

32.768kHz Series

OE / OC Type

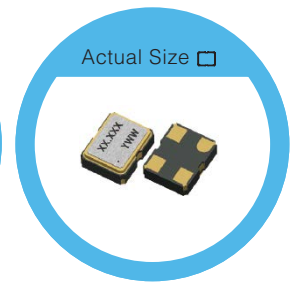
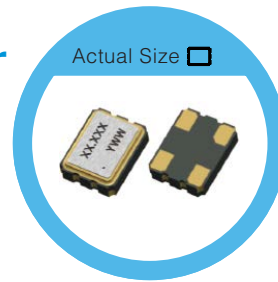
3.2 x 2.5 / 2.5 x 2.0 mm SMD Oscillator

FEATURE

- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable
- Built-in ASIC enables reduction of current consumption.

TYPICAL APPLICATION

- Typically used for real time clock application.
- Mobile Phone
- DSC, Set-top Box, HDTV
- Car navigation systems.



RoHS Compliant

DIMENSION (mm)

SOLDER PAD LAYOUT (mm)

<p>[TOP VIEW]</p> <p>[SIDE VIEW]</p>	<p>[BOTTOM VIEW]</p> <table border="1"> <thead> <tr> <th>Pin#</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tri-state</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>Output</td> </tr> <tr> <td>4</td> <td>VDD</td> </tr> </tbody> </table>	Pin#	Function	1	Tri-state	2	GND	3	Output	4	VDD	<p>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.</p>
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ELECTRICAL SPECIFICATION

Parameter	3.3V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	VDD-10%	VDD+10%	VDD-10%	VDD+10%	VDD-10%	VDD+10%	V
Supply Current (@ 15pF load)	-	120	-	120	-	120	uA
Supply Current (@ no load)	-	80	-	80	-	80	uA
Duty Cycle	45	55	45	55	45	55	%
Output Level (CMOS)	2.97	-	2.25	-	1.62	-	V
Output High (Logic "1")	-	0.33	-	0.25	-	0.18	
Output Low (Logic "0")	-	0.33	-	0.25	-	0.18	
Transition Time: Rise/Fall Time+	-	50	-	50	-	50	nSec
Start Time	-	2	-	2	-	2	mSec
Tri-State (Input to Pin 1)	2.31	-	1.75	-	1.26	-	V
Enable (High voltage or floating)	-	0.99	-	0.75	-	0.54	
Disable (Low voltage or GND)	-	0.99	-	0.75	-	0.54	
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 VDD, with an output load of 15pF

FREQ. STABILITY vs. TEMP. RANGE

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

* O: Available △: Conditional X: 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.