

OCXO SERIES 2800

FEATURES

Miniature OCXO in standard 14-pin DIP package with SMD adapter
Fast warm up
Frequencies up to 100 MHz



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range*	f_o		5.000		100.000	MHz
Supply Voltage	V_s	$V_s \pm 5\%$	3.135	3.3	3.465	V
Power Consumption	P_s	Steady state, @ 25°C			1.0	W
	$P_{s,w}$	During warm-up, @ 25°C			2.8	
Warm-up Time	t_w	V_s , $T_a = +25^\circ\text{C}$, within $\pm 100\text{ppb}$ of final frequency with reference after 1 hour on			5	min
Initial Tolerance	$\Delta f/f_o$	At time of shipment	-200		+200	ppb
Frequency Stability vs. Temperature*	$\Delta f/f_o (T_a)$	Measurement referenced to $(f_{\text{max}} + f_{\text{min}})/2$. See Table	-10		+10	ppb
Frequency Stability vs. Supply Voltage	$\Delta f/f_o (\Delta V_{CC})$	$T_a = 25^\circ\text{C}$, $V_s \pm 5\%$, load = 15pF	-5		+5	ppb
Frequency Stability vs. Load Variation	$\Delta f/f_o (\Delta I)$	$T_a = 25^\circ\text{C}$, V_s , load = 15pF $\pm 5\%$	-5		+5	ppb
Aging, after 30 days of operation	$\Delta f/\Delta t_d$	Per day	-2		+2	ppb
	$\Delta f/\Delta t_y$	First year	-200		+200	ppb
	$\Delta f/\Delta t_y$	10 years	-1.6		+1.6	ppm
Operating Temperature Range*			-40		+85	°C
Storage Temperature	$T_{(stg)}$		-40		+105	°C
Short Term Stability		$\tau = 1\text{s}$			0.05	ppb
Control Voltage Range	V_c		0		2.8	V
Frequency Tuning Range		Referenced to frequency at 1.4 V	± 2		± 4	ppm
Linearity			-10		+10	%

*Not any Combination Frequency-Operating Temperature Range- Stability is available. Please consult factory

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PHASE NOISE

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
@1 Hz Offset	$E (\Delta f)$				-85	dBc/Hz
@10 Hz Offset	$E (\Delta f)$				-115	dBc/Hz
@100 Hz Offset	$E (\Delta f)$				-135	dBc/Hz
@1 kHz Offset	$E (\Delta f)$				-148	dBc/Hz
@10 kHz Offset	$E (\Delta f)$				-152	dBc/Hz
@100 kHz Offset	$E (\Delta f)$				-155	dBc/Hz

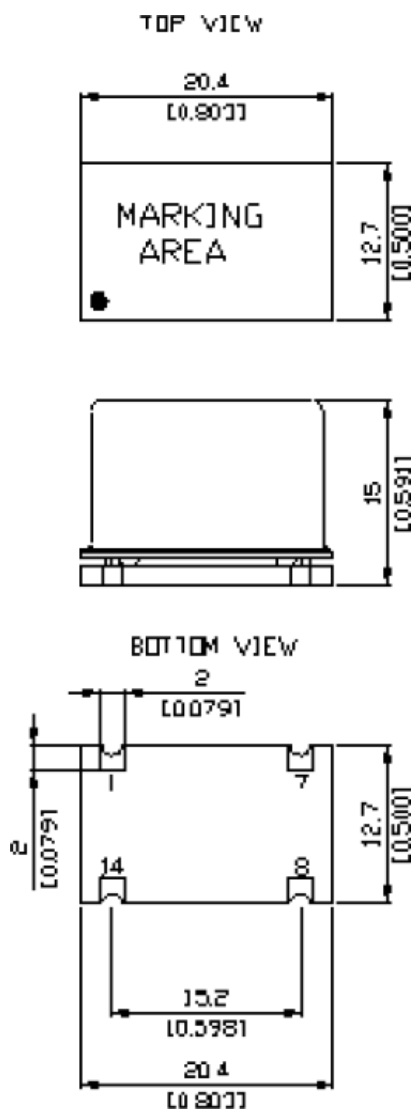
CMOS OUTPUT CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Output Levels	VOH		2.4			V
	VOL				0.4	V
Duty Cycle	DC	Load = 15pF	45		55	%
Rise/Fall Time	tr/tf	10% ~ 90% Vout			7	ns
Load				15		pF

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 FUNCTIONING



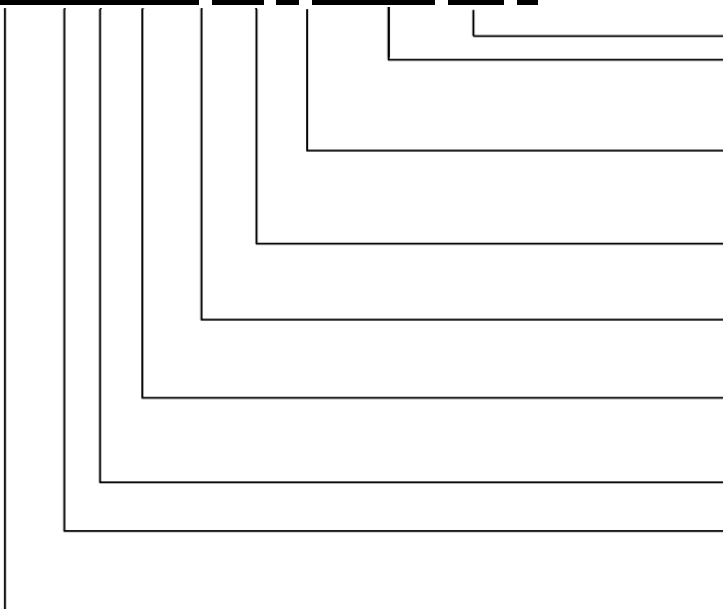
PIN	SYMBOL	FUNCTION
1	V _c	Voltage Control
7	GND	Ground
8	OUTPUT	RF Output
14	V _s	Supply Voltage

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■ PART NUMBERING SYSTEM

Prefix	Output Type	Control Voltage	Series	Revision	Temperature Range	Stability	Frequency	Supply Voltage	Pads
OX	4: LVCMOS	1: No Control Voltage 5: Control Voltage	28:2800	A	First letter: Lowest Temperature, Second letter: Highest Temperature: From A=-55°C to Z=+70°C, Then: 1=+75°C, 2=+80°C, 3=+85°C... in 5°C Steps Example: HZ: -20°C to +70°C LZ: 0°C to +70°C D3: -40°C to +85°C	Value x 10E-2 in ppm Example: 1= 0.01 ppm	In MHz	3.3: 3.3 V	4: 4 Pads

OX 4 5 28 A-D3-1-20.000-3.3-4



Pads: 4 Pads

Supply Voltage 3.3V

Frequency: 20 MHz

Temp Stability: $1 \times 10E-2 = \pm 0.01$ ppm

Operating Temp Range: -40° C to 85°C

Revision: "A"

SERIES: 2800

Electrical Control Voltage

Output: LVCMOS

Prefix: OCXO