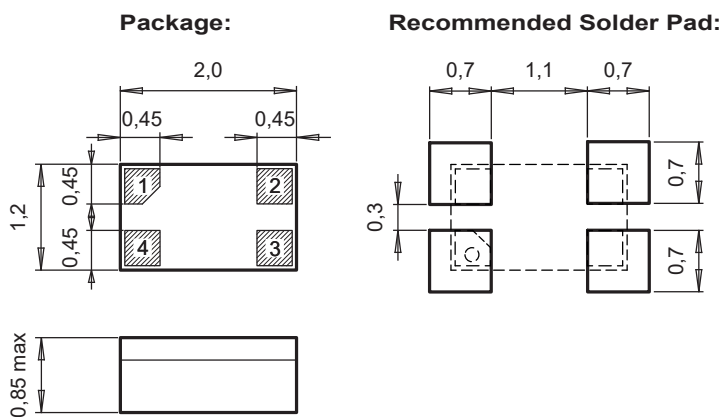


# OV-0100-C8 Medical

## Low Power Clock Oscillator 100.000 kHz



### DIMENSIONS



All dimensions in mm typical

### APPLICATIONS

Pacemakers  
Defibrillators  
Neurostimulators  
Cardiac Monitoring Devices  
Implantable Drug Delivery Pumps  
Infusion Pumps  
Cochlear Implants  
Smart Orthopedic Implants

### DESCRIPTION

The OV-0100-C8 Medical Low Frequency Oscillator is manufactured specifically for use in implantable medical devices. It incorporates a CMOS circuit and built in 100.000 kHz crystal. Micro Crystal's long history in supplying medical grade timing devices ensures that the OV-0100-C8 Medical is produced in accordance with the highest quality production technologies. Long-term reliability is of utmost importance (Class III Implantable) and a hallmark of Micro Crystal's entire medical implantable grade portfolio.

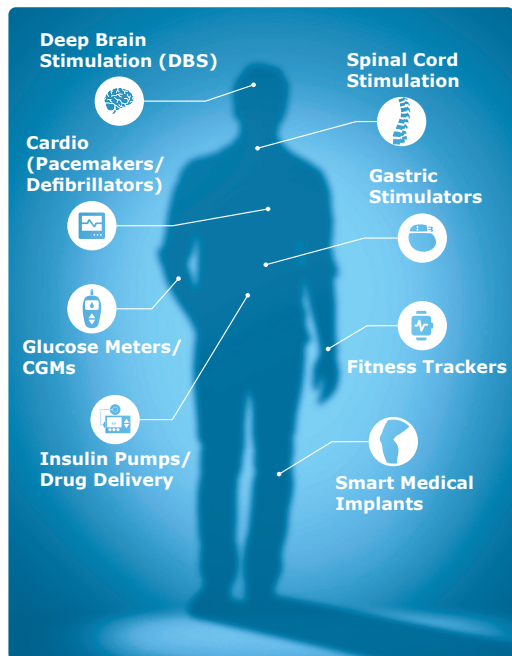
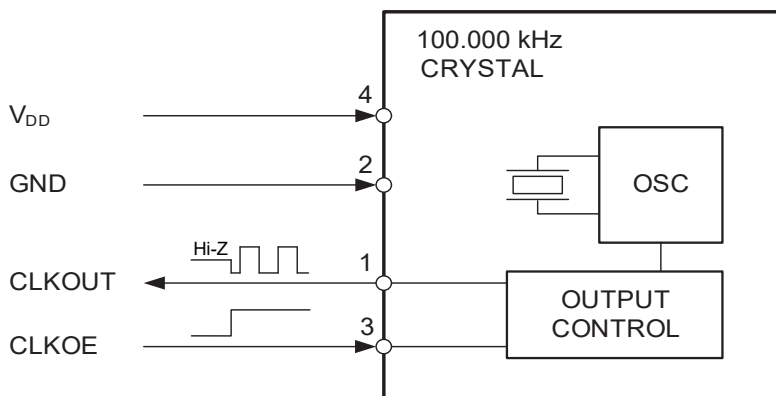
### MEDICAL IMPLANTABLE KEY FEATURES

- Safe for Helium environment: Ceramic lid with gold-tin preform-seal for best long-term hermeticity and stability
- Proprietary manufacturing and testing processes
- Long-term aging stability
- Extended operating temperature range: -40°C to +125°C
- Customer specific testing/screening on request
- Components and manufacturing traceability records retained
- Small size, low profile, lightweight (6.0 mg)

### FEATURES

- Very low power consumption: 550 nA @ 3 V
- Wide operating voltage range: 1.6 V to 5.5 V
- CLKOUT enable/disable

### BLOCK DIAGRAM



## ELECTRICAL CHARACTERISTICS AT 25°C

More detailed information can be found in the Application Manual.

Output Frequency	F	100.000	kHz
Frequency tolerance	<sup>1)</sup> $\Delta F/F$	±100	ppm
Supply voltage	V <sub>DD</sub>	1.6 – 5.5	V
Current consumption (typ./max.)	<sup>2)</sup> I <sub>DD</sub>	0.55 / 0.75	µA
Start up time (max.)	t <sub>start</sub>	0.5	s
Aging first year max. @ 25°C	$\Delta F/F$	±2	ppm
Turnover temperature (typ.)	T <sub>0</sub>	28 ±5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C} \cdot (T-T_0)^2 \pm 10\%$	ppm

1) Other tolerances on request.

2) V<sub>DD</sub> = 3.0 V, CLKOE = LOW.

## ENVIRONMENTAL CHARACTERISTICS

		Conditions	Max. Dev.
Storage temperature range		–55 to +125°C	
TA Operating temperature range		–40 to +85°C	
TB Extended oper. temp. range		–40 to +125°C	
Shock resistance	$\Delta F/F$	5000 g, 0.3 ms, ½ sine	±5 ppm
Vibration resistance	$\Delta F/F$	20 g / 10–2000 Hz	±5 ppm

## TERMINATIONS AND PROCESSING

Type	Termination	Processing
OV-0100-C8 T1	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
OV-0100-C8 T2	SnPb plated pads available only on request	
OV-0100-C8 T5	ENEPIG plated pads	

## PIN CONNECTIONS TOP VIEW

		<b>Pin</b>	<b>Connection</b>
		1	CLKOUT Clock Output
		2	GND Ground
		3	CLKOE Clock Output Enable
		4	V <sub>DD</sub> Power Supply Voltage

## ORDERING INFORMATION

<b>OV - 0100 - C8 T1 ±20 ppm TA QM</b>	
<b>Oscillator module</b>	<b>Qualification</b> QM = Medical Grade
<b>Frequency</b> 0100 = 100.000 kHz	<b>Temperature range</b> TA = –40 to +85°C TB = –40 to +125°C
<b>Package size</b> C8 = 2.0 x 1.2 x 0.85 mm	<b>Frequency tolerance</b> ±20 ppm Other freq. tolerances on request
<b>Pads</b> T1 = Au flashed pads T2 = SnPb plated pads on request T5 = ENEPIG plated pads	
A unique part number will be generated for each product specification, i.e:	
20xxxx-MC00	yyy pcs (in 8 mm tape on 7" reel)
20xxxx-MC01	1'000 pcs (in 8 mm tape on 7" reel)
20xxxx-MC03	3'000 pcs (in 8 mm tape on 7" reel)

All specifications subject to change without notice.



A COMPANY OF THE SWATCH GROUP

Micro Crystal AG  
Muehlestrasse 14  
CH-2540 Grenchen  
Switzerland

Phone +41 32 655 82 82  
sales@microcrystal.com  
www.microcrystal.com