

# FEATURES

PETERMANN

TECHNIK

Time & Frequency Components

- HIGH RELIABILITY FOR LOW COST
- AGING OF  $\pm 0.001$  PPM/DAY IN SMALL PACKAGE
- EXTENDED TEMPERATURE RANGE TO  $-40/+75^{\circ}\text{C}$
- SHORT WARM-UP TIME AND EXCELLEN RETRACE BEHAVIOR
- LOW POWER CONSUMPTION AND EXCELLENT PHASE NOISE PARAMETERS
- PCS AND CELLULAR BASE STATIONS, SYNTHESIZER, DIGITAL SWITCHING, MEASUREMENT EQUIPMENT

SERIES		OCXO-20
PACKAGE		20.5 x 20.5 x 10.5 mm <sup>3</sup>
FREQUENCY RANGE		1.0 ~ 100.0 MHz
FREQUENCY ACCURACY		$\pm 0.1$ PPM (control voltage centered)
FREQUENCY STABILITY	VS. AGING AT-CUT	$\pm 0.003$ ppm/day / $\pm 0.5$ ppm/first year / $\pm 3$ ppm/10 years
	VS. AGING SC-CUT	$\pm 0.001$ ppm/day / $\pm 0.1$ ppm/first year / $\pm 0.5$ ppm/10 years
	VS. LOAD	$\pm 0.02$ ppm / load changement of $\pm 5\%$
	VS. SUPPLY VOLTAGE	$\pm 0.02$ ppm / supply voltage changement of $\pm 5\%$
	VS. TEMPERATURE	see table 1
OPERATING TEMPERATURE RANGE		$0/+50^{\circ}\text{C}$ ~ $-40/+75^{\circ}\text{C}$
STORAGE TEMPERATURE RANGE		$-40/+100^{\circ}\text{C}$
SUPPLY VOLTAGE		$+5.0$ VDC $\pm 5\%$ / $+12$ VDC $\pm 5\%$
CURRENT CONSUMPTION		3.6 W max. during warm-up 1.2 W max. @ $25^{\circ}\text{C}$
WARM-UP TIME	AT-CUT	$\pm 0.5$ ppm <3 minutes
	SC-CUT	$\pm 0.03$ ppm <3 minutes
FREQUENCY CONTROL RANGE	AT-CUT	$\pm 5.0$ ppm
	SC-CUT	$\pm 1.0$ ppm
CONTROL VOLTAGE		$0 \sim 5$ VDC
SLOPE		POSITIVE
LINEARITY		$\pm 10\%$
PHASE NOISE	1 Hz	-80 dBc/Hz
	10 Hz	-120 dBc/Hz
	100 Hz	-140 dBc/Hz
	1 kHz	-145 dBc/Hz
	10 kHz	-150 dBc/Hz
OUTPUT SIGNAL AND LOAD CHARACTERISTICS		see table 2
<b>OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION</b>		

**TABLE 1 - FREQUENCY STABILITY VS. TEMPERATURE**

CODE	FREQUENCY STABILITY VS. TEMPERATURE	TEMPERATURE RANGE
A	$\pm 0.1$ ppm for AT-CUT	$0/+50^{\circ}\text{C}$
B	$\pm 0.05$ ppm for SC-CUT	$0/+50^{\circ}\text{C}$
C	$\pm 0.2$ ppm for AT-CUT	$-20/+70^{\circ}\text{C}$
D	$\pm 0.1$ ppm for SC-CUT	$-20/+70^{\circ}\text{C}$
E	$\pm 0.5$ ppm for AT-CUT	$-40/+75^{\circ}\text{C}$
F	$\pm 0.3$ ppm for SC-CUT	$-40/+75^{\circ}\text{C}$

**TABLE 2 - OUTPUT WAVEFORM AND LOAD CHARACTERISTICS**

OUTPUT WAVEFORM	OUTPUT TYPE CODE	FREQUENCY RANGE	OSCILLATION STATE	OUTPUT CHARACTERISTICS
CLIPPED SINE WAVE	0	8.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: 10 kΩ/10pF Output level: >1Vp-p
TTL	1	1.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: max. 10 low power consumption TTL "1" level: >+2.4 VDC / "0" level: <+0.2 VDC Duty Cycle: 45/55% / Tr and Tf: <6ns
HCMOS	2	1.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: max. 10 low power consumption TTL/HCMOS gates "1" level: >+4.5 VDC / "0" level: <+0.5 VDC Duty Cycle: 45/55% / Tr and Tf: <6ns
ACMOS	3	1.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: max. 10 low power consumption TTL/ACMOS gates "1" level: >+4.5 VDC / "0" level: <+0.5 VDC Duty Cycle: 45/55% / Tr and Tf: <6ns

**PART NUMBERING SYSTEM**

EXAMPLE	OC20-5-S-D-2-10.000MHz			
TYPE	VCC	CRYSTAL CUT	FREQUENCY STABILITY VS. TEMPERATURE	OUTPUT TYPE - FREQUENCY
OC20	5 for 5 Volt 12 for 12 Volt	A for AT-CUT S for SC-CUT	SEE TABLE 1	SEE TABLE 2 - FREQUENCY

**OUTLINE DRAWING OF OCXO-20**

