

### OX4180A-HZ-0.6-12.800-3.3



#### ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	$f_0$		12.800			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
	$P_{S,w}$	During warm-up		3.5	4.0	W
Load	$O_{Load}$	Output to Ground	5	10	15	pF
Frequency Calibration	$\Delta f/f_0$	$V_S = 3.3V$ , $T_a = 25^\circ C$ , at the time of shipment	-1		+1	ppm
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	$T_a = -20^\circ C \dots +70^\circ C$	-6		+6	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta R_L)$	$T_a = 25^\circ C$ , $V_S \pm 5\%$ , load=10pF	-2		+2	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_S)$		-2		+2	ppb
Short Term Stability		Still air, 1.0 s		0.01		ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Daily	0.5		+0.5	ppb
	$\Delta f/\Delta t_y$	Per Year	-80		+80	ppb
	$\Delta f/\Delta t_y$	Per 20 Years	-1.0		+1.0	ppm
Warm-up Time		$T_a = 25^\circ C$ , to within 6 ppb of frequency @ 60 minutes.			5	min
Operating Temperature range	$T_a$		-20		+70	°C
Operable Temperature range	$T_a$		-40		+85	°C
Start-up Time					50	ms

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**CMOS Output Characteristics**

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output signals Levels	VOH		2.4			V
	VOL				0.4	V
Rise/ Fall Time	Tr/Tf	10% to 90% Vout			5.0	ns
Duty Cycle	DC	Measured @ 1.65V	40	50	60	%
Load				15		pF

**PHASE NOISE**

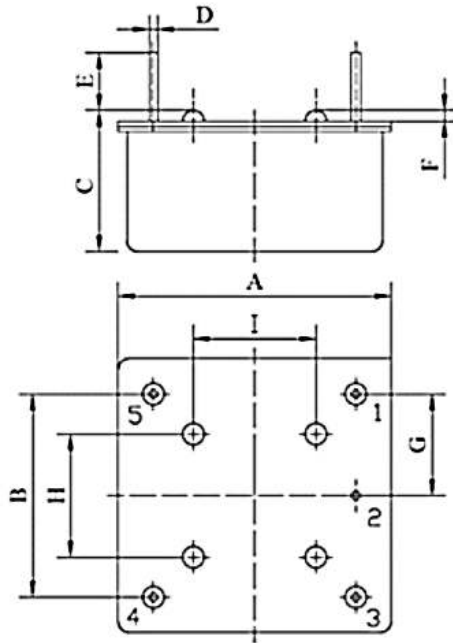
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@10 Hz Offset	$\mathcal{L}(\Delta f)$			-115		dBc/Hz
@100 Hz Offset	$\mathcal{L}(\Delta f)$			-135		dBc/Hz
@1 kHz Offset	$\mathcal{L}(\Delta f)$			-145		dBc/Hz
@10 kHz Offset	$\mathcal{L}(\Delta f)$			-146		dBc/Hz

**Environmental**

Shock	500 G's 1ms, half sine, 3 shocks per direction, per MIL-STD 202F, Method 213B Test condition D
Sinusoidal Vibration	0.06" D.A. or 10G's peak, 10 to 500Hz, per MIL-STD 202F, Method 204D, Test condition A
Random vibration	5.35 G's rms, 20 to 2000Hz per MIL-STD-202F, Method 214, Test Condition 1A, 15 minutes each axis.
Moisture	10 cycles, 95% RH, per MIL-STD-202F, Method 112.
Resistance to solder heat	Per MIL-STD-202F, Method 210, Condition E

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**MECHANICAL DIMENSIONS AND PIN FUNCTIONING**



Symbol	Dimensions (mm)	
	Min	Nominal
A		25.6
B	18.80	19.20
C		12.7
D	0.70	0.90
E	4.60	6.20
F	0.40	0.70
G	9.40	9.60
H	11.5 nominal	
I	11.5 nominal	

PIN	SYMBOL	FUNCTION
1	RF OUT	RF Output
2	GND	Case/Ground
3	NC	NO CONNECTED
4	NC	NO CONNECTED
5	Vs	Supply Voltage

	Signed	Date
Created	CP	January, 15, 2019
Eng. approved	SP	January
REV A		

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