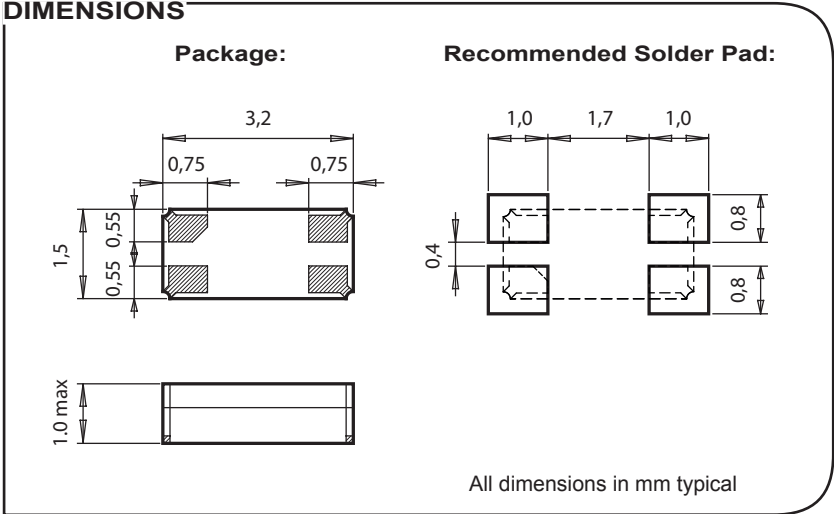


# OV-7604-C7

## Low Power Clock Oscillator 32.768 kHz



**APPLICATIONS**

- Metering
- Industrial
- Automotive
- Health Care
- Medical Implantable

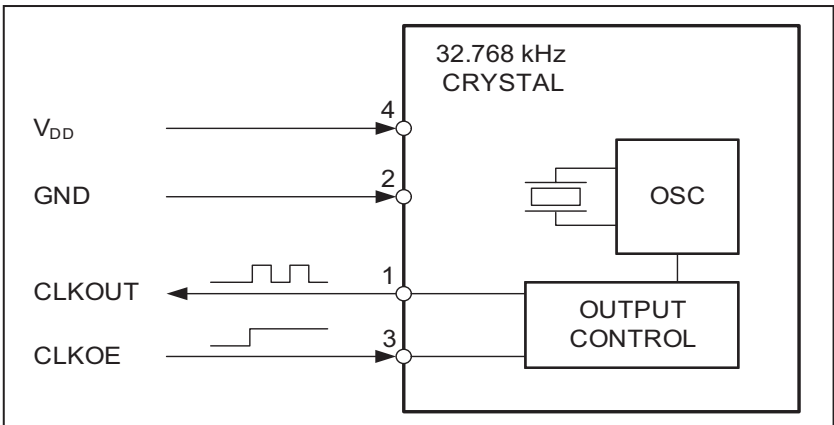
**DESCRIPTION**

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

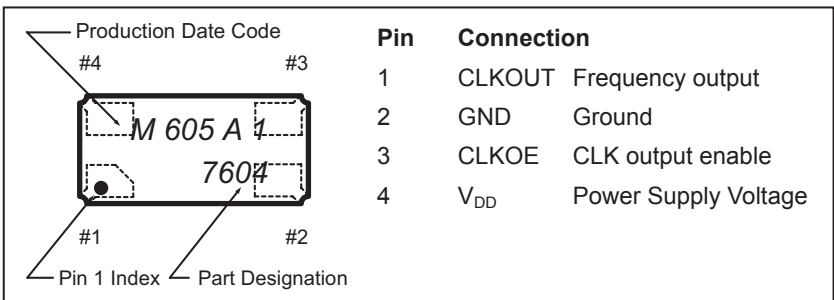
**FEATURES**

- Wide supply voltage range.
- Very low power consumption.
- Synchronized 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> ΔF/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	ΔF/F	±3	ppm
Turnover temperature (typ.)	T <sub>0</sub>	25 ±5	°C
Frequency vs. temperature	ΔF/F <sub>0</sub>	-0.035 ppm/°C <sup>2</sup> (T - T <sub>0</sub> ) <sup>2</sup> ±10%	ppm

1) Tighter tolerances on request.

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

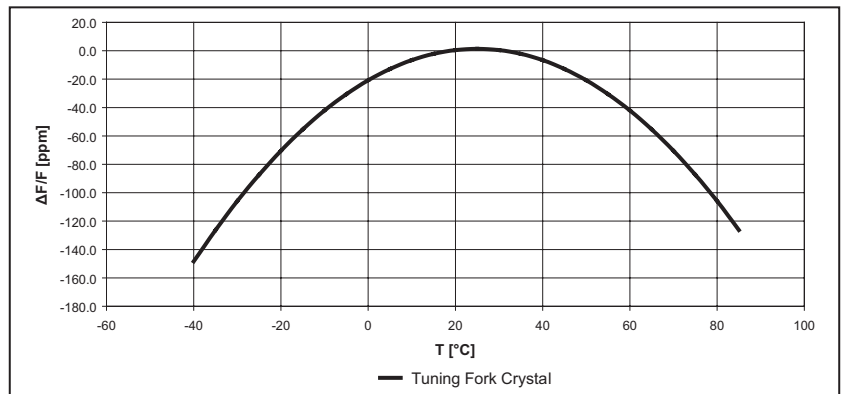
## ENVIRONMENTAL CHARACTERISTICS

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

## TERMINATIONS AND PROCESSING

Type	Termination	Processing
OV-7604-C7	For SMT mounting 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**

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



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