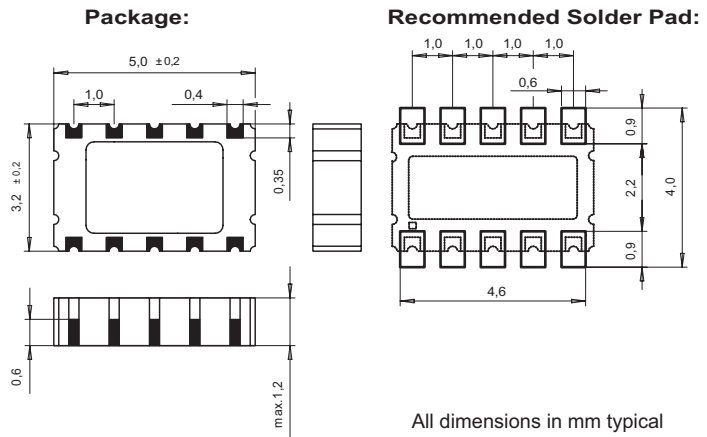


OV-1564-C2

Low Power Clock Oscillator 32.768 kHz



DIMENSIONS



All-in-one-package solution
Miniature ceramic package
Package height 1.2 mm
Very low power consumption
Very tight frequency tolerance
Low aging
High shock and vibration resistant

The OV-1564-C2 is a completely leadfree product.

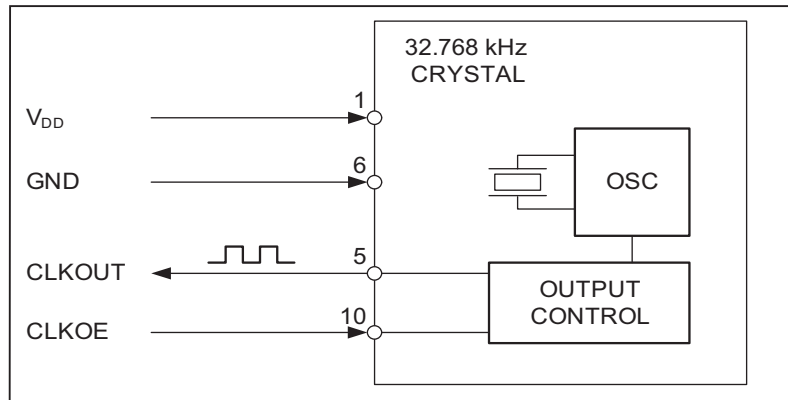
DESCRIPTION:

This very small SMD ceramic package has been specially designed to combine the 32.768 kHz crystal unit with the CMOS-based oscillator circuit. Ultra Low Power consumption, as low as 250 nA, are made possible through 32.768 kHz Tuning-Fork-Crystals and sophisticated CMOS-circuitry.

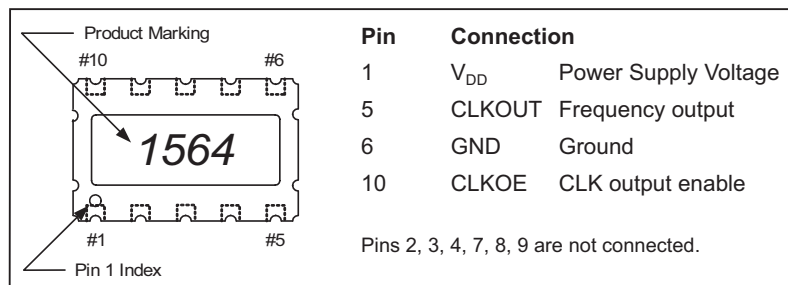
For pick-and-place equipment, the parts are available in 12 mm tape:

- 7" (178 mm) reel with 1'000 oscillators
- 10" (254 mm) reel with 2'500 oscillators
- 13" (330 mm) reel with 5'000 oscillators

BLOCK DIAGRAM:



PIN CONNECTIONS TOP VIEW:



**ELECTRICAL CHARACTERISTICS
AT 25°C:**

Output Frequency	F	32.768	kHz
Frequency tolerance ¹⁾	$\Delta F/F$	+/-20 / +/-10	ppm
Supply voltage	V_{DD}	1.2 – 5.5	V
Current consumption (typ./max.) ²⁾	I_{DD}	0.25 / 0.5	μA
Duty cycle (min./max.)		40 / 60	%
Output voltage (high) ³⁾	V_{OH}	$V_{DD} - 0.4$	V
Output voltage (low) ⁴⁾	V_{OL}	Gnd +0.4	V
Output rise time (max.) ⁵⁾	t_r	50	ns
Output fall time (max.) ⁵⁾	t_f	50	ns
Start up time (max.)	t_{start}	0.6	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	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 +/-10\%$	ppm

- 1) Tighter tolerances on request.
 2) $V_{DD} = 3.0 \text{ V } \overline{OE}$.
 3) $I_{OH} = -1.0 \text{ mA}$.
 4) $I_{OL} = 1.0 \text{ mA}$.
 5) $C_L = 10 \text{ pF}$, 10% to 90%.

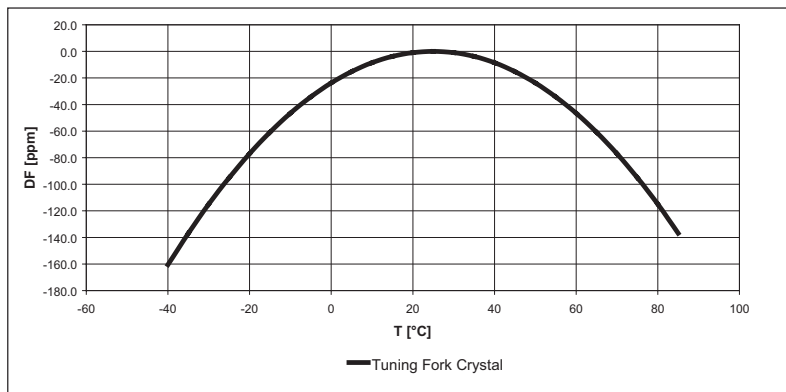
**ENVIRONMENTAL
CHARACTERISTICS:**

		Conditions	Max. Dev.
Storage temp. range		-55 to +125°C	
Industrial operating temp. range		-40 to +85°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:**

Package-Type	Termination	Processing
SON 10-pin	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.

**FREQUENCY TEMPERATURE
CHARACTERISTICS:**



All specifications subject to change without notice. 09.05



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