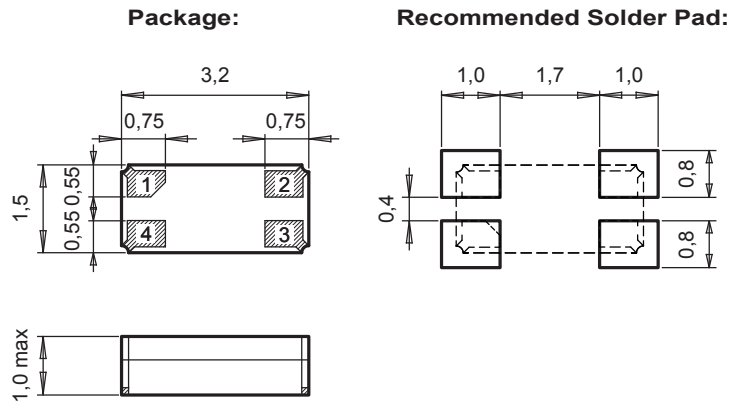


# OV-7604-C7

Low Power Clock Oscillator 32.768 kHz



## DIMENSIONS



All dimensions in mm typical

## APPLICATIONS

IoT  
 Metering  
 Industrial  
 Automotive  
 Health Care  
 Wearables, Portables

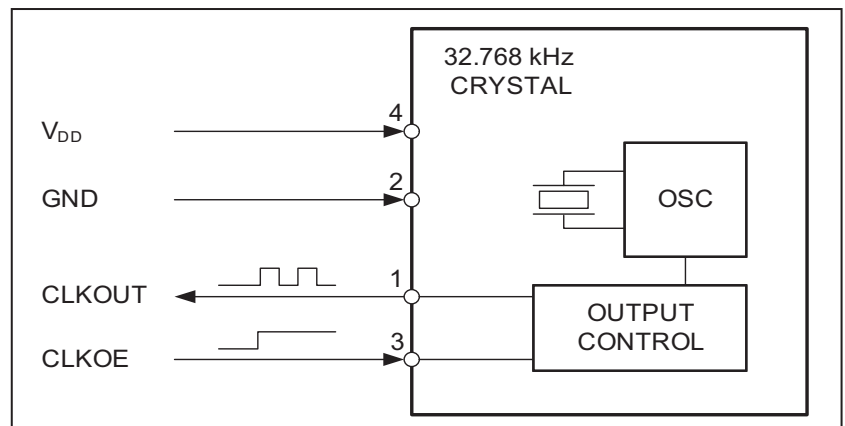
## DESCRIPTION

The OV-7604-C7 is a Low Frequency SMD Oscillator that incorporates an integrated CMOS circuit together with an XTAL. It operates under vacuum in a hermetically sealed ceramic package with ceramic lid.

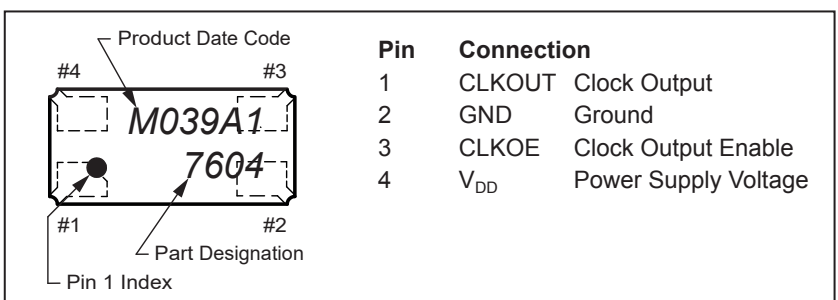
## FEATURES

- Wide supply voltage range.
- Very low power consumption.
- Synchronized CLKOUT enable/disable.
- Small size, low profile, lightweight (12.4 mg).
- High shock and vibration resistant.
- 100% Pb-free, RoHS-compliant.
- Automotive qualification according to AEC-Q200 available.

## BLOCK DIAGRAM



## PIN CONNECTIONS TOP VIEW



## ELECTRICAL CHARACTERISTICS AT 25°C

More detailed information can be found in the Application Manual.

Output Frequency	F	32.768	kHz
Frequency tolerance	<sup>1)</sup> $\Delta F/F$	±20	ppm
Supply voltage	V <sub>DD</sub>	1.2 – 5.5	V
Current consumption (typ./max.)	<sup>2)</sup> I <sub>DD</sub>	0.3 / 0.5	µA
Duty cycle (min./max.)		40 / 60	%
Start up time (max.)	t <sub>start</sub>	0.5	s
Voltage coefficient (max.)		±1.5	ppm/V
Aging first year max. @ 25°C	$\Delta F/F$	±3	ppm
Turnover temperature (typ.)	T <sub>0</sub>	25 ±5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 \pm 10\%$	ppm

1) Tighter tolerances on request.

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

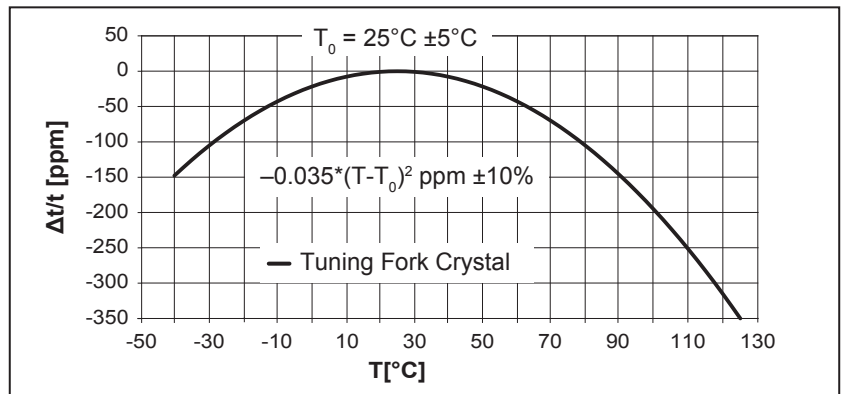
## ENVIRONMENTAL CHARACTERISTICS

	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-7604-C7	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

## FREQUENCY TEMPERATURE CHARACTERISTICS



## ORDERING INFORMATION

**O V - 7604 - C7 ±20 ppm TA QC**

<b>Oscillator</b>		<b>Qualification</b>
<b>Ceramic lid</b>		<b>QC</b> = Commercial Grade (Standard)
<b>Frequency</b>	<b>7604</b> = 32.768 kHz	<b>QA</b> = Automotive Grade AEC-Q200
<b>Package size</b>	<b>C7</b> = 3.2 x 1.5 x 1.0 mm	<b>QM</b> = Medical Grade
		<b>Temperature range</b>
		<b>TA</b> = -40 to +85°C (Standard)
		<b>TB</b> = -40 to +125°C
		<b>Frequency tolerance</b>

A unique part number will be generated for each product specification, i.e.:

20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12 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

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## Micro Crystal:

[OV-7604-C7-32.768kHz-20PPM-TA-QC](#) [OV-7604-C7-32.768kHz-20PPM-TB-QC](#) [OV-7604-C7-32.768kHz-10PPM-TA-QC](#) [OV-7604-C7-32.768k-20PPM-TB-QA](#) [OV-7604-C7-32.768k-10PPM-TB-QA](#) [OV-7604-C7-32.768k-20PPM-TA-QA](#)  
[OV-7604-C7-TB-QA-020](#)