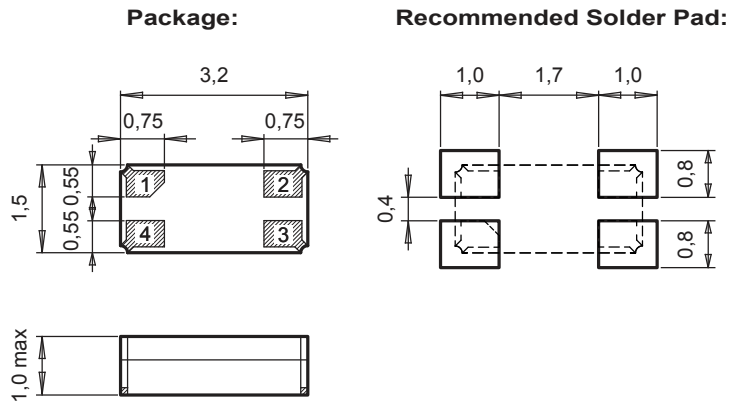


OV-7604-C7

Low Power Clock Oscillator 32.768 kHz



DIMENSIONS



All dimensions in mm typical

APPLICATIONS

IoT
 Metering
 Industrial
 Automotive
 Health Care
 Wearables, Portables

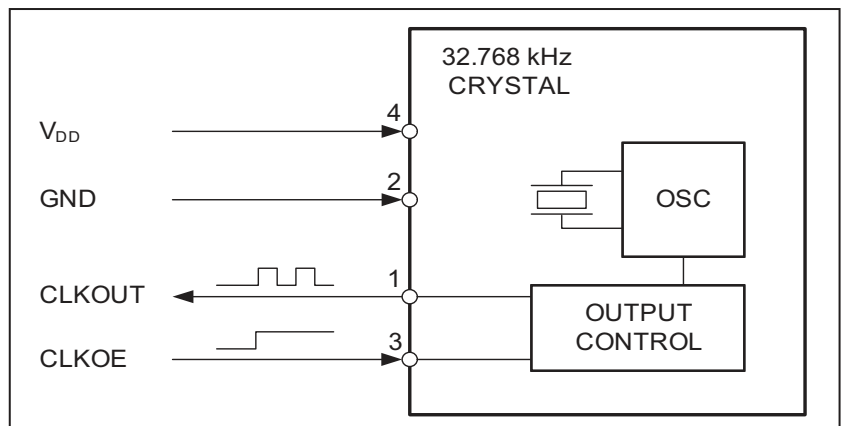
DESCRIPTION

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.

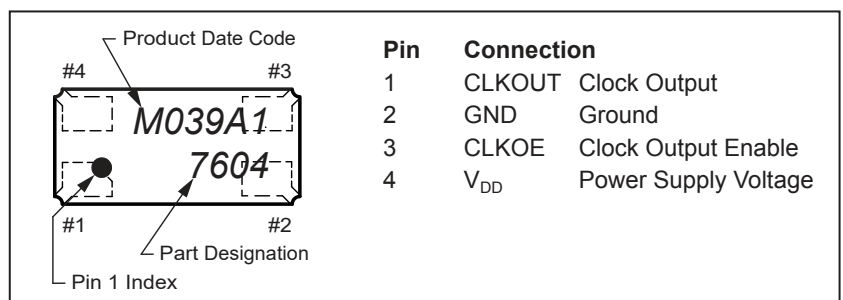
FEATURES

- 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 \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.

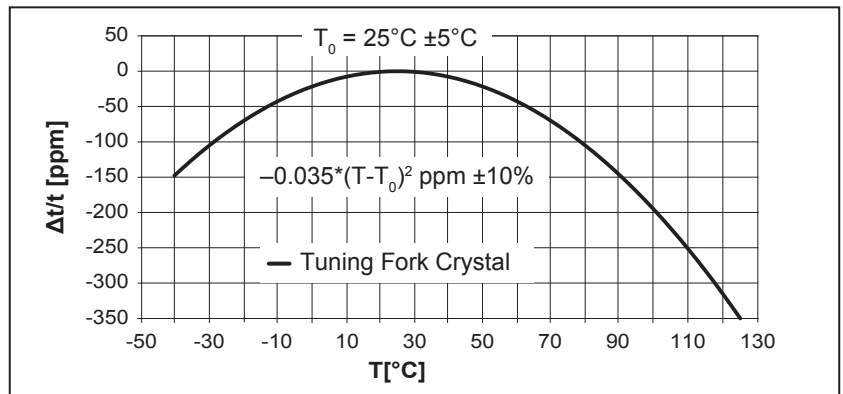
ENVIRONMENTAL CHARACTERISTICS

	Conditions	Max. Dev.
Storage 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	± 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		Qualification
Ceramic lid		QC = Commercial Grade (Standard)
Frequency	7604 = 32.768 kHz	QA = Automotive Grade AEC-Q200
Package size	C7 = 3.2 x 1.5 x 1.0 mm	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.



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