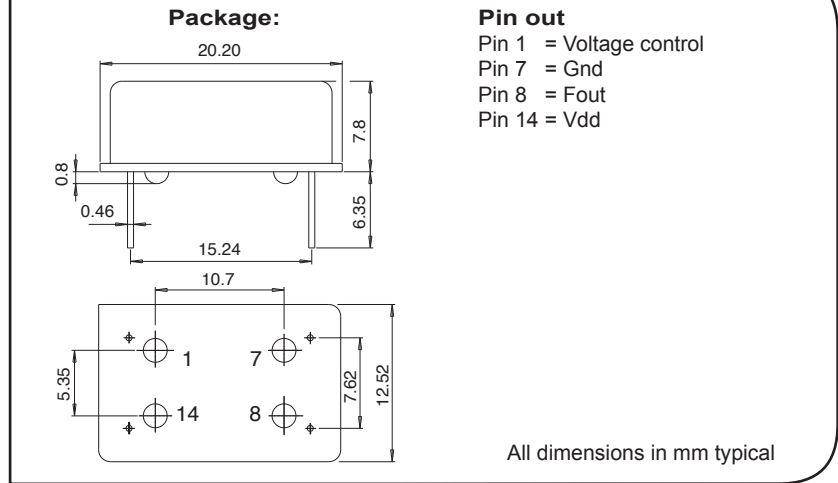




**DIMENSIONS**



- 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 E: -55 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	$\Delta F/F$	<math>\pm 3</math> <math>\pm 0.5</math>		ppm	
Frequency control range	Vc	$\geq \pm 3$ (see table 3)		ppm	
Supply voltage	Vdd	3.3 / 5 / 12		V	
Input current	Idd	see table 2			
Output signal		HC MOS compatible			
Symmetry at Vdd/2		40 / 60		%	
Rise & fall time (without load)		$\leq 7$		ns	
Level "0" & "1"		$<0.4> V_{cc}-0.5$		V	
Start-up time	t	$< 5$		ms	
Load min / max		3/47		pF	
Frequency stability versus load $\pm 10\%$	$\Delta F/F$	$\leq \pm 10$		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	$< 5$		E-10	
Phase noise typical at 10 MHz Static conditions BW = 1Hz		3.3V / 5V		dBc/ Hz	
		12V			
	10Hz	-100	-90		
	100Hz	-130	-120		
	1 kHz	-140	-130		
10 kHz	-145	-135			

1)  $< \pm 1 E-9 / \text{day}$  after 30 days operating

**TABLE 1: Vdd = 3.3V**

Operating Temperature range	Vdd = 3.3V ± 0.15V	
	Version standard	Version T high stability
A = 0 to +60°C	≤ ± 200 ppb	≤ ± 75 ppb
B = -20 to +70°C	≤ ± 300 ppb	≤ ± 150 ppb
C = -40 to +85°C	≤ ± 500 ppb	≤ ± 250 ppb

**TABLE 1: Vdd = 5V**

Operating Temperature range	Vdd = 5V ± 0.2V	
	Version standard	Version T high stability
A = 0 to +60°C	≤ ± 200 ppb	≤ ± 75 ppb
B = -20 to +70°C	≤ ± 300 ppb	≤ ± 150 ppb
C = -40 to +85°C	≤ ± 500 ppb	≤ ± 250 ppb
E = -55 to +85°C	≤ ± 700 ppb	≤ ± 300 ppb

**TABLE 1: Vdd = 12V**

Operating Temperature range	Vdd = 12V ± 0.5V	
	Version standard	Version T high stability
A = 0 to +60°C	≤ ± 200 ppb	≤ ± 50 ppb
B = -20 to +70°C	≤ ± 300 ppb	≤ ± 100 ppb
C = -40 to +85°C	≤ ± 500 ppb	≤ ± 200 ppb
E = -55 to +85°C	≤ ± 700 ppb	≤ ± 300 ppb

**TABLE 2: Idd**

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



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**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	-55 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 +260°C / 5s 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:**

**OCXO V T - C V5 20MHz XXX**

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

T = high stability  
blank = standard stability

A = 0 to +60°C  
B = -20 to +70°C  
C = -40 to +85°C  
E = -55 to +85°C  
X = custom

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



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