

OX2180A-D3-0.8-20.000-3.3-SMD



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Nominal Frequency	f_0		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			300	mA
	$P_{s,w}$	During warm-up, @ 25°C			1060	mA
Warm-up Time	t_w	$T_a = +25^\circ\text{C}$ within $\pm 50\text{ppb}$ of final frequency with reference after 1 hours on			5	min
Frequency Calibration	$\Delta f/f_0$	$T_a = +25^\circ\text{C}$, after 15mins power on ref. to nominal frequency and within 90 days storage.	-0.1		+ 0.1	ppm
Frequency Stability vs. Temperature	$\Delta f/f_0 (T_a)$	$T_a = -40^\circ\text{C} \dots +85^\circ\text{C}$, measurement referenced to 25°C	-8		+8	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_0 (\Delta V_{CC})$	$T_a = 25^\circ\text{C}$, $V_s \pm 5\%$, load = 15pF	-2		+2	ppb
Frequency Stability vs. Load Change	$\Delta f/f_0 (\Delta I)$	Load change, max.: 5%	-2		+2	ppb
Short Term Stability		After power on 1 hour, in still air			0.05	ppb/s
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Daily	-1		+1	ppb
	$\Delta f/\Delta t_y$	First year	-150		+150	ppb
Operating Temperature	T_a		-40		+85	°C
Storage Temperature	$T_{(stg)}$	Absolute max	-55		105	°C

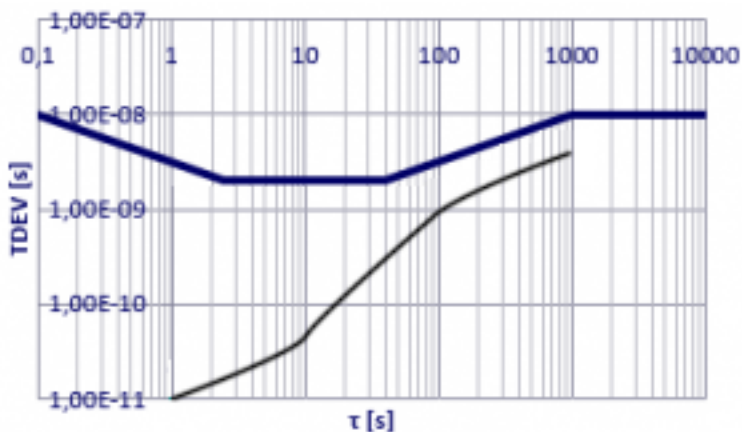
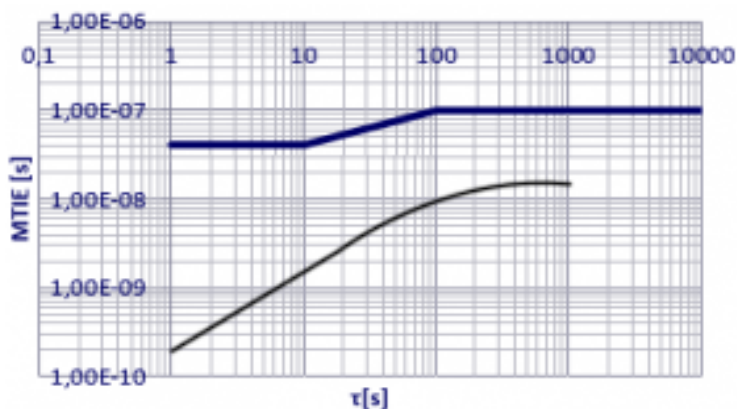
HCMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH/VOL	$V_{CC} = 3.3\text{V}$, load = 15pF		2.4/0.4		V
Duty Cycle	DC	load = 15pF		45/55		%
Rise/Fall Time	t_r/t_f	10% ~ 90% V_{out}			5	ns
Load				15	$\pm 5\%$	pF

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PHASE NOISE

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

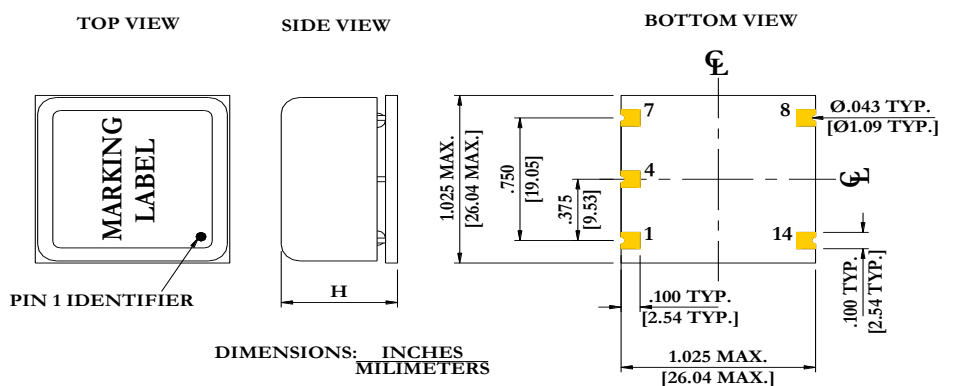


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ENVIRONMENTAL MECHANICAL CONDITIONS

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 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

MECHANICAL DIMENSIONS AND PIN FUNCTIONS



— HEIGHT, MAX. "H":
0.511" / 13.0mm



A **RAMI TECHNOLOGY** Company

**IEEE 1588 Oven Controlled
Crystal Oscillator**

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PIN	SYMBOL	FUNCTION
1	OUTPUT	RF Output
4	GND	Case/Ground
7	NC	No Connect
8	NC	No connect
14	V _S	Supply Voltage

March, 2017