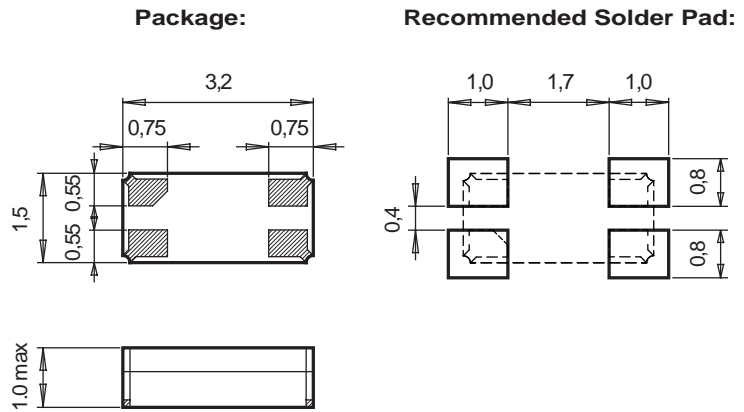


# OV-7604-C7

**Low Power Clock Oscillator 32.768 kHz**



## DIMENSIONS



All dimensions in mm typical

## APPLICATIONS

Metering  
Industrial  
Automotive  
Health Care  
Medical Implantable

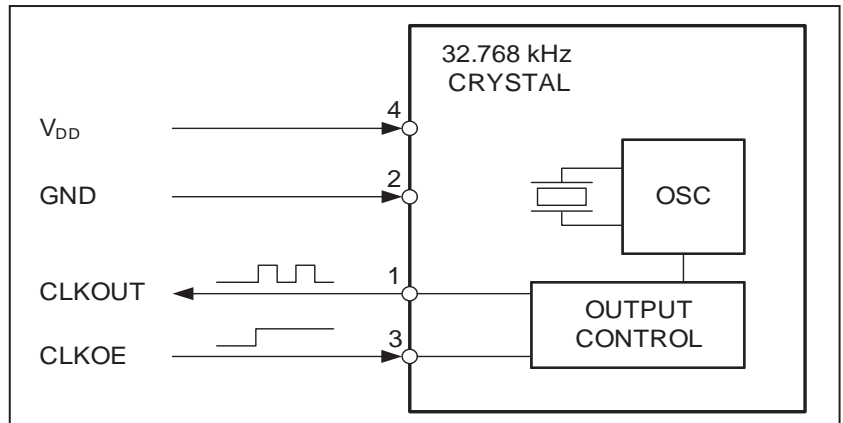
## DESCRIPTION

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.

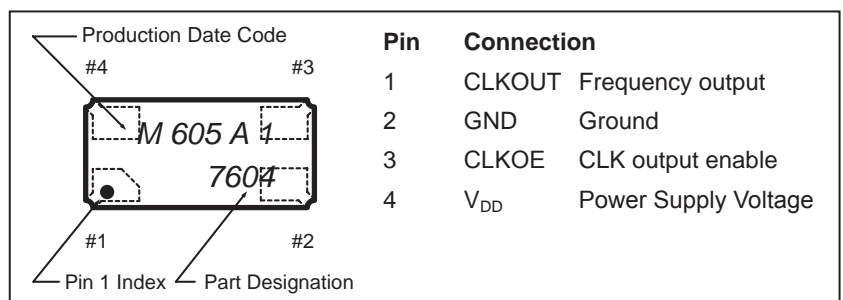
## FEATURES

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> $\Delta F/F$	$\pm 20$	ppm
Supply voltage	$V_{DD}$	1.2 – 5.5	V
Current consumption (typ./max.)	<sup>2)</sup> $I_{DD}$	0.3 / 0.5	$\mu A$
Duty cycle (min./max.)		40 / 60	%
Start up time (max.)	$t_{start}$	0.5	s
Voltage coefficient (max.)		$\pm 1.5$	ppm/V
Aging first year max. @ 25°C	$\Delta F/F$	$\pm 3$	ppm
Turnover temperature (typ.)	$T_0$	25 $\pm$ 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)  $V_{DD} = 3.0 \text{ V}$ , CLKOE = LOW.

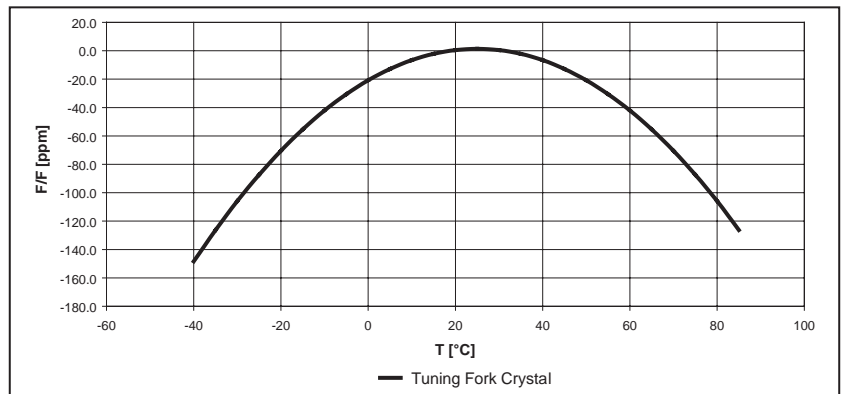
## ENVIRONMENTAL CHARACTERISTICS

	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	$\Delta F/F$ 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-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**

<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.



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