

Low Current Consumption 32.768kHz OX-I Type 3.2 x 2.5 mm SMD Crystal Oscillator

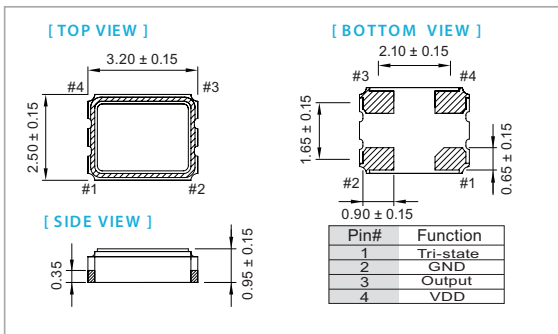
FEATURE

- Low Power Supply Voltage: 1.8V, 2.5V and 3.3V Supply Options
- Singled-end Output: CMOS
- Frequency: 32.768kHz
- Low Current Consumption: < 18μA
- Temperature Range: -40°C to 125°C Operation
- Pb-free/RoHS Compliant

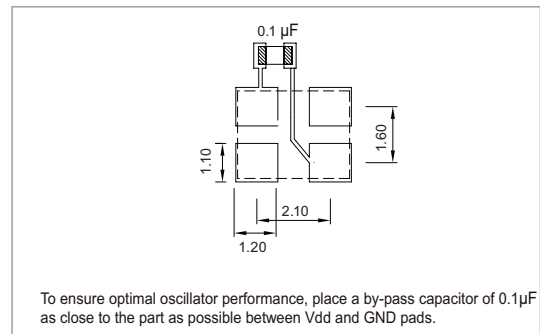
TYPICAL APPLICATION

- RTC Module
- Smartphone
- IoT
- Wearable Device – Watch, Medical

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	3.3V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (V _{DD})	V _{DD} -10%	V _{DD} +10%	V _{DD} -5%	V _{DD} +5%	V _{DD} -5%	V _{DD} +5%	V
Frequency Range	32.768						kHz
Supply Current (No Load)	-	18	-	18	-	18	μA
Output Level	Output High	2.97	-	2.25	-	2.25	V
	Output Low	-	0.33	-	0.25	-	V
Transition Time* (10%-90%)	Rise Time / Fall Time		-	15.0	-	15.0	nSec
Duty Cycle	45	55	45	55	45	55	%
Startup Time	-	20	-	20	-	20	mSec
Tri-State Mode (Input to Pin 2)	Enable	0.7 x V _{DD}	-	0.7 x V _{DD}	-	0.7 x V _{DD}	V
	Disable	-	0.3 x V _{DD}	-	0.3 x V _{DD}	-	V
Stand by Current	-	3	-	3	-	3	μA
Output Loading (CMOS)	-	15	-	15	-	15	pF
Aging (@ 25°C, 1 st Year)	-	±3	-	±3	-	±3	ppm
Storage Temp. Range	-55	+125	-55	+125	-55	+125	°C

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position
 +Transition times are measured between 10% and 90% of V_{DD}, with an output load of 15pF

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	±20	±25	±30	±50
-10~+60	○	○	○	○	○
-20~+70	△	○	○	○	○
-40~+85	×	△	○	○	○
-40~+105	×	×	△	○	○
-40~+125	×	×	×	○	○

* ○: Available △: Conditional ×: Not available

*Inclusive of calibration @ 25°C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration load variation

Note: not all combination of options are available. Other specifications may be available upon request.