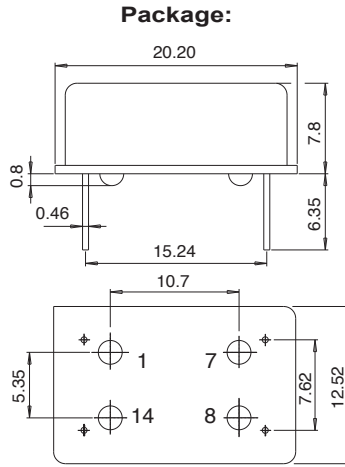




### DIMENSIONS



**Pin out**  
 Pin 1 = Voltage control  
 Pin 7 = GND  
 Pin 8 = Fout  
 Pin 14 = Vdd

All dimensions in mm typical

Oven control quartz crystal oscillator  
 Fundamental mode frequency  
 High shock and vibration resistance  
 Wide temperature range  
 Low aging  
 Customer specification on request  
 Very fast warm up  
 Low power consumption  
 Swiss made quality

### DESCRIPTION:

This DIL 14 package has been specially designed for the applications:

- Digital switching
- Telecom transmission
- Sonet / SDH / DWDM / FDM/36 / WIMAX
- Airbone equipments
- Battery operated systems
- Instrumentation
- Radio Transceiver

The OCXO are supplied on trays (50 pcs/tray).

### ELECTRICAL CHARACTERISTICS AT 25°C

<b>Frequency versus temperature</b> A: 0 to +60°C B: -20 to +70°C C: -40 to +85°C	$\Delta F/F$	see table 1 (without air flow)			
<b>Frequency long term aging 1)</b> long term aging 10 years long term aging 1 <sup>st</sup> year	$\Delta F/F$	< $\pm 2.5$ $\leq \pm 0.3$			ppm
Frequency control range	Vc	$\geq \pm 2.5$ (see table 3)			ppm
Supply voltage	Vdd	3.3 / 5 / 12			V
Input current	Idd	see table 2			
Output signal sine wave		see table 4			
Start-up time	t	< 5			ms
Frequency stability versus load $\pm 5\%$	$\Delta F/F$	$\leq \pm 10$			ppb
Warm-up within $\pm 0.1$ ppm at 25°C	Vdd	3.3	5	12	V
	t	$\leq 120$	$\leq 60$	$\leq 30$	s
Stability versus Vdd	$\Delta F/F$	< $\pm 0.1$			ppm
Short term stability 0.1 to 30s 5E-11 typ at 1s	Tau	< 1			E-10
Phase noise typical at 10 MHz Static conditions BW = 1Hz		3.3V / 5V		12V	dBc/ Hz
		10Hz	-110	-100	
		100Hz	-135	-130	
		1 kHz	-145	-140	
		10 kHz	-150	-145	

1)  $\leq \pm 1$  E-9 / day after 30 days operating

**TABLE 1: Vdd = 3.3V**

Operating Temperature range	Vdd = 3.3V ± 0.15V
A = 0 to +60°C	≤ ± 50 ppb
B = -20 to +70°C	≤ ± 75 ppb
C = -40 to +85°C	≤ ± 100 ppb

**TABLE 1: Vdd = 5V**

Operating Temperature range	Vdd = 5V ± 0.2V
A = 0 to +60°C	≤ ± 25 ppb
B = -20 to +70°C	≤ ± 50 ppb
C = -40 to +85°C	≤ ± 100 ppb

**TABLE 1: Vdd = 12V**

Operating Temperature range	Vdd = 12V ± 0.5V
A = 0 to +60°C	≤ ± 25 ppb
B = -20 to +70°C	≤ ± 50 ppb
C = -40 to +85°C	≤ ± 100 ppb

**TABLE 2: Idd**

Temperature	Vdd = 3.3V	Vdd = 5V	Vdd = 12V
+25°C	≤ 120 mA	≤ 80 mA	≤ 50 mA
-20°C	≤ 170 mA	≤ 110 mA	≤ 80 mA
start-up current at 25°C duration	≤ 350mA 30s	≤ 300mA 10s	≤ 250mA 10s

**TABLE 3: VC**

Frequency control adjustment response slope positive	Vdd = 3.3V	Vdd = 5V	Vdd = 12V
Voltage control input impedance > 47kΩ	0 to 3.3V	0.5 to 5V	0.5 to 5V
Resistor control R connect pin 1 to ground (Input impedance > -4,7kΩ)	0 to 10kΩ	0 to 10kΩ	0 to 10kΩ
No frequency control YA or YB	Pin 1 connect to GND		

**TABLE 4: OUTPUT SIGNAL**

Vdd	3.3V	5V	12V
Load	50Ω	50Ω	1kΩ // 5pf
Level ≤20MHz	≥ 2dBm	≥ 4dBm	>1Vpp
Level >20MHz	≥ -2dBm	≥ 0dBm	>1Vpp
Harmonics	-10dBc	-10dBc	-10dBc
Spurious	-70dBc	-70dBc	-70dBc



Micro Crystal AG  
Mühlestrasse 14  
CH-2540 Grenchen  
Switzerland

Tel. +41 32 655 82 82  
Fax +41 32 655 80 90  
sales@microcrystal.com  
www.microcrystal.com

**STANDARD FREQUENCIES:**

Frequency «MHz»						
10	12	12.8	14.7456	16	20	26
40	52	54				
Other frequencies from 10 kHz up to 54 MHz on request						

**ENVIRONMENTAL CHARACTERISTICS:**

Storage temp. range	-65 to +125°C
Vibration resistance	10 to 2000Hz / 20g
Shocks resistance	5000g / 0.3ms / ½ sine

**TERMINATIONS AND PROCESSING:**

pins soldering	+235°C / 10s max
Package SMD version option D1 or D2 see application notes	Dil 14.4 pins GND to case height = 8mm

**PRODUCT DESCRIPTION AND ORDERING INFORMATION:**

**SCOCXOV S - C V5 20MHz XXX**

W = Vdd 3.3V  
V = Vdd 5V  
blank = Vdd 12V

S = Sine wave

A = 0 to 60°C  
B = -20 to 70°C  
C = -40 to 85°C  
X = custom

R1 = R = 0 to 10kΩ  
V3 = Vc = 0 to 3.3V  
V5 = Vc = 0.5 to 5V

YA internal accuracy= ± 1ppm  
YB internal accuracy= ± 0.5ppm  
Y = custom

Frequency

customer spec N°

A unique part number will be generated for each product specification, i.e:  
**20xxxx-EA00** (in ESD plastic tray)  
Please contact us.

All specifications subject to change without notice.



Micro Crystal AG  
Mühlestrasse 14  
CH-2540 Grenchen  
Switzerland

Tel. +41 32 655 82 82  
Fax +41 32 655 80 90  
sales@microcrystal.com  
www.microcrystal.com