

OX4170A-D3-2-20.000-3.3



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_0		20.000			MHz
Supply Voltage	V_s	$V_s \pm 5\%$ @ 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			500	mA
Warm-up Time	t_w	V_s , $T_a = +25^\circ\text{C}$, within ± 200 ppb of final frequency with reference after 1 hours on			3	min
Frequency Calibration	$\Delta f/f_0$	$T_a = +25^\circ\text{C}$, after 15min power on ref. to nominal frequency and within 90 days storage.	-500		+500	ppb
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	$T_a = -40^\circ\text{C} \dots +85^\circ\text{C}$, measurement referenced to 25°C	-20		+20	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_{CC})$	$T_a = 25^\circ\text{C}$, $V_s \pm 5\%$, load=15pF	-10		+10	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta I)$	Load change max.: 10%	-10		+10	ppb
Frequency vs. Temperature slope		1°C/ min, 5°C step	-1		+1	ppb/°C
Aging, after 30 Days of Operation	$\Delta f/\Delta t_d$	Daily	-2		+2	ppb
	$\Delta f/\Delta t_y$	First year	-400		+400	ppb
	$\Delta f/\Delta t_y$	10 years	-2		+2	ppm
Total free run Frequency Stability	$\Delta f/\Delta t$	Including 20 Years of aging, Voltage supply variation, load variation, frequency calibration, frequency stability vs. temperature.	-4.6		+4.6	ppm
Operating Temperature Range	T_a		-40		+85	°C
Storage Temperature Range	$T_{(stg)}$	Absolute max	-40		+85	°C

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LVC MOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOL	V _s = 3.3V, load = 15pF			0.3	V
	VOH	V _s = 3.3V, load = 15pF	3.0			
Duty Cycle	DC	load = 15pF	45		55	%
Rise/Fall Time	t _r /t _f	10% ~ 90% V _{out}		2	5	ns
Load			13.5	15	16.5	pF
Spurious					-70	dBc

PHASE NOISE

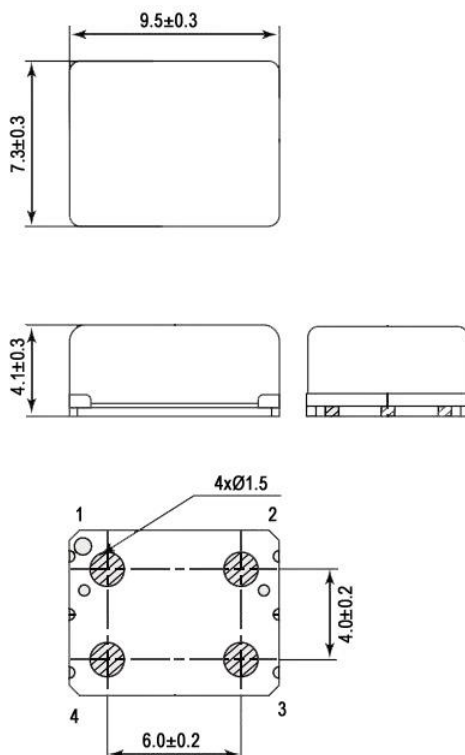
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ. / Nom.	Max.	
@1 Hz offset	£ (Δf)			-67	-64	dBc/Hz
@10 Hz Offset	£ (Δf)			-100	-95	dBc/Hz
@100 Hz Offset	£ (Δf)			-130	-125	dBc/Hz
@1 kHz Offset	£ (Δf)			-150	-145	dBc/Hz
@10 kHz Offset	£ (Δf)			-158	-150	dBc/Hz
@100 kHz Offset	£ (Δf)			-160	-155	dBc/Hz
@1 MHz Offset	£ (Δf)			-163	-160	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
Bumping Test	Device are bumped to three mutually perpendicular axes at peak acceleration of 400m/s ² , each 4000±10times, 6ms pulse duration time
Vibration Test	Frequency range: 1Hz-4Hz-100Hz-200Hz Acceleration: 0.0001g ² /Hz-0.01g ² /Hz-0.01g ² /Hz-0.001g ² /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°C, 0.5h@+85°C, Note: the changing time < 30 seconds, cycling for 100 times

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MECHANICAL DIMENSIONS AND PIN FUNCTIONING



PIN	SYMBOL	FUNCTION
1	N/C	No Connect
2	GND	Ground
3	OUT	RF Output
4	V _S	Supply Voltage

	Signed	Date
Created	CP	February 4, 2020
Eng. approved	SP	February 4, 2020
REV A		



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