

# THT OCXO-20

## SERIES "OCXO" - Oven controlled crystal oscillator

### FEATURES

- + High reliability for low cost
- + Aging of  $\pm 0.001$ ppm/day in compact package using SC-CUT crystals
- + Extended temperature range to  $-40/+75^{\circ}\text{C}$  available
- + Short warm-up time and excellent retrace behaviour
- + Low power consumption and excellent phase noise parameters
- + AT-cut and SC-cut based designs



PB FREE / ROHS-2 2011/65/EU COMPLIANT

### GENERAL DATA

PARAMETERS		PRODUCT FEATURES AND CONDITIONS
SERIES		OCXO-20
PACKAGE		20.5 x 20.5 x 10.5 mm <sup>3</sup>
FREQUENCY RANGE		2.0 ~ 100.0 MHz
FREQUENCY ACCURACY		$\pm 0.2$ ppm (control voltage centered)
FREQUENCY STABILITY	VS. AGING AT-CUT	$\pm 0.002$ ppm/day / $\pm 0.3$ ppm/first year / $\pm 2$ 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	$\pm 0.01$ ppm / load changement of $\pm 10$ %
	VS. SUPPLY VOLTAGE	$\pm 0.01$ ppm / supply voltage changement of $\pm 5$ %
	VS. TEMPERATURE	See table 1
SHORT TERM STABILITY		$1 \times 10^{-11}$ /s (10 MHz SC)
OPERATING TEMPERATURE RANGE		$0/+50^{\circ}\text{C}$ ~ $-40/+75^{\circ}\text{C}$
STORAGE TEMPERATURE RANGE		$-40/+100^{\circ}\text{C}$
SUPPLY VOLTAGE		+3.3VDC / +5.0VDC / +12VDC
CURRENT CONSUMPTION		3.6 W max. during warm-up / 1.2 W max. when static
WARM-UP TIME	AT-CUT	$\pm 0.2$ ppm <3 minutes
	SC-CUT	$\pm 0.1$ ppm <3 minutes
FREQUENCY CONTROL RANGE	AT-CUT	$\pm 3.0$ ppm
	SC-CUT	$\pm 0.7$ ppm
CONTROL VOLTAGE		0 ~ 3.3 VDC, 0 ~ 5 VDC
SLOPE		POSITIVE
LINEARITY		$\pm 10$ %
PHASE NOISE (10MHz)	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>		

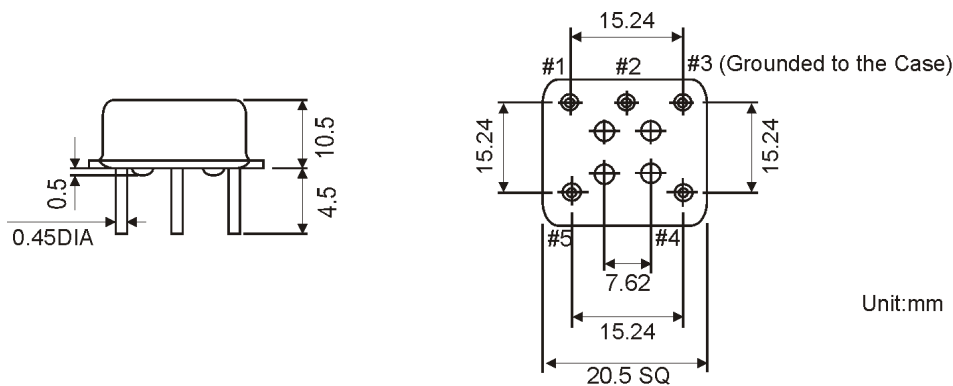
**TABLE 1- FREQUENCY STABILITY VS. TEMPERATURE**

CODE	FREQUENCY STABILITY VS. TEMPERATURE	TEMPERATURE RANGE
A	±50ppb for AT-CUT	0/+50°C
B	±5ppb for SC-CUT	0/+50°C
C	±100ppb for AT-CUT	-20/+70°C
D	±10ppb for SC-CUT	-20/+70°C
E	±100ppb for AT-CUT	-40/+75°C
F	±30ppb for SC-CUT	-40/+75°C

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

OUTPUT WAVE-FORM	OUTPUT TYPE CODE	FREQUENCY RANGE	OSCILLATION STATE	OUTPUT CHARACTERISTICS
SINE WAVE	S	2.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: 50 Ω Output level: >2dBm Harmonic : < -25dBm Noise Suppression: <- 75dBm
HCMOS	H	2.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: 15PF TYP/50 PF Max. available "1" level: > 0.9VDD; "0" level: <0.1VDD Duty cycle: 45/55 Rise/fall time: <6ns(fn<40MHz) <3ns(fn>40 MHz)
LVC MOS	L	2.000 ~ 30.000 MHz 10.000 ~ 100.000 MHz	F: FUNDAMENTAL O: OVERTONE	Load: 15PF TYP/50 PF Max. available "1" level: > 0.9VDD; "0" level: <0.1VDD Duty cycle: 45/55 Rise/fall time: <6ns(fn<40MHz) <3ns(fn>40 MHz)

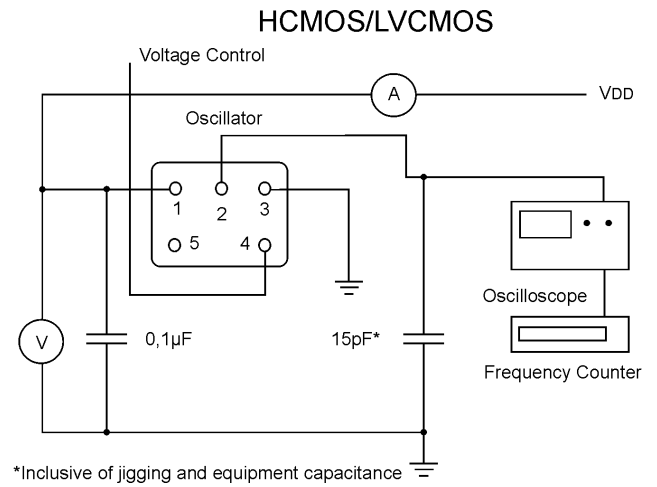
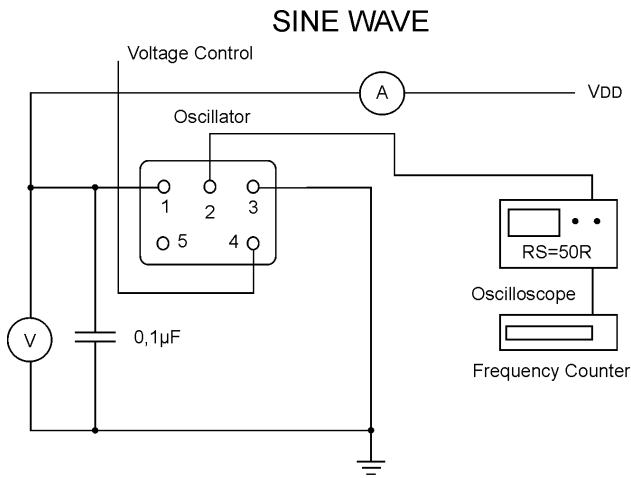
**OUTLINE DRAWING**



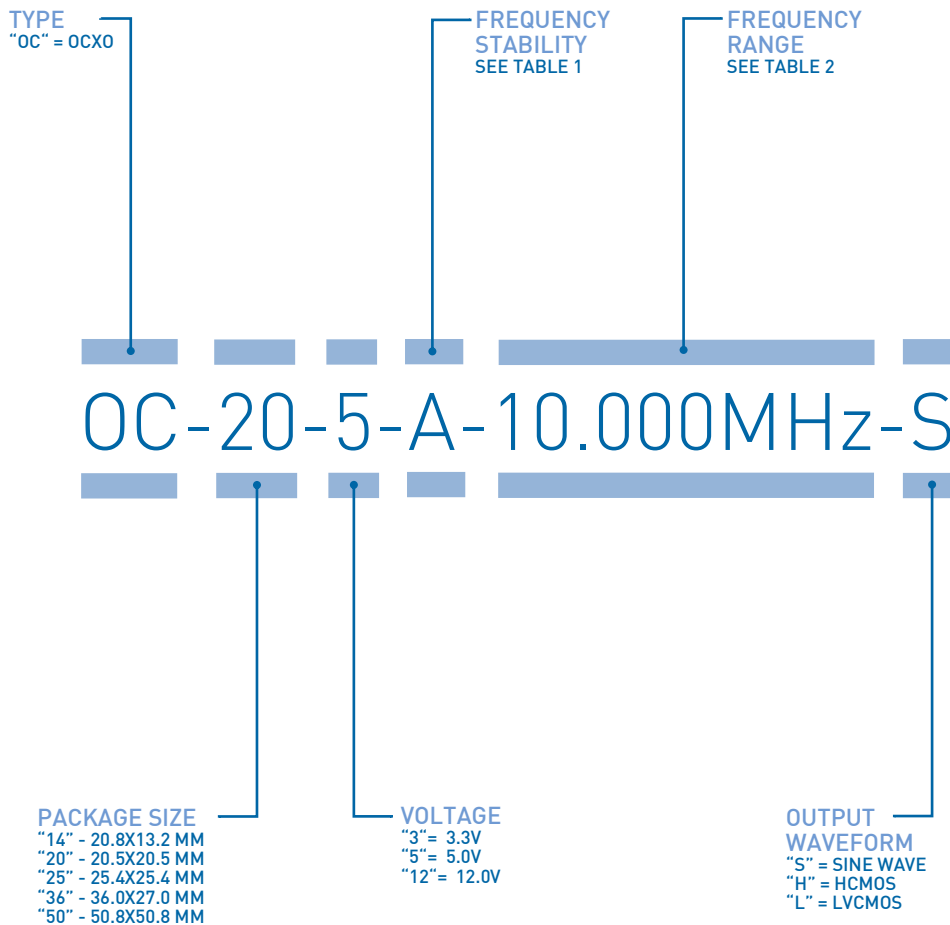
PIN	Connection
#1	Power Supply
#2	Output
#3	Ground
#4	Control Voltage
#5	Reference Voltage/NC

Unit:mm

## TEST CURCUIT



## ORDERING INFORMATION



EXAMPLE: OC-20-5-A-10.000MHz-S

PLEASE INDICATE YOUR REQUIRED PARAMETERS



## PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 IN OCTOBER 2016 BY THE DMSZ CERTIFIKATION GMBH.

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.