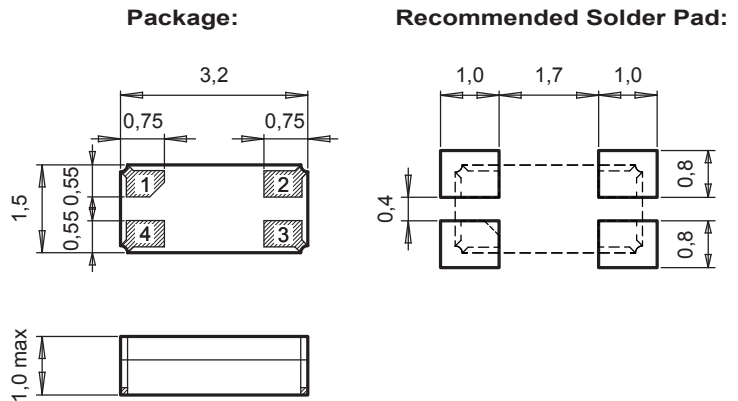


OV-7604-C7

Low Power Clock Oscillator 32.768 kHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

IoT
 Metering
 Industrial
 Automotive
 Health Care
 Wearables, Portables

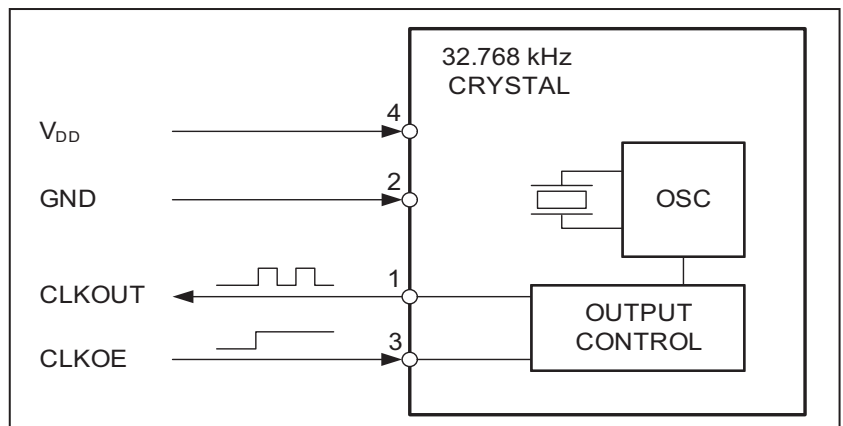
DESCRIPTION

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.

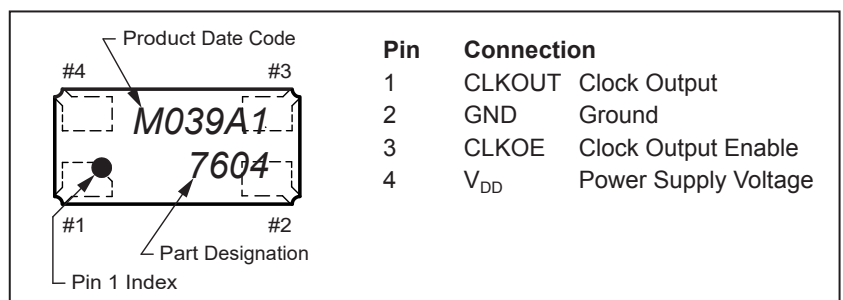
FEATURES

- 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	¹⁾ $\Delta F/F$	±20	ppm
Supply voltage	V _{DD}	1.2 – 5.5	V
Current consumption (typ./max.)	²⁾ I _{DD}	0.3 / 0.5	µA
Duty cycle (min./max.)		40 / 60	%
Start up time (max.)	t _{start}	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 ₀	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_{DD} = 3.0 V, CLKOE = LOW.

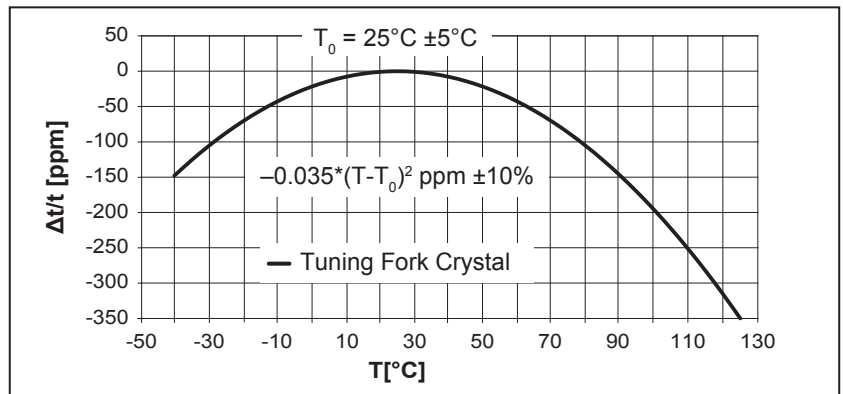
ENVIRONMENTAL CHARACTERISTICS

	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

Oscillator
Ceramic lid
Frequency
 7604 = 32.768 kHz
Package size
 C7 = 3.2 x 1.5 x 1.0 mm

Qualification
QC = Commercial Grade (Standard)
QA = Automotive Grade AEC-Q200
QM = Medical Grade

Temperature range
TA = -40 to +85°C (Standard)
TB = -40 to +125°C

Frequency tolerance

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