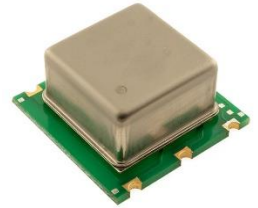


### OX4150A-D1-0.5-38.880-3.3-7



#### ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT	
			Min.	Typ.	Max.		
Nominal Frequency	$f_o$		38.880			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			300	mA	
	$I_w$	During warm-up			950	mA	
Warm-up Time	$t_w$	$T_a = +25^\circ\text{C}$ within $\pm 100$ ppb of final frequency with reference after 1 hour on			2	min	
Frequency Calibration	$\Delta f/f_o$	$T_a = +25^\circ\text{C}$ , after 15 min power on, ref to nominal frequency	-200		+200	ppb	
Frequency Stability vs. Temperature	$\Delta f/f_o (T_a)$	$T_a = -40^\circ\text{C} \dots +75^\circ\text{C}$	-5		+5	ppb	
Frequency Stability vs. Supply Voltage	$\frac{\Delta f/f_o}{(\Delta V_{CC})}$	$T_a = +25^\circ\text{C}$ , $V_s \pm 5\%$	-1.0		+1.0	ppb	
Frequency Stability vs. Load	$\Delta f/f_o (T_a)$	$T_a = +25^\circ\text{C}$ , $L_C \pm 5\%$	-1.0		+1.0	ppb	
Aging	$\Delta f/f_t$	After 30 days of operation	Per day	-0.5		+0.5	ppb
			1 <sup>st</sup> year	-100		+100	ppb
			10 years	-600		+600	ppb
Short Term Stability (Still Air)		$\tau = 1\text{s}$ , $T_a = +25^\circ\text{C}$ , after power on 1h			0.05	ppb	
Operating Temperature Range	$T_a$		-40		+75	°C	
Storage Temperature Range	$T_s$		-40		+105	°C	

**OX4150A-D1-0.5-38.880-3.3-7****HCMOS OUTPUT CHARACTERISTICS**

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH	High Level	2.4	2.8		V
	VOL	Low Level			0.4	V
Duty Cycle	DC	load = 15pF, @50% output signal	45		55	%
Rise/Fall Time	t <sub>r</sub> /t <sub>f</sub>	10% ~ 90% output signal, load = 15pF			5	ns
Load	L <sub>c</sub>			15		pF
Spurious	Sp				-70	dBc

**PHASE NOISE**

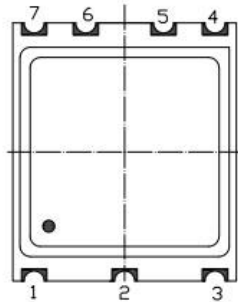
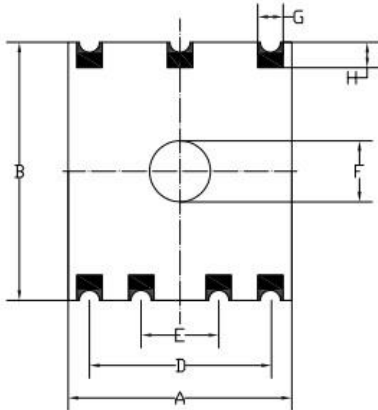
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@10 Hz Offset	£ (Δf)				-95	dBc/Hz
@100 Hz Offset	£ (Δf)				-120	dBc/Hz
@1k Hz Offset	£ (Δf)				-135	dBc/Hz
@10 kHz Offset	£ (Δf)				-145	dBc/Hz
@100 kHz Offset	£ (Δf)				-150	dBc/Hz

**ENVIRONMENTAL AND MECHANICAL CONDITIONS**

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 <sup>2</sup> , each 4000±10times, 6ms pulse duration time
Vibration Test	Frequency range: 1Hz-4Hz-100Hz-200Hz Acceleration: 0.0001g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.001g <sup>2</sup> /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 FUNCTIONS

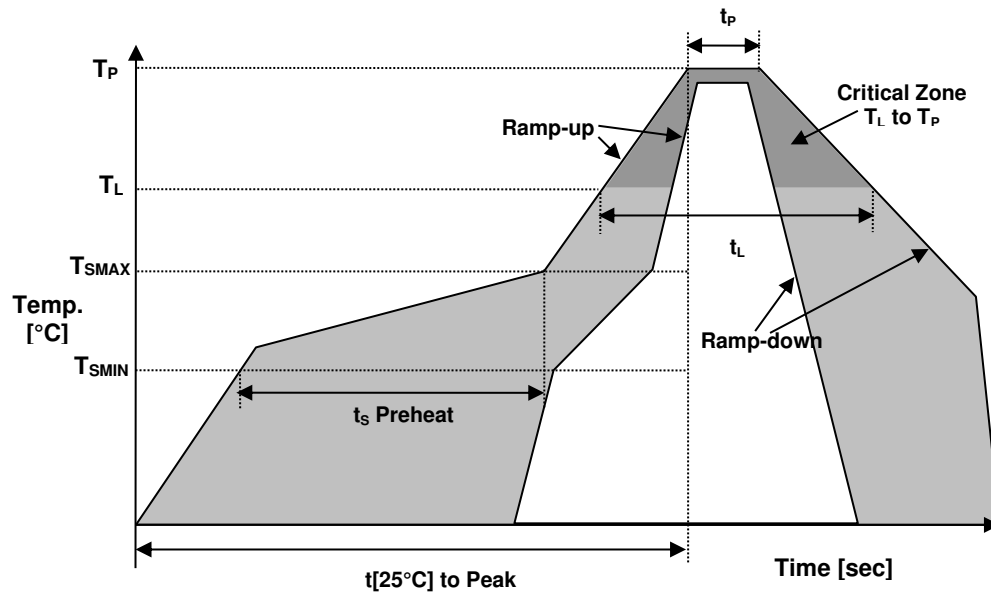


DIMENSIONS (mm)			
	Min	Typ	Max
A	21.7	22.0	22.3
B	25.1	25.4	25.7
C			12.5
D	17.7	17.8	17.9
E	7.5	7.6	7.7
F			6.0
G	2.4	2.5	2.6
H	2.4	2.5	2.6

PIN	SYMBOL	FUNCTION
1	NC	No Connect
2	NC	No Connect
3	V <sub>S</sub>	Supply Voltage
4	OUTPUT	RF Output
5	NC	No Connect
6	NC	No Connect
7	GND	Ground

### OX4150A-D1-0.5-38.880-3.3-7

#### REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	T <sub>SMIN</sub>	150°C
Temperature Max Preheat	T <sub>SMAX</sub>	200°C
Time (T <sub>SMIN</sub> to T <sub>SMAX</sub> )	t <sub>s</sub>	60-180 sec.
Temperature	T <sub>L</sub>	217°C
Peak Temperature	T <sub>P</sub>	260°C
Ramp-up rate	R <sub>UP</sub>	3°C/sec max.
Ramp-down rate	R <sub>DOWN</sub>	6°C/sec max.
Time within 5°C of Peak Temperature	t <sub>p</sub>	10 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t <sub>L</sub>	60-150 sec.

	Signed	Date
<b>Created</b>	CP	January 27, 2022
<b>Eng. approved</b>	SP	January 27, 2022
<b>REV A</b> Initial Release <b>B</b> CP November 30, 2022 Corrected the Freq Stability Vs. Temp Value		