

OX4150A-D3-1-20.000-3.3-7



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_o		20.000			MHz
Supply Voltage	V_s	$V_s \pm 5\%$ @ 25°C	3.135	3.3	3.465	V
Power Consumption	P_s	Steady state, @ 25°C			1.5	W
	P_w	During warm-up, @ 25°C			3.3	W
Initial Frequency Accuracy	$\Delta f/f_o$	Ta=+25°C, after 15 min power on, ref to nominal frequency	-500		+500	ppb
Frequency Stability vs. Temperature	$\Delta f/f_o (T_a)$	Ta= -40°C...+85°C, ref to +25°C	-10		+10	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_o (\Delta V_{CC})$	Ta=25°C, $V_s \pm 5\%$	-2		+2	ppb
Frequency Stability vs. Load Change	$\Delta f/f_o (\Delta I)$	Ta=25°C, Load change, max.: $\pm 5\%$	-2		+2	ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Daily	-1		+1	ppb
	$\Delta f/\Delta t_y$	First year	-100		+100	ppb
	$\Delta f/\Delta t_y$	10 years	-800		+800	ppb
Short Term Stability				0.01		ppb/s
Total Stability		20 years from nominal freq after 30 min continuous operation for aging, temp, voltage, initial freq accuracy	-2		+2	ppm
2 Hours Holdover		After 30 days continuous operation, for aging and $\pm 1^\circ\text{C}$ temp change	-1.5		+1.5	μs
Warm-up		Within $\pm 0.1\text{ppm}$, at 25°C, referenced to 1 hour			5	min
Operating Temperature Range	T_a		-40		+85	°C
Storage Temperature	$T_{(stg)}$	Absolute max	-40		+90	°C

CMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH/VOL			2.4 / 0.4		V
Duty Cycle	DC	load = 15pF	40		60	%
Rise/Fall Time	t_r/t_f	10% ~ 90% Vout			6	ns
Load				15		pF
Spurious					-60	dBc

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PHASE NOISE

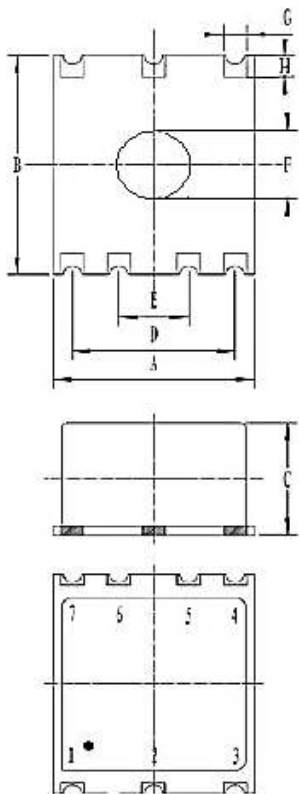
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@10 Hz Offset	$\mathcal{E} (\Delta f)$				-80	dBc/Hz
@10 Hz Offset	$\mathcal{E} (\Delta f)$				-110	dBc/Hz
@100 Hz Offset	$\mathcal{E} (\Delta f)$				-135	dBc/Hz
@1 kHz Offset	$\mathcal{E} (\Delta f)$				-145	dBc/Hz
@10 kHz Offset	$\mathcal{E} (\Delta f)$				-150	dBc/Hz
@10 kHz Offset	$\mathcal{E} (\Delta f)$				-152	dBc/Hz

ENVIRONMENTAL MECHANICAL CONDITIONS

Operable Temperature Range	-40 to + 80°C
Storage Temperature range	-40°C to +90°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 FUNCTIONS



DIMENSIONS			
	Min	Typ	Max
A	21.7	22.0	22.3
B	25.1	25.4	25.7
C			13.0
D	17.7	17.8	17.9
E	7.5	7.6	7.7
F	5.8	6.0	6.2
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 _s	Supply Voltage
4	OUTPUT	RF Output
5	NC	No Connect
6	NC	No Connect
7	GND	Ground

	Signed	Date
Created	CP	November 15, 2018
Eng. approved	SP	November 15, 2018
REV A		