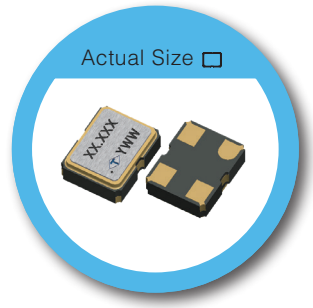
Low Current Consumption 32.768kHz OY-I Type

2.5 x 2.0mm SMD Crystal Oscillator



RoHS Compliant

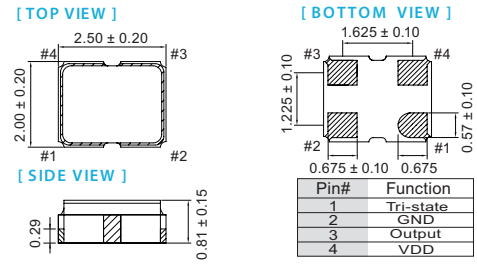
FEATURE

- Low Power Supply Voltage: 3.3, 2.5, 1.8 Supply Options
- Singled-end Output: CMOS
- Frequency: 32.768kHz
- Low Current Consumption: 18uA Max
- Temperature Range: -40 to 85°C Operation
- Pb-free/RoHS Compliant

TYPICAL APPLICATION

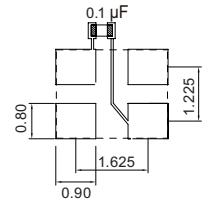
- RTC Module
- Smartphone
- IoT
- Wearable Device
- Watch, Medical

DIMENSION (mm)



Pin#	Function
1	Tri-state
2	GND
3	Output
4	VDD

SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

Parameter			3.3 V		2.5 V		1.8 V		unit
			Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)			VDD-10%	VDD+10%	VDD-5%	VDD+5%	VDD-5%	VDD+5%	V
Frequency Range			32.768						kHz
Supply Current (No Load)			–	18	–	18	–	18	uA
Output Level		Output High	2.97	–	2.25	–	1.62	–	V
		Output Low	–	0.33	–	0.25	–	0.18	
Transition Time (10%-90%)	Rise Time / Fall Time		–	15.0	–	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	0.7xVDD	–	0.7xVDD	–	0.7xVDD	–	V
		Disable	–	0.3xVDD	–	0.3xVDD	–	0.3xVDD	
Standby Current			–	3	–	3	–	3	µA
Output Loading (CMOS)			–	15	–	15	–	15	pF
Aging (@ 25°C 1st year)			–	±3	–	±3	–	±3	ppm
Storage Temp. Range			-55	125	-55	125	-55	125	°C

FREQ. STABILITY vs. TEMP. RANGE

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

* ○: Available △:Conditional X: Not available
* Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration

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