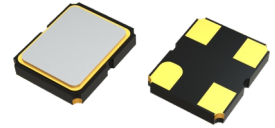


2.5 × 2.0 mm Ultra Low Noise SMD Crystal Oscillator

Feature

- Typical 2.5 x 2.0 x 0.81 mm SMD package.
- Ultra Low Phase Noise designed specifically for Hi-Resolution Audio (HiFi, HD Audio)
- F=45.1584MHz(@1.8V, 25°C): typical low close-in phase noise of -100dBc/Hz@10Hz-offset, -127dBc/Hz@100Hz-offset, and a noise floor of -157dBc/Hz
- F=49.152MHz(@1.8V, 25°C): typical low close-in phase noise of -100dBc/Hz@10Hz-offset, -128dBc/Hz@100Hz-offset, and a noise floor of -157dBc/Hz
- Wide operating temperature range: -40°C ~ +105°C



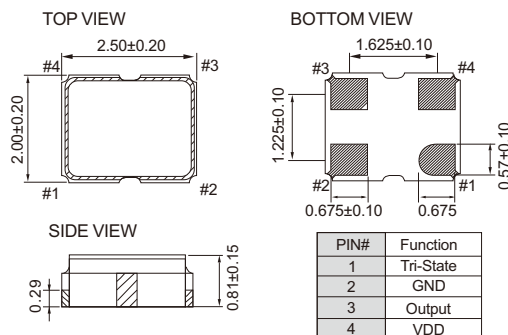
Electrical Specifications

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		20	60	20	60	20	60	MHz
Supply Current		-	8	-	7	-	5	mA
Duty Cycle		45	55	45	55	45	55	%
Transition Time : Rise/Fall Time		-	6	-	6	-	6	nSec
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		-	2	-	2	-	2	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	
RMS Phase Jitter (Integrated 12KHz to 20MHz)		-	0.5	-	0.5	-	0.5	pSec
Phase Noise (TYP.)		F=20MHz		F=40MHz		F=60MHz		dBc/Hz
1.8V, 25°C	1KHz offset	-147		-143		-139		dBc/Hz
	100KHz offset	-156		-154		-150		dBc/Hz
2.5 to 3.3V, 25°C	1KHz offset	-151		-148		-142		dBc/Hz
	100KHz offset	-157		-156		-156		dBc/Hz
Aging (@25°C 1st year)		-	±3	-	±3	-	±3	ppm
Storage Temp. Range		-55	125	-55	125	-55	125	°C

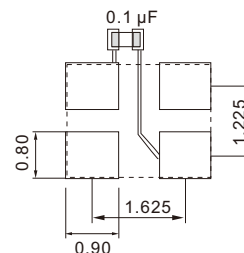
Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position

.+ Transition times are measured between 10% and 90% of VDD, with an output load of 15pF.

Dimension(mm)



Solder Pad Layout(mm)



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

FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C) \ ppm	±20	±25	±30	±50
-10 ~ +60	○	○	○	○
-20 ~ +70	△	○	○	○
-40 ~ +85	X	○	○	○
-40 ~ +105	X	X	△	○

○: Available △: Conditional X: Not available

Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1st year), shock, and vibration