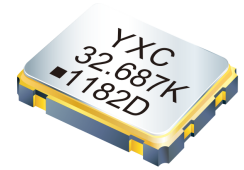# CRYSTAL OSCILLATOR
YSO120TK *Wide Voltage*

Applications

- RTC Camera

Features

- Frequency range:32.768KHz.
- Ultra Small SMD seam sealed crystal oscillator units.
- Package Size: 1.6*1.2 , 2.0*1.6 2.5*2.0 , 3.2*2.5 , 5.0*3.2 , 7.0*5.0mm

Specifications

Frequency Range	32.768KHz
Parameter	1.8V~3.3V
Output Type	CMOS
Frequency Tolerance(at 25℃)	±10ppm,±20ppm,or specify
Output Load	15pF
Operating Temperature Range	-40~+85℃,-40~+125℃,or specify
Storage Temperature Range	-55~+125℃
Frequency Versus Temperature Characteristics	± 20ppm, ± 30ppm, ± 50ppm, or specify
Voltage Vol (Max.) / Vol (Min.)	VOH = 90%Vdd/VOL = 10%Vdd
Duty Cycle	45~55%
Start-up Time	3ms Max.
Supply Current	See Below
Frequency Aging (at 25℃)	±3 ppm / year Max.

Current Consumption

| Supply Voltage (V) | 32.768KHZ | |
	7050/5032/3225	2520/2016/1612
1.8V	0.2mA max	0.2mA max
2.5V	0.3mA max	0.3mA max
3.3V	0.5mA max	0.4mA max

Pin Dimension

Pin	#1	#2	#3	#4
FUNCTION	Tri-state	GND	OUTPUT	VDD

Pin Assignments
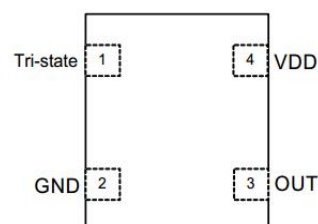
YSO120TK *Wide Voltage*
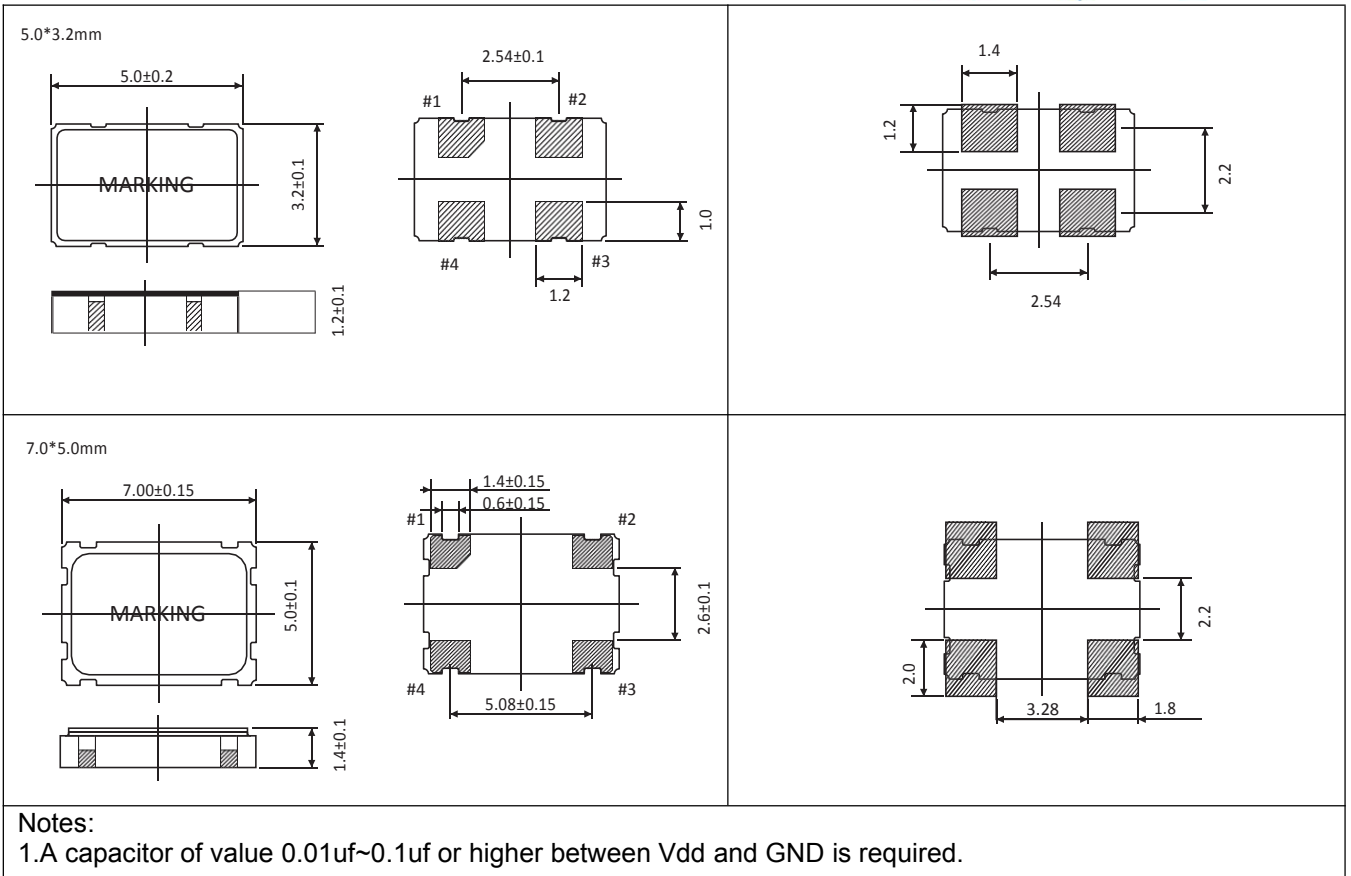
Dimensions and Patterns [unit:mm]

Package Size – Dimensions (Unit: mm)	Recommended Land Pattern (Unit: mm)
1.6*1.2mm 1.65±0.1 #4 #3 MARKING 1.25±0.1 #1 #2 0.60max Bottom #1 #2 0.475±0.1 0.5±0.1 0.475±0.1 #4 #3 0.57±0.1 0.7±0.1	0.775 0.5 0.775 0.6 0.2 0.6
2.0*1.6mm 2.05±0.1 #4 #3 MARKING 1.65±0.1 #1 #2 0.85max Bottom #1 #2 0.475±0.1 0.5±0.1 0.475±0.1 #4 #3 0.57±0.1 0.7±0.1 0.1	0.775 0.5 0.775 0.675 0.3 0.675
2.5*2.0mm 2.5±0.1 MARKING 2.0±0.1 0.8±0.1 0.4 #1 #2 0.68 0.65 #4 #3 0.95 0.78	0.9 0.95 0.9 0.8 0.65 0.8
3.2*2.5mm 3.2±0.15 MARKING 2.5±0.1 0.9±0.1 #1 #2 0.65 1.0 #4 #3 1.2 0.9	1.3 1.0 1.3 1.1 0.8 1.1

CRYSTAL OSCILLATOR
YSO120TK *Wide Voltage*

5.0*3.2mm

5.0±0.2

MARKING

3.2±0.1

1.2±0.1

2.54±0.1

#1   #2

#4   #3

1.0

1.2

1.4

1.2

2.2

2.54

7.0*5.0mm

7.00±0.15

MARKING

5.0±0.1

1.4±0.1

1.4±0.15

0.6±0.15

#1   #2

#4   #3

2.6±0.1

5.08±0.15

2.2

2.0

3.28   1.8

Notes:
1.A capacitor of value 0.01uf~0.1uf or higher between Vdd and GND is required.
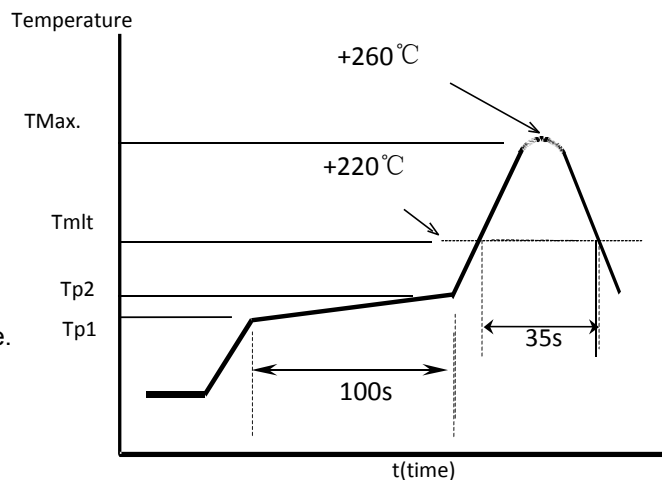
Reflow Soldering Profile

Pre Heating Temperature
   Tp1 ~ Tp2 = + 170 °C
Heating Temperature
   TMlt = + 220 °C
Peek Temperature
   TMax. = + 260 °C

Point of measuring
   In case of Solder ability Terminal.
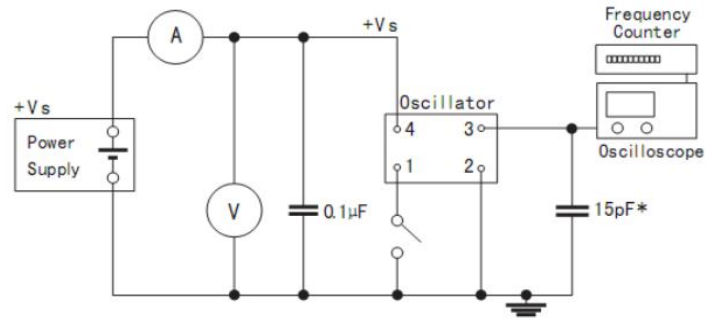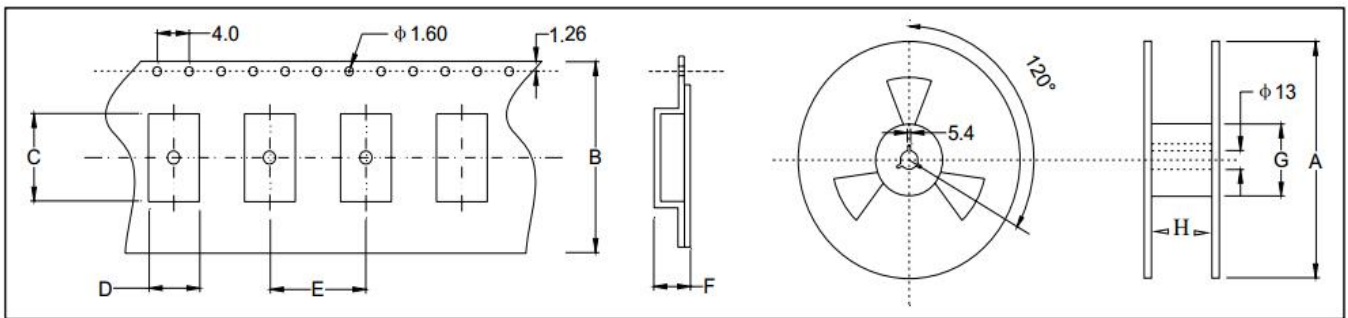   In case of Resistance to soldering heat Surface.

Temperature

+260℃

TMax.

+220℃

Tmlt

Tp2

Tp1

35s

100s

t(time)

Test Circuit

Taping Specification(Unit: mm)

Size(OSC)	A	B	C	D	E	F	G	H
SMD-7050	180±2.0	16.0±0.3	7.50±0.1	5.50±0.1	8.0±0.1	2.00±0.1	61.0±1.0	16.0±1.0
SMD-5032	180±2.0	12.0±0.3	5.40±0.1	3.60±0.1	8.0±0.1	1.70±0.1	61.0±1.0	12.0±1.0
SMD-3225	180±2.0	8.0±0.3	3.40±0.1	2.70±0.1	4.0±0.1	1.50±0.1	61.0±1.0	8.0±1.0
SMD-2520	180±2.0	8.0±0.3	2.90±0.1	2.40±0.1	4.0±0.1	1.20±0.1	61.0±1.0	8.0±1.0
SMD-2016	180±2.0	8.0±0.3	2.30±0.1	1.90±0.1	4.0±0.1	0.95±0.1	61.0±1.0	8.0±1.0
SMD-1612	180±2.0	8.0±0.3	1.80±0.1	1.40±0.1	4.0±0.1	0.80±0.1	61.0±1.0	8.0±1.0