

5.0 × 3.2 mm SMD Crystal Oscillator

Feature

- Typical 5.0 x 3.2 x 1.2mm ceramic SMD package
- Tight symmetry (45 to 55%) available
- Operation voltage: 1.8V, 2.5V, 3.3V
- Realize the standby function with Tri-State
- RoHS compliant/Pb-free

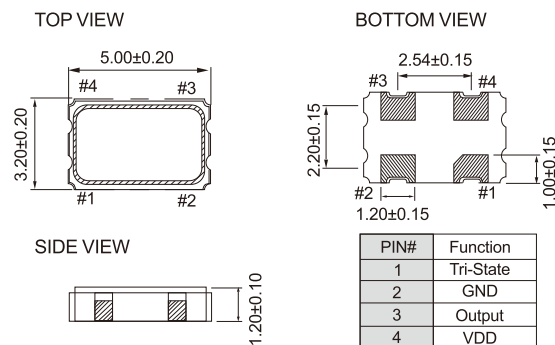


Electrical Specifications

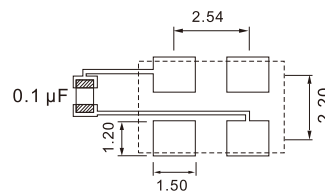
Parameter		3.3V		2.5V		1.8V		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation		2.97	3.63	2.25	2.75	1.62	1.98	V
Frequency Range		0.0137	160	0.0137	160	0.0137	135	MHz
Standard Frequency		2.048, 25, 26, 27, 50, 66.667, 100, 125						MHz
Supply Current	13.7kHz $\leq$ FO < 93kHz	-	1	-	1	-	1	mA
	0.3125MHz $\leq$ FO < 50MHz	-	10	-	8	-	7	
	40 MHz $\leq$ FO < 75MHz	-	20	-	18	-	15	
	75 MHz $\leq$ FO < 135MHz	-	35	-	30	-	25	
	135 MHz $\leq$ FO	-	45	-	40	-	-	
Transition Time : Rise/Fall Time	13.7kHz $\leq$ FO < 93kHz	-	50	-	50	-	50	nSec
	0.3125 MHz $\leq$ FO < 100MHz	-	5	-	5	-	5	
	100 MHz $\leq$ FO	-	3	-	3	-	3	
Output Level (CMOS)	Out High (Logic "1")	2.97		2.25		1.62		V
	Out Low (Logic "0")		0.33		0.25		0.18	
Start Time		-	5	-	5	-	5	mSec
Tri-State (Input to Pin 1)	Enable (High Voltage or floating)	2.31	-	1.75	-	1.26	-	V
	Disable (Low Voltage or GND)	-	0.99	-	0.75	-	0.54	
Period Jitter (Pk-Pk)		-	40	-	40	-	40	pSec
RMS Phase Jitter (integrated 12kHz to 20MHz)		-	1	-	1	-	1	pSec
Standby Current		-	10	-	10	-	10	μ A
Aging (@ 25 1st year)		-	± 3	-	± 3	-	± 3	ppm
Storage Temp. Range		-55	125	-55	125	-55	125	$^{\circ}$ 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.

Dimension(mm)



Solder Pad Layout(mm)



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

FREQ. STABILITY vs. TEMP. RANGE

ppm Temp. ($^{\circ}$ C)	± 20	± 25	± 50
10 ~ +60	o	o	o
-20 ~ +70	Δ	o	o
-40 ~ +85	Δ	o	o
-40 ~ +125	x	x	o

o: Available Δ : Conditional x: Not available

Inclusive of calibration @ 25 $^{\circ}$ C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration