

OX Type

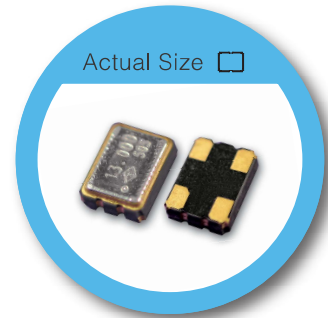
3.2 x 2.5 mm SMD Crystal Oscillator

FEATURE

- Typical 3.2 x 2.5 x 0.95 mm ceramic SMD package.
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable

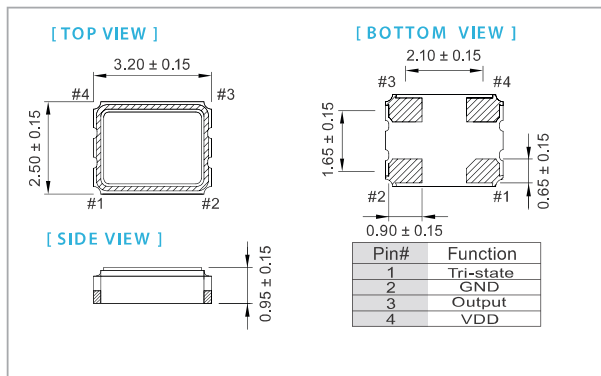
TYPICAL APPLICATION

- WLAN/WiMAX
- Mobile Phone
- DSC, Set-top Box, HDTV

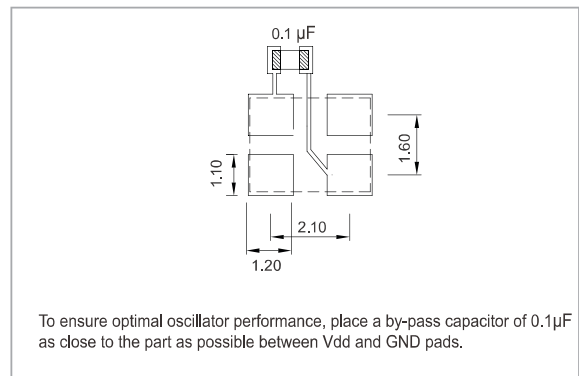


RoHS Compliant

DIMENSION (mm)



SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	3.3 V		2.5 V		1.8 V		unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) ±10%	2.97	3.63	2.25	2.75	1.62	1.98	V
Frequency Range	1.25	125	1.25	125	1.25	125	MHz
Standard Frequency	24, 26, 32, 38.4, 40						
Supply Current	1.25 MHz ≤ Fo < 100 MHz	—	15	—	10	—	7
	100 MHz ≤ Fo ≤ 125 MHz	—	25	—	20	—	12
Duty Cycle	45	55	45	55	45	55	%
Output Level (CMOS)	Output High (Logic "1")	2.97	—	2.25	—	1.62	—
	Output Low (Logic "0")	—	0.33	—	0.25	—	0.18
Transition Time: Rise/Fall Time ⁺	1.25 MHz ≤ Fo < 20 MHz	—	4	—	4	—	5
	20 MHz ≤ Fo < 80 MHz	—	3	—	3	—	4
	80 MHz ≤ Fo ≤ 125 MHz	—	3	—	3	—	4
Start Time	—	2	—	2	—	2	mSec
Tri-State (Input to Pin 1)	Enable (High voltage or floating)	2.31	—	1.75	—	1.26	—
	Disable (Low voltage or GND)	—	0.99	—	0.75	—	0.54
Period Jitter (Pk-Pk)	—	40	—	40	—	40	pSec
RMS Phase Jitter (Integrated 12 kHz ~ 20 MHz)	—	1	—	1	—	1	pSec
Standby Current	—	10	—	10	—	10	µA
Aging (@ 25°C 1st 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	±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.

Model Numbering Guide – Crystal Oscillator

Available options

Type	package (mm)	Supply Voltage(V)	Tri-State Function	Freq. Stability (ppm)	Temp. Range(°C)	Output Logic and Symmetry	Oscillator Mode	Appearance	Lead Free	Dash	Freq. (MHz)
O: Oscillator	Z:2.0 x 1.6 Y:2.5 x 2.0 X:3.2 x 2.5 V:5.0 x 3.2 C:7.0 x 5.0	E: 2.8/3.0/3.3 J: 2.5 K: 1.8 P: 1.5 L: 1.2 M: 0.9	T: Fixed-Freq with Tri-State M: Multiplier Freq with Tri-State(only for V/C package) U: Ultra Low Noise design	A: ±5 B: ±10 P: ±15 C: ±20 D: ±25 E: ±30 F: ±40 G: ±50 H: ±100	E: 0~+85 I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85 J: -40~+105 H: -40~+125 F: -55~+125	J: CMOS 15pF / 50±5% K: CMOS 15pF / 50±10%					
P: Programmable Oscillator	Y: 2.5 x 2.0 X: 3.2 x 2.5	E: 2.8/3.0/3.3 J: 2.5 K: 1.8	T: Fixed-Freq with Tri-State	C: ±20 D: ±25 G: ±50 H: ±100		J: CMOS 15pF / 50±5%	A: AT Fundamental T: AT 3rd Overtone	N :Normal	F: RoHS Compliant	-	XX.XXXXXX
O: Oscillator (Differential Output)	A:3.2x2.5 W:5.0x3.2 T:7.0x5.0	E: 3.3 J: 2.5	T: Input to pin 2 (std.) R: Input to pin 1 (case by case) U: Ultra Low Jitter design (Only for T package)	D: ±25 G: ±50 H: ±100	I: -10~+60 C: -20~+70 D: -30~+85 L: -40~+85	L: LVPECL / 50±5% V: LVDS / 50±5% H: HCSL / 50±5%	Not Selectable by Customer				
O: Oscillator (Fast Delivery series)	W:5.0x3.2 T:7.0x5.0	E: 3.3 J: 2.5	M: Multiplier Freq with pin 2 Tri-State N: Multiplier Freq. with PIN 1 Tri-State	D: ±25 G: ±50 H: ±100		J: CMOS 15pF / 50±5% L: LVPECL / 50±5% V: LVDS / 50±5%					

O Y E T C C J A N F - 13.000000

*Not all combinations of options are available.

Example: OYETCCJANF-13.000000

Type	Oscillator
Package	2.5 x 2.0 mm
Supply Voltage(V)	3.3 V
Tri-State .	Fixed-Freq.
Freq. Stability	±20ppm
Temp Range	-20~+70 °C
Output	CMOS 15 pF / Symmetry 50±5%
Oscillator Mode	AT Fundamental
Appearance	Normal Appearance
Lead Free	RoHs Compliant
Frequency	13.000000 MHz