MICRO CRYSTAL SWITZERLAND

OV-0100-C7

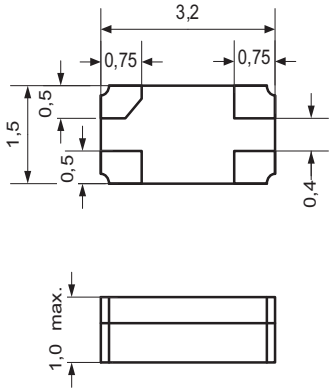
Low Power Clock Oscillator 100.000 kHz



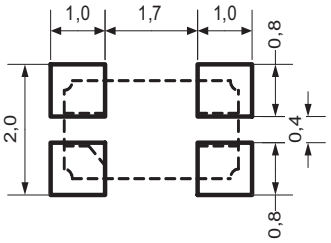
100% leadfree, RoHS - compliant

DIMENSIONS

Package:



Recommended Solder Pad:



All dimensions in mm typical

Xtal integrated solution
Ultra miniature SMT ceramic pack.
Industrial temperature range
Package height 1.0 mm
Very low power consumption
Very tight frequency tolerance
Low aging
High shock and vibration resistance
Available for Medical Implantable applications

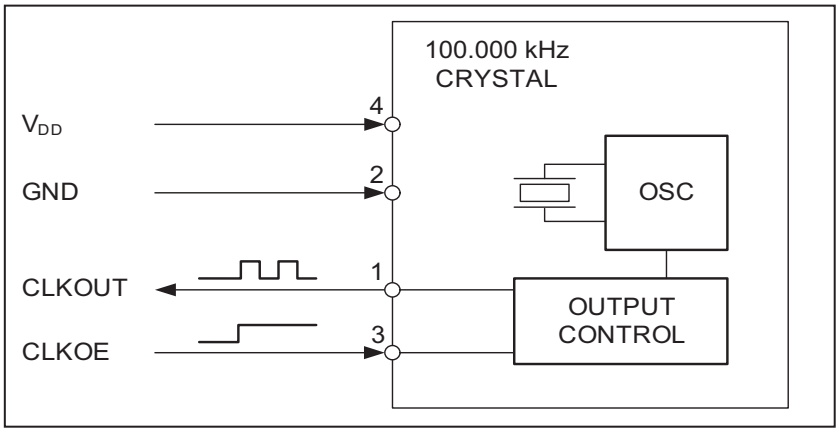
DESCRIPTION:

This very small SMD ceramic package has been specially designed to combine the 100.000 kHz crystal unit with the CMOS-based oscillator circuit. Ultra Low Power consumption, as low as 500 nA, are made possible through 100.000 kHz Tuning-Fork-Crystals and sophisticated CMOS-circuitry.

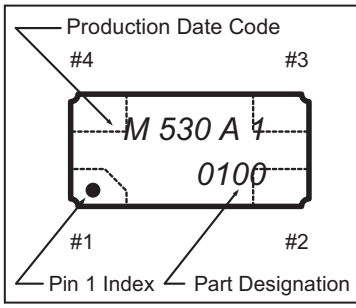
For pick-and-place equipment, the parts are available in 12 mm tape:

7” (178 mm) reel with 1'000 oscillators
7” (178 mm) reel with 3'000 oscillators

BLOCK DIAGRAM:



PIN CONNECTIONS
TOP VIEW:



Pin	Connection	
1	CLKOUT	Frequency output
2	GND	Ground
3	CLKOE	CLK output enable
4	V_{DD}	Power Supply Voltage

ELECTRICAL CHARACTERISTICS AT 25°C:

Output Frequency	F	100.000	kHz
Frequency tolerance 1)	ΔF/F	+/-20	ppm
Supply voltage	V_{DD}	1.2 – 5.5	V
Current consumption (typ./max.) 2)	I_{DD}	0.5 / 0.75	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 Load	HCMOS	15	pF
Output Current	I_{OH}	1	mA
	I_{OL}	-1	mA
Output rise time (max.) 5)	t_r	70	ns
Output fall time (max.) 5)	t_f	70	ns
Start up time (max.)	t_{start}	0.5	s
CLK Output Enable (High)	V_{IH}	80% V_{DD} min.	V
CLK Output Disable (Low)	V_{IL}	20% V_{DD} max.	V
Voltage coefficient (max.)		+/-1.5	ppm/V
Aging first year max. @ 25°C	ΔF/F	+/-3	ppm
Turnover temperature (typ.)	T_0	25 +/-5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035\ ^{ppm}/_{°C^2}\ (T - T_0)^2$ +/-10%	ppm

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

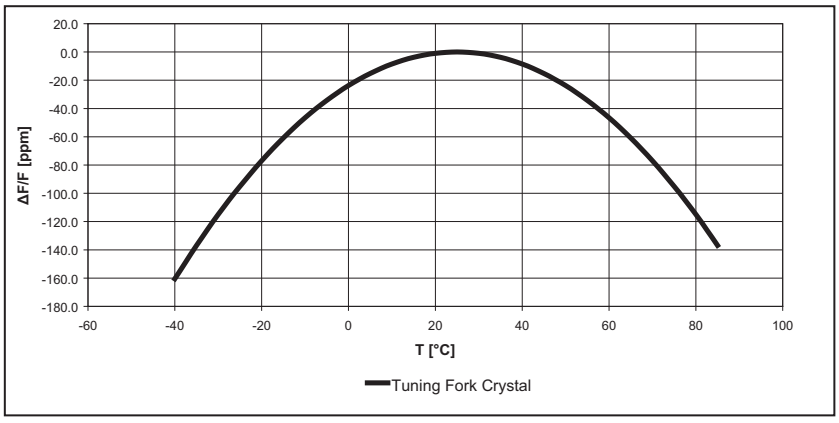
ENVIRONMENTAL CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		–55 to +125°C	
TA Operating temperature range		–40 to +85°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:

Package-Type	Termination	Processing
Ceramic	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

FREQUENCY TEMPERATURE CHARACTERISTICS:



All specifications subject to change without notice.

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