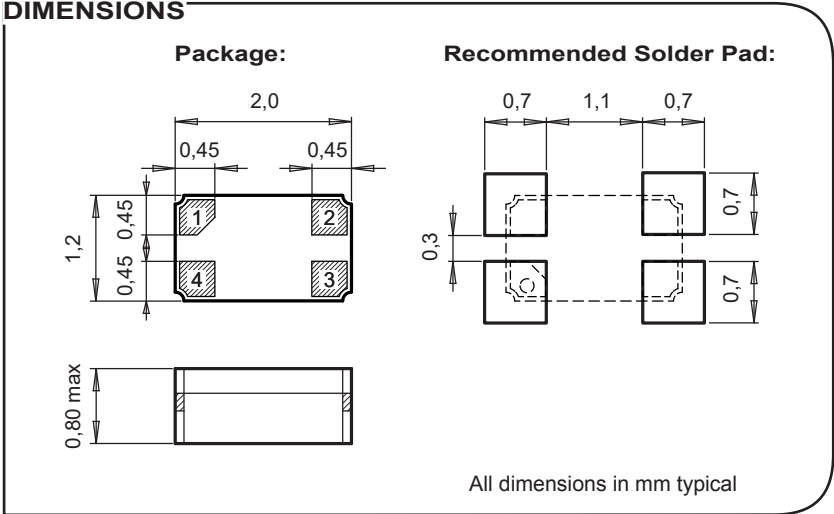


# OV-0100-C8 Medical

## Low Power Clock Oscillator 100.000 kHz



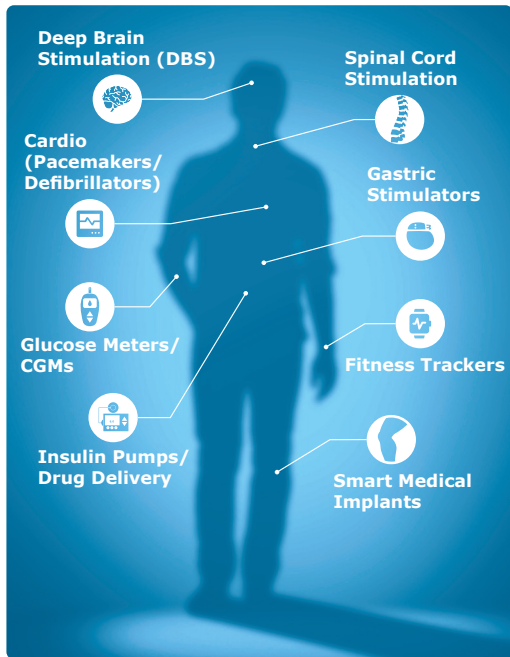
### APPLICATIONS

- 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.



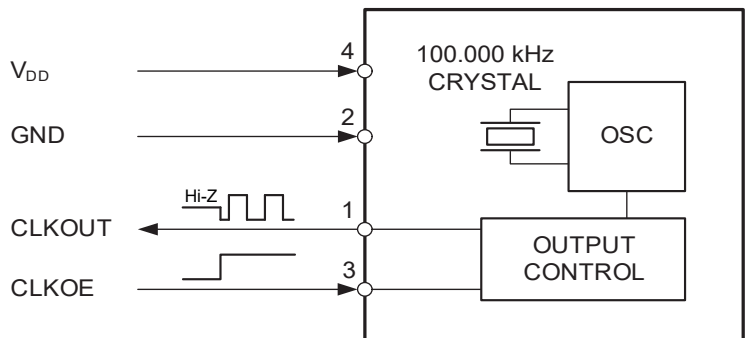
### MEDICAL IMPLANTABLE KEY FEATURES

- 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 (5.2 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> $\Delta F/F$	$\pm 20$	ppm
Supply voltage	$V_{DD}$	1.6 – 5.5	V
Current consumption (typ./max.)	<sup>2)</sup> $I_{DD}$	0.55 / 0.75	$\mu A$
Start up time (max.)	$t_{start}$	0.5	s
Aging first year max. @ 25°C	$\Delta F/F$	$\pm 2$	ppm
Turnover temperature (typ.)	$T_0$	28 $\pm 5$	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ C \cdot (T-T_0)^2 \pm 10\%$	ppm

1) Other tolerances on request.

2)  $V_{DD} = 3.0 \text{ V}$ , CLKOE = LOW.

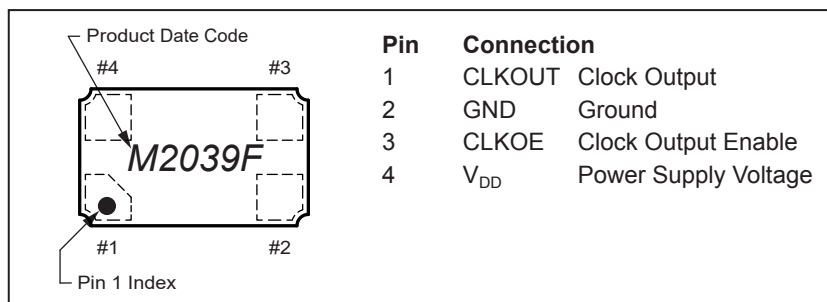
## ENVIRONMENTAL CHARACTERISTICS

	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, 1/2 sine	$\pm 5$ ppm
Vibration resistance	$\Delta F/F$ 20 g / 10–2000 Hz	$\pm 5$ 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 T5	ENEPIG plated pads	

## PIN CONNECTIONS TOP VIEW



## ORDERING INFORMATION

OV - 0100 - C8 T1 $\pm 20$ ppm TA QM	
<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 0.80 mm	<b>Frequency tolerance</b> $\pm 20$ ppm Other freq. tolerances on request
<b>Pads</b> T1 = Au flashed pads 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.



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