

OX4115B-D3-0.5-20.000-3.3



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_0		20.000			MHz
Supply Voltage	V_s	$T_a=25^{\circ}\text{C}$, $V_s \pm 5\%$	3.135	3.3	3.465	V
Input Current	I_s	$T_a=25^{\circ}\text{C}$, Steady state			300	mA
	I_w	$T_a=25^{\circ}\text{C}$, During warm-up			750	mA
Frequency Calibration	$\Delta f/f_0$	$T_a=25^{\circ}\text{C}$, after 15 minutes powered on, ref to nominal frequency	-200		+200	ppb
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	$T_a= -40^{\circ}\text{C} \dots +85^{\circ}\text{C}$, measurement ref to 25°C	-5		+5	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta R_L)$	$T_a=25^{\circ}\text{C}$, load $\pm 5\%$	-2		+2	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_s)$	$T_a=25^{\circ}\text{C}$, $V_s \pm 5\%$	-2		+2	ppb
Short Term Stability		In still air, after powered on 1 hour; $\tau = 1\text{s}$			0.01	ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Per day	-0.5		+0.5	ppb
	$\Delta f/\Delta t_y$	Per year	-100		+100	ppb
	$\Delta f/\Delta t_y$	10 years	-400		+400	ppb
Warm-up Time	T_w	$T_a=25^{\circ}\text{C}$, within $\pm 100\text{ppb}$ of final frequency, ref to 1 hour powered on			2	min
Operating Temperature Range	T_a		-40		+85	$^{\circ}\text{C}$
Storage Temperature Range	$T_{(stg)}$	Absolute max	-55		+105	$^{\circ}\text{C}$

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CMOS Output Characteristics

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Load	O _{Load}	Output to Ground		15		pF
Output signals Levels	VOH		2.4	2.8		V
	VOL				0.4	V
Rise/ Fall Time	Tr/Tf	10% to 90% Vout			5	ns
Duty Cycle	DC	Load 15pF, @50% Output signal	45		55	%
Spurious	-				-80	dBc

PHASE NOISE

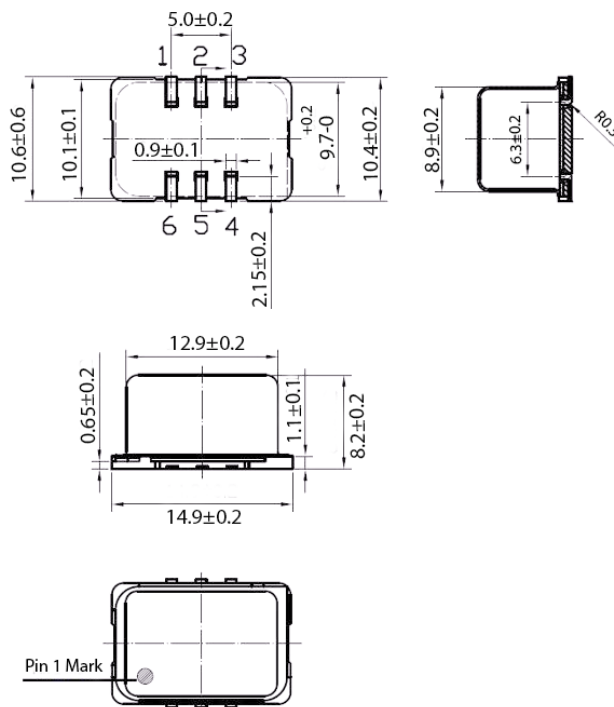
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@1 Hz Offset	£ (Δf)				-75	
@10 Hz Offset	£ (Δf)				-105	dBc/Hz
@100 Hz Offset	£ (Δf)				-135	dBc/Hz
@1 kHz Offset	£ (Δf)				-150	dBc/Hz
@10 kHz Offset	£ (Δf)				-153	dBc/Hz
@100 kHz Offset	£ (Δf)				-155	dBc/Hz
@1 MHz Offset	£ (Δf)				-155	dBc/Hz

Environmental, Mechanical Conditions

Mechanical Shock	The test shall be carried out as the provisions of the IEC60068-2-27 test Ed. 500g, 1mS 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
Vibration test	The test shall be carried out as the provisions of the IEC60068-2-34 test Ed. Random: Acceleration: 0.04g ² /Hz Grms=7.5g Sweep time: 15 minutes (perpendicular axes each sweep time)
Moisture sensitivity level	MSL 1
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	The test shall be carried out as the provisions of the IEC60068-2-29 test Ed. Device are bumped to three mutually perpendicular axes at peak acceleration of 400m/s ² , each 4000±10 times, 6ms pulse duration time.

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MECHANICAL DIMENSIONS AND PIN FUNCTIONING



PIN	SYMBOL	FUNCTION
1	NC	No connect
2	NC	No connect
3	GND	Case/Ground
4	OUT	Output
5	NC	No connect
6	Vs	Supply Voltage

	Signed	Date
Created	CP	September 16, 2020
Eng. approved	SP	September 16, 2020
REV A		

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