

PY Type

2.5 x 2.0 mm SMD Crystal Oscillator

FEATURE

- Typical 2.5 x 2.0 x 0.81 mm ceramic SMD package.
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable

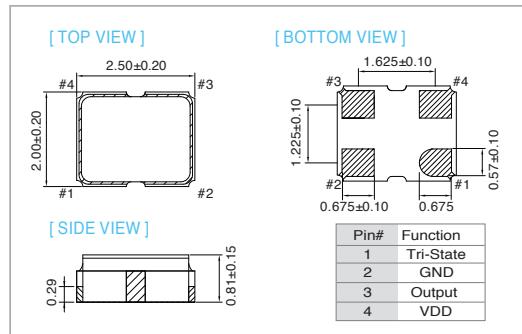
TYPICAL APPLICATION

- Computer Peripherals
- Set-top Box , HDTV
- DSC, PDA

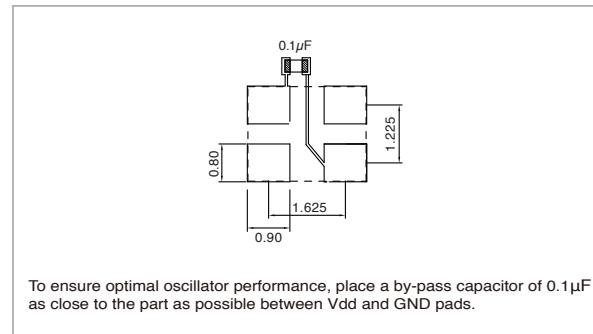
Actual Size □


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 (V_{DD})	V _{DD} -10%	V _{DD} +10%	V _{DD} -10%	V _{DD} +10%	V _{DD} -10%	V _{DD} +10%	V
Frequency Range	1	200	1	166	1	110	MHz
V_{DD} Sensitivity ($\pm 10\%$)	-2	2	-2	2	-2	2	ppm
Supply Current							
1 MHz \leq F _o < 30 MHz	—	10	—	8	—	6	mA
30 MHz \leq F _o < 75 MHz	—	12	—	10	—	8	
75 MHz \leq F _o < 133 MHz	—	15	—	12	—	10	
133 MHz \leq F _o < 166 MHz	—	18	—	15	—	—	
166 MHz \leq F _o \leq 200 MHz	—	20	—	—	—	—	
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	
Transition Time:Rise/Fall Time*							
1 MHz \leq F _o < 10 MHz	—	3	—	4	—	5	nSec
10 MHz \leq F _o	—	2	—	3	—	4	
Startup Time	—	8	—	8	—	8	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	—	
Period Jitter(Pk-Pk)							
Specific Frequency"	—	40	—	40	—	40	pSec
Others	—	200	—	200	—	200	
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 V_{DD}, with an output load of 15pF.

Specific frequency including 4.0, 13.0, 22.0, 26.0, and 40.0MHz

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