

### OX4551C-HZ-0.5-38.400-5



#### ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	$f_0$		38.400			MHz
Supply Voltage	$V_s$	$V_s \pm 5\%$ @ 25°C	4.75	5.0	5.25	V
Input Current	$I_s$	Steady state, @ 25°C			200	mA
	$I_w$	During warm-up, @ 25°C			700	mA
Initial Frequency Accuracy	$\Delta f/f_0$	$V_c=2.0V$ , @25°C after 15mins power on ref to nominal frequency.	-200		+200	ppb
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	$T_a = -20^\circ C \dots +70^\circ C$ , ref to +25°C	-5		+5	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_{CC})$	$T_a=25^\circ C$ , $V_s \pm 5\%$	-2		+2	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta I)$	$T_a=25^\circ C$ , Load change, max.: $\pm 10\%$	-2		+2	ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Daily	-0.5		+0.5	ppb
	$\Delta f/\Delta t_y$	First year	-75		+75	ppb
	$\Delta f/\Delta t_y$	10 years	-0.4		+0.4	ppm
Short Term Stability		After power on 1h, $T_a=25^\circ C$			0.05	ppb/s
Frequency Tuning Range		$V_c = 0V$			-0.5	ppm
	$\Delta f/f_0 (\Delta V_c)$	$V_c = 2.0V$	-200		+200	ppb
		$V_c = 4.0V$	+0.5			ppm
Control Voltage Range	$\Delta V_c$		0	2.0	4.0	V
Linearity			-10		+10	%
Slope		Positive				-
Input Impedance	$Z_{in}$		100			k $\Omega$
Warm-up Time		Within $\pm 100$ ppb of final frequency with reference after 1 hour on @ +25°C			2	min
Operating Temperature Range	$T_a$		-20		+70	°C
Storage Temperature Range	$T_{(stg)}$	Absolute max	-55		+105	°C

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#### CMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH		2.4	2.8		V
	VOL				0.4	V
Duty Cycle	DC	load = 15pF	45		55	%
Rise/Fall Time	$t_r/t_f$	10% ~ 90% Vout			5	ns
Load				15		pF
Spurious					-70	dBc

#### PHASE NOISE

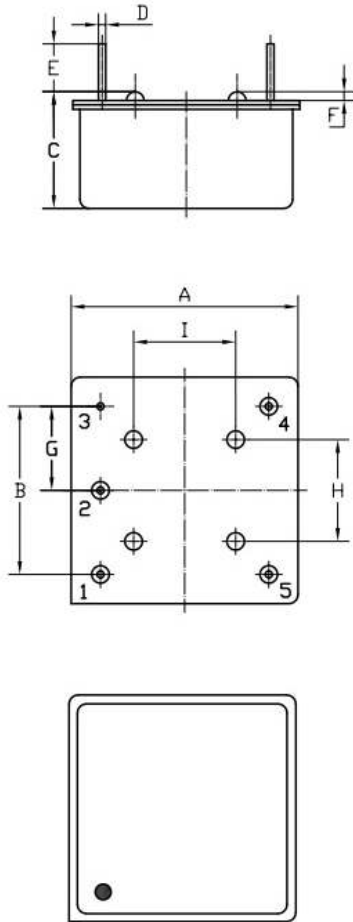
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@10 Hz Offset	$\mathcal{L}(\Delta f)$				-105	dBc/Hz
@100 Hz Offset	$\mathcal{L}(\Delta f)$				-130	dBc/Hz
@1 kHz Offset	$\mathcal{L}(\Delta f)$				-145	dBc/Hz
@10 kHz Offset	$\mathcal{L}(\Delta f)$				-150	dBc/Hz
@100 kHz Offset	$\mathcal{L}(\Delta f)$				-153	dBc/Hz
@1 MHz Offset	$\mathcal{L}(\Delta f)$				-155	dBc/Hz

#### ENVIRONMENTAL MECHANICAL CONDITIONS

Operable Temperature Range	-20 to + 70°C
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 <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

### OX4551C-HZ-0.5-38.400-5

#### MECHANICAL DIMENSIONS AND PIN FUNCTIONS



DIMENSIONS		
	Min	Max
A		21.6
B	14.74	15.74
C		11
D	0.4	0.6
E	4.0	5.0
F	0.5	0.7
G	7.52	7.72
H	10.1 nominal	
I	10.1 nominal	

PIN	SYMBOL	FUNCTION
1	V <sub>s</sub>	Supply Voltage
2	OUTPUT	RF Output
3	GND	Ground
4	V <sub>c</sub>	Control Voltage
5	NC	No Connect

	Signed	Date
Created	AR	May 27, 2022
Eng. approved	CP	May 27, 2022
REV A		

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