Crystal Clock Oscillator

NDK — Crystal Bridge to the Future

NZ2016SJ Low current consumption Type
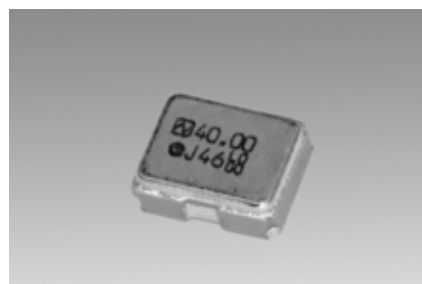
■ Application

● For Smartphones, Tablet computers, notebook PC, DSC, etc.

■ Features

● External configuration size is 2.0 x 1.6 x 0.7mm (weight of 0.01g), and is micro light weight.
● Low current consumption (Max. 0.7mA, @40MHz, +1.8V, No-load).
● Lead-free.

Pb Free

RoHS Compliant
Directive 2011/65/EU
Directive (EU) 2015/863

Absolute maximum rating
Supply Voltage (V_{CC}) –0.3 to +4.0 V
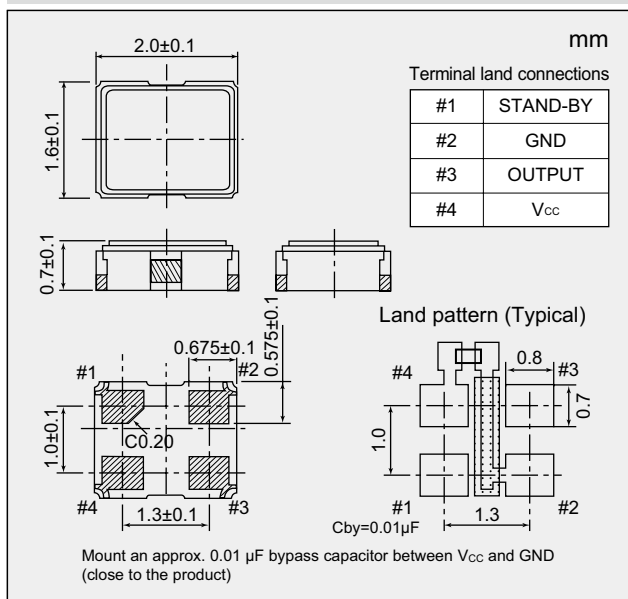Storage Temperature Range –55 to +125 °C

■ Specifications

Item	Model			NZ2016SJ
Output Specification				CMOS
Nominal Frequency Range			(MHz)	6 ≤ F ≤ 40
Overall Frequency Tolerance[*1]			(×10⁻⁶)	± 30
Operating Temperature Range			(°C)	–40 to +85
Supply Voltage [V_{CC}]			(V)	+1.8 ± 0.18
Current Consumption Max.	During Operation[*2]	+25 °C, No-load	(mA)	0.60 to 0.70
		+25 °C, 15pF		0.92 to 1.78
	During Standby	+25 °C, No-load/15pF	(μA)	10
V_{OL} Max. / V_{OH} Min.			(V)	0.1 V_{CC} / 0.9 V_{CC}
Tr Max. / Tf Max.			(ns)	8/8 (at 0.1V_{CC} to 0.9V_{CC})
Symmetry Min. to Max.			(%)	45 to 55 (at 0.5V_{CC})
Load (C_L) Max.			(pF)	15
Start-up Time Max.			(ms)	4
Standby function				Available (Three-state)
Specification Number				NSA3609A

*1 : Frequency Tolerance (+25°C), Frequency/Temperature characteristics, Frequency/Voltage characteristics.
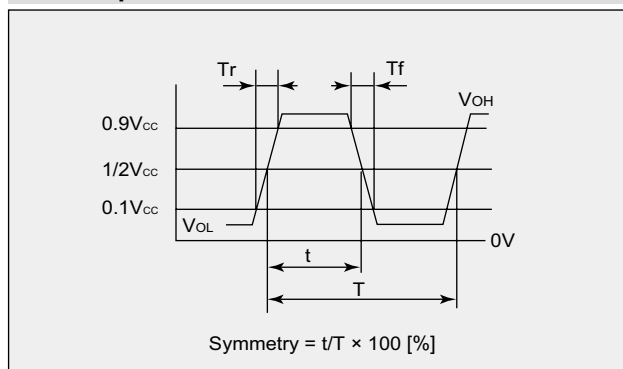*2 : Consumption current at the time of loading capacity(C_{LOUT}) on an output I_{CC} (C_{LOUT}) is consumption current(I_{CC}) at the time of no-load, and output frequency. (F_{OUT}) It can ask by the following formula.

$$I_{CC}(C_{LOUT})[mA]=I_{CC}[mA]+C_{LOUT}[pF]×V_{CC}[V]×F_{OUT}[MHz]・10^{-3}$$

■ Dimensions

mm

Terminal land connections

#1	STAND-BY
#2	GND
#3	OUTPUT
#4	V_{CC}

2.0±0.1
1.6±0.1
0.7±0.1
0.675±0.1
0.575±0.1
1.0±0.1
C0.20
1.3±0.1
#1 #2 #3 #4

Land pattern (Typical)

#4 0.8 #3
1.0 0.7
#1 1.3 #2
Cby=0.01μF

Mount an approx. 0.01 μF bypass capacitor between V_{CC} and GND (close to the product)

■ Output Waveform <CMOS>

Tr   Tf
0.9V_{CC} V_{OH}
1/2V_{CC}
0.1V_{CC}
V_{OL}
0V
t
T

Symmetry = t/T × 100 [%]

■ Standby function

#1 Input	#3 Output
Level H (0.7 V_{CC} ≤ V_{IH} ≤ V_{CC}) or OPEN is selected.	Oscillation output ON
Level L (V_{IL} ≤ 0.3 V_{CC}) is selected.	High impedance

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