

Why 32.768KHz is needed?

- ◆ 32.768KHz is the most popular Frequency for clocks. It allows for 1 pulse (1Hz) per second.
- ◆ Most Electronic devices or applications have sleep mode functions and need this 32.768KHz frequency.

Popular 32.768KHz Applications

- ◆ Consumer (PC, Tablet, Mobile Phone)
- ◆ Automotive (Telematics, Car Audio)
- ◆ Networking
(GPS, Router, Switch, BLE, Zigbee, Base Station)
- ◆ Industrial (Thermostat, Smart Meter)
- ◆ Wearables
- ◆ Medical
(Pace maker, Defibrillator, Healthcare, Glucose Monitoring system)

Competitors

Epson, Micro Crystal, KDS, NDK, Abracon
Citizen, ECS, Fox

ST3215SB



3.2(L) x 1.5(W) x 0.9(H) mm

ST2012SB



2.0(L) x 1.2(W) x 0.6(H) mm

AVX /Kyocera 32KHz Crystal Unit Features

- ◆ Key technology and material (PKG and Crystal Blank) for 32KHz crystal units produced in house , allowing for high reliability, on time delivery and competitive costs.
- ◆ Small size & high volume manufacturing
- ◆ Secure oscillation margin by low ESR (50Kohm as option)
- ◆ Extends battery life by low load capacitance (4pF an option)
- ◆ Board characterization available
- ◆ AEC-Q200 available (Only ST3215SB)
- ◆ Pb Free (RoHS Compliant)

Data Sheet

<http://www.kyocera-crystal.jp/eng/prdct/list/khz/>

Crystal unit	Crystal Oscillator					
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Kyocera PN	ST3215SB	KC3215A	KC2520B	KC2520M	KT3225T	KR3225Y
Oscillation Element	<u>T-Fork</u>	<u>T-Fork</u>	<u>AT Crystal</u>	<u>AT Crystal</u>	<u>T-Fork</u>	<u>T-Fork</u>
Size Lx Wx h (mm) (typ.)	3.2x1.5x0.8	3.2x1.5x1.0	2.5x2.0x0.8	2.5x2.0x0.8	3.2x2.5x1.0	3.2x2.5x1.0
Additional Function	---	with XO	with XO	with XO	with TCXO	with TCXO/RTC
Output	---	CMOS	CMOS	CMOS	CMOS	CMOS
Operating Temp (°C)	-40 to +125	-40 to +85	-40 to +85	-40 to +125	-40 to +85	-40 to +85
vs Temperature (ppm)	+0/ -350	+10/ -120	±15 (-40 to +85°C)		±5	±5
vs Initial @25°C (ppm)	±20	+5±23	±10	±10	----	----
vs Aging /year @25°C (ppm)	±3	±3	±3	±3	±3	±3
Supply Voltage	----	1.5 to 3.6V	1.5 to 5.5V	1.5 to 5.5V	1.3 to 5.5V	1.3 to 5.5V
Current Consumption (uA) No-Load @3.3V	----	Typ. 0.8	Typ. 80	Typ. 80	Typ. 1.5	Typ. 1.5
Maximum Load	----	15pF	15pF	15pF	15pF	15pF
Enable/ Disable Function	----	Stand-by	Stand-by	Stand-by	Stand-by	Stand-by
AEC-Q200 Certified	Yes	Yes	Yes	Yes	Yes	Yes
AEC-Q100 Certified	---	<i>Planning</i>	Yes	Yes	<i>Planning</i>	<i>Planning</i>

* Please contact us for inquires about Extend Operating Temperature Range, available frequencies, other condition