3.2x1.5mm CMOS 32.768kHz
SMD CLOCK OSCILLATOR
Pb-Free & RoHS compliant

*Very low current consumption

N31B Preliminary

FREQUENCY STABILITY

MODEL	FREQUENCY STABILITY OVER TEMPERATURE (It is NOT including frequency tolerance at +25℃, supply voltage change , load change and 1st year aging.)
N31B2P1R,N31B2S1R,N31B2W1R	±50ppm/-40～+85℃

OPERATING CONDITIONS

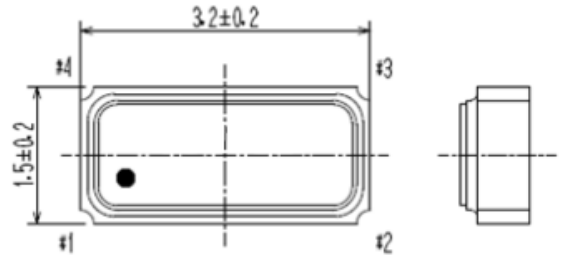
Operating Temperature	-40～+85℃
Storage Temperature	-40～+105℃
Supply Voltage (Vdd)	N32AP: +3.3V±10% N32AS: +2.5V±10% N32AW: +1.8V±10% Operable 1.3~3.63V (Note 1)

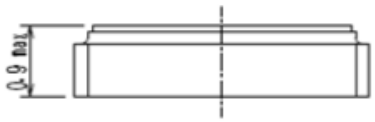
ELECTRICAL CHARACTERISTICS (Ta=+25℃, Vdd=3.3V, CL=15pF)

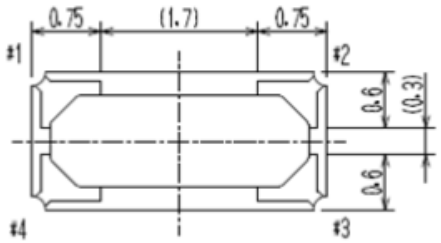
PARAMETERS	CONDITIONS	SPECIFICATIONS
Frequency Range (MHz)		32.768kHz
Input Current (Idd)	Vdd=+3.3V , No Load condition	1.3 uA Typ. 2.5uA Max.
Frequency Stability	Vdd: 1.5V～3.63V, +25℃	±50ppm (operating temperature only)
Symmetry	Load:30pF	40/60%
Output Voltage (Vol)	Iol=0.1mA, Vdd=1.5V	0.1Vdd Max.
Output Voltage (Voh)	Ioh=-0.1mA, Vdd=1.5V	0.9Vdd Min.
Rise Time (Tr)	Output level: 10～90% Load: 30pF	40nS Max.
Fall Time (Tf)	Output level: 10～90% Load: 30pF	40nS Max.
Output Load	CMOS	30pF Max.
Start-up Time	+25℃	0.5 Sec Max.
Aging	+25℃, Vdd=3.3V, 1st year	±3ppm Max.
Frequency tolerance	+25℃, Vdd=3.3V	±3ppm Max.
Frequency stability vs voltage coefficient	Vdd=±10%	±1ppm Max

Note 1: When the supply voltage become 1.5V or less, the frequency compensation operation is in activated.

DIMENSIONS (mm)



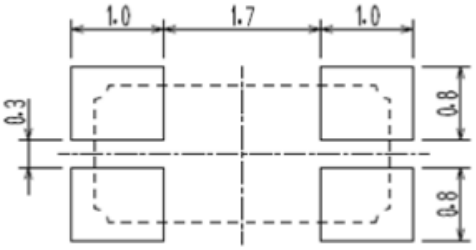




ENABLE/DISABLE FUNCTION	
Control (Pin #1)	Pin #3
Open	Active
"1" (V_{IH}≧0.8Vdd)	Active
"0" (V_{IL}≦0.2Vdd)	High Z

Pin Connection	
#1	E/D
#2	GND
#3	OUT
#4	Vdd

RECOMMENDED SOLDER PAD LAYOUT



2021.02.09 Ver-1