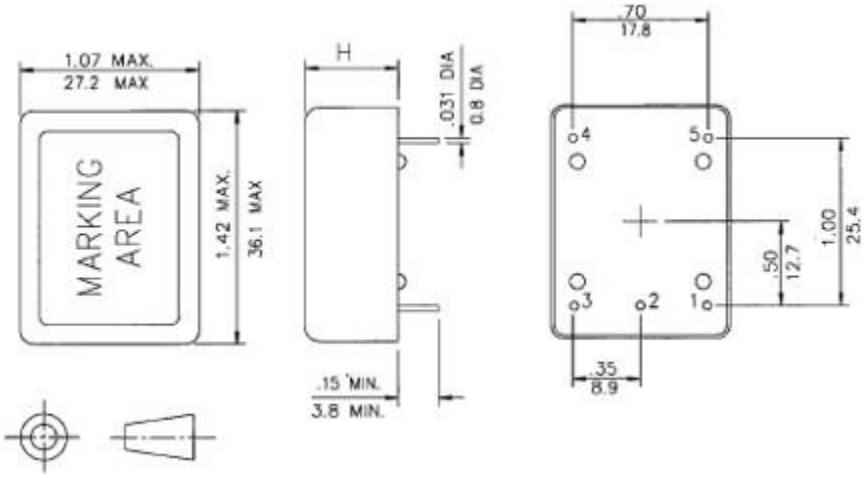
ENVIRONMENTAL MECHANICAL CONDITIONS

Storage Temperature Range	-55°C to +105°C
Drop Test	The test shall be carried out as the provisions of the IEC60028-2-32 test Ed. 10cm height, 3 times on hard board with thickness of 3cm
Bumping Test	Device are bumped to three mutually perpendicular axes at peak acceleration of 400m/s², each 4000±10times, 6ms pulse duration time
Vibration Test	Frequency range: 1Hz-4Hz-100Hz-200Hz Acceleration: 0.0001g²/Hz-0.01g²/Hz-0.01g²/Hz-0.001g²/Hz Grms=1.15g Sweep time: 30 minutes (perpendicular axes each sweep time)
Mechanical Shock	100g, 6mS duration, 1/2 sine wave, 3 shocks each direction along 3 mutually perpendicular planes.
Thermal shock	0.5h@-40℃， 0.5h@+85℃， Note: the changing time < 30 seconds, cycling for 100 times

MECHANICAL DIMENSIONS AND PIN FUNCTIONING



H = 0.59”/15mm max

PIN	SYMBOL	FUNCTION
1	N/C or V_C	No connect or Control Voltage
2	N/C or V_{ref}	No connect or Reference Voltage
3	Vs	Supply Voltage
4	OUTPUT	RF Output
5	GND	Case/Ground

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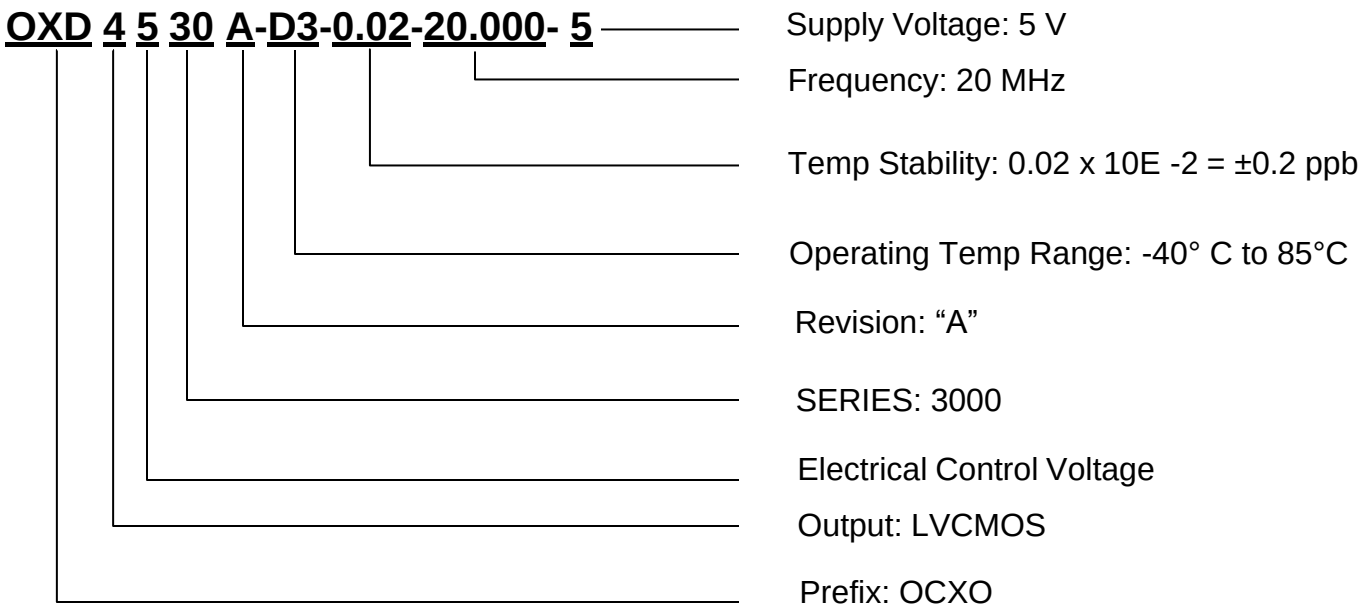
PART NUMBERING SYSTEM

Prefix	Output Type	Control Voltage	Series	Revision	Temperature Range	Stability	Frequency	Supply Voltage
OXD	4: LVCMOS 6: SINE	1: No Control Voltage 5: Control Voltage	30:3000	A	First letter: Lowest Temperature, Second letter: Highest Temperature: From A=-55°C to Z=+70°C, Then: 1=+75°C, 2=+80°C, 3=+85°C... in 5°C Steps Example: HZ: -20°C to +70°C LZ: 0°C to +70°C D3: -40°C to +85°C	Value x 10E-2in ppm Example: 1 = 0.01 ppm=10 ppb 0.1 = 0.001 ppm = 1ppb 0.01 = 0.0001 ppm = 0.1ppb 0.02= 0.0002 ppm =0.2ppb	10.000	3: 3.3 V 5: 5.0 V 12: 12.0 V



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