RALTRON
A RAMI TECHNOLOGY Company

Oven Controlled Crystal Oscillator

OX4170D-D3-1-12.800-3.3

RoHS Compliant

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_o			12.800		MHz
Supply Voltage	V_s	Vs ±5% @ 25°C	3.135	3.3	3.465	V
Input Current	I_S	Steady state, @ 25°C			150	mA
	$I_{S,w}$	During warm-up ,@ 25°C			450	mA
Warm-up Time	tw	Vs, Ta=+25°C, within ±100ppb of final frequency with reference after 1 hours on			30	s
Frequency Calibration	$\Delta f/f_0$	Ta=+25°C, 15mins power on ref to nominal frequency before reflow.	-500		+500	ppb
Frequency Stability vs. Temperature	$\Delta f/f_0$ (T_a)	Ta= -40°C…+85°C, refer to (Fmax+Fmin)/2	-10		+10	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0$ (ΔV_{CC})	Ta=25°C, Vs±5%, load=15pF	-5		+5	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0$ (Δl)	Load change max.: 5%	-3		+3	ppb
Short Term Stability		Still air, Ta=+25°C, after power on 1hour,Allan variance,τ=1s			0.05	ppb/s
Aging, after 30 Days of Operation	$\Delta f/\Delta t_d$	Daily	-2.0		+2.0	ppb
	$\Delta f/\Delta t_y$	First year	-300		+300	ppb
	$\Delta f/\Delta t_y$	10 years	-1.5		+1.5	ppm
Operating Temperature Range	T_a		-40		+85	°C
Storage Temperature Range	$T_{(stg)}$	Absolute max	-55		+105	°C

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LVCMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOL	Vs = 3.3V, load = 15pF			0.4	V
	VOH	V_s = 3.3V, load = 15pF	2.4	2.8		
Duty Cycle	DC	load = 15pF	45		55	%
Rise/Fall Time	t_r/t_f	10% ~ 90% Vout			5	ns
Load				15		pF

PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ. / Nom.	Max.	
@1 Hz Offset	£ (Δf)				-75	dBc/Hz
@10 Hz Offset	£ (Δf)				-105	dBc/Hz
@100 Hz Offset	£ (Δf)				-135	dBc/Hz
@1 kHz Offset	£ (Δf)				-145	dBc/Hz
@10 kHz Offset	£ (Δf)				-150	dBc/Hz
@100 kHz Offset	£ (Δf)				-150	dBc/Hz

ENVIROMENTAL CHARACTERISTICS

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
Vibration Test	Frequency range:10Hz~500Hz Acceleration:10g Displacement:0.75mm@10Hz Sweep time:1.5 hours total(sweep for 30 minutes in each direction)
Mechanical Shock	50g, 11mS 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

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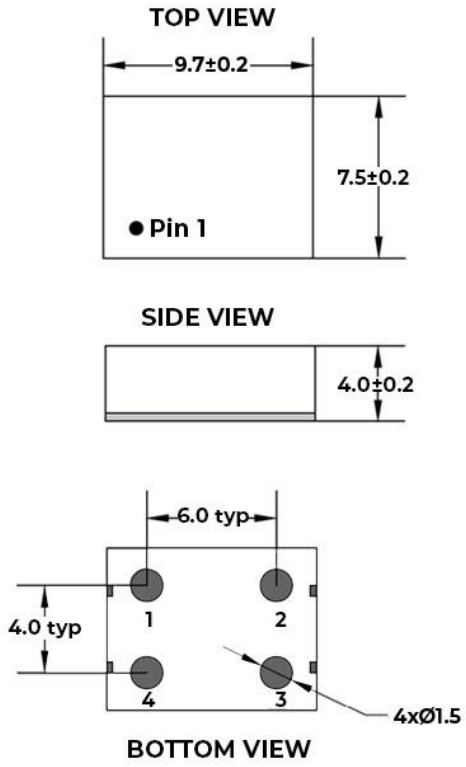
MECHANICAL DIMENSIONS AND PIN FUNCTIONING



Unit : mm

PIN	SYMBOL	FUNCTION
1	NC	No Connected
2	GND	Ground
3	OUT	RF Output
4	V_S	Supply Voltage

	Signed	Date
Created	AR	February 06, 2026
Eng. approved	CP	February 06, 2026
REV A		

RoHS Compliant