Crystal Oscillator NEW

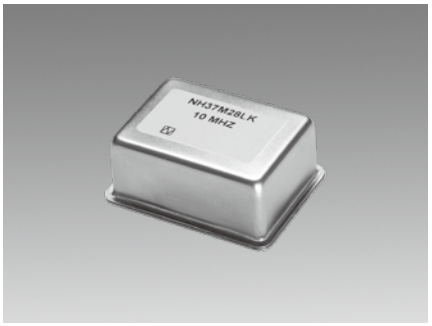
NDK Crystal Bridge to the Future

NH37M28LK

High Precision Oscillator (Twin-OCXO) for Fixed Communication Equipment

■ Main Application

- Base stations for system mobile communications
- Measuring instrument
- Synthesizer
- Exchanger
- High-end router



■ Features

- Excellent temperature characteristics.
- Supports wide temperature range. (−40 to +85°C).
- Excellent Holdover stability (Typ. 1μs/8h).
- Frequency adjustment by digital control method (I2C control). (Voltage contorol method (V_{cont}) is also possible.)

Pb Free

RoHS Compliant Directive 2011/65/EU

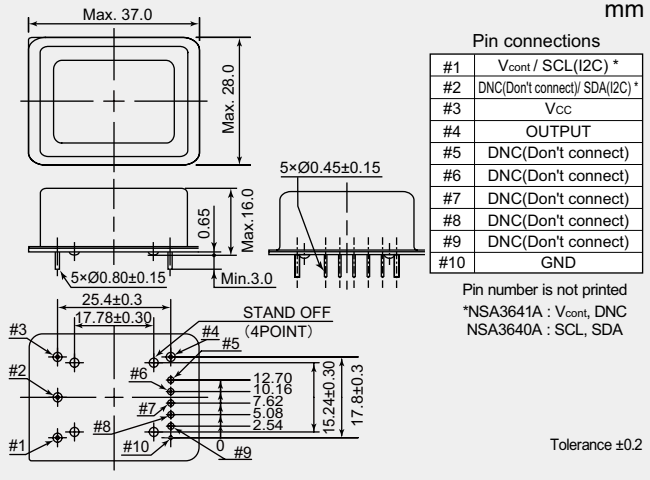
■ Specifications

Item / Measurement condition		Model: NH37M28LK
Nominal Frequency (MHz)		10
Supply Voltage [V_{CC}] (V)		+5.0 ±5 %
Power Consumption (W)	at start	Typ. 3.0 (Max. 3.5)
	when stable (+25 °C)	Max. 1.2
Output Voltage		LVCMOS (V_{OL} Max. 0.4 V, V_{OH} Min. 2.4 V)
Symmetry (%)	at 1/2 V_{out}	45 to 55
Load Impedance (pF)		15
Operating Temperature Range (°C)		−40 to +85
Storage Temperature Range (°C)		−40 to +85
Stabilization Time	Stabilization Time (Frequency Stability) within ±10 ×10^{-9} after power on at +25°C , based on frequency after 60minutes operation.	Max. 5 minutes
Long-term Frequency Stability	Based on frequency after 7 days operation	Max. ±0.2×10^{-9}/day
		Max. ±50×10^{-9}/year
Frequency/Temperature Characteristics	−40 to +85 °C	Max. ±0.2×10^{-9}
Hold Over	After 7days operation, 20°C window in operating Temp. range. 8h period. *1	Typ. ±1.0μs/8h
Frequency/Voltage Coefficient	V_{CC} +5 V ±5 %	Max. ±0.2×10^{-9}
Frequency Control Range	*2	±0.3 to ±0.5 ×10^{-6}
Frequency Change Polarity	Frequency Change Polarity	Positive
	Linearity	Max. 5%

■ Reference Value

Phase Noise (at 10MHz)	Offset Frequency	dBc/Hz	Offset Frequency	dBc/Hz
	1 Hz	Typ. –83	1k Hz	Typ. –152
	10 Hz	Typ. –110	10k Hz	Typ. –157
	100 Hz	Typ. –135	100k Hz	Typ. –160

■ Dimensions



Pin connections

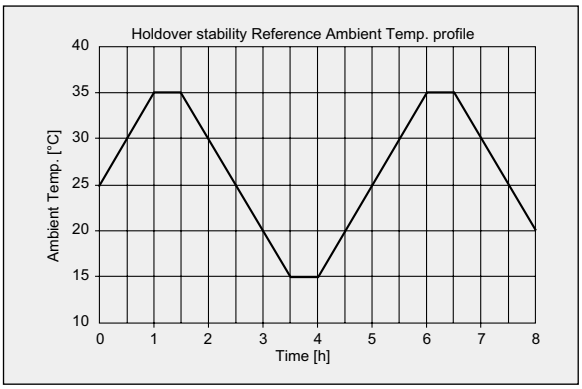
#1	V_{cont} / SCL(I2C) *
#2	DNC(Don't connect)/ SDA(I2C) *
#3	V_{CC}
#4	OUTPUT
#5	DNC(Don't connect)
#6	DNC(Don't connect)
#7	DNC(Don't connect)
#8	DNC(Don't connect)
#9	DNC(Don't connect)
#10	GND

Pin number is not printed

*NSA3641A : V_{cont}, DNC
NSA3640A : SCL, SDA

■ *1 Holdover condition

●After 7days operation. ●Ramp rate: 10 °C/1h. ●Standby time: each 0.5h.
●Temp. condition Range: 20 °C window in operating Temp. range.



■ *2 Specification Number

Frequency control method	Voltage control (V_{cont})	Digital control (I2C control)
Control Range	0 to 5.0V	0x800000 to 0x7FFFFF
Specification Number	NSA3641A	NSA3640A

Please specify the model name, frequency, and specification number when you order products. For further questions regarding specifications, please feel free to contact us.