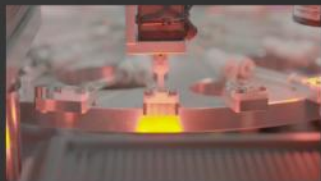


SCTF[®]



低功耗 时钟振荡器

值得信赖的专业频率控制元件制造商



www.sctf-crystal.com

值得信赖的专业频率控制元件制造商



企业简介

Company introduction

Since 2003

专业研发、生产、销售系列石英晶体及振荡器产品

推行国际标准质量管理体系：ISO9001:2015、ISO14001: 2015、IATF16949: 2016

国家高新技术企业、专精特新企业、创新型中小型企业

符合ROHS、REACH标准

以客户为中心 视质量为生命

提供晶振及周边电路运用解决方案



SCTF® 深圳市星通时频电子有限公司
SHENZHEN SCTF ELECTRONICS CO.,LTD

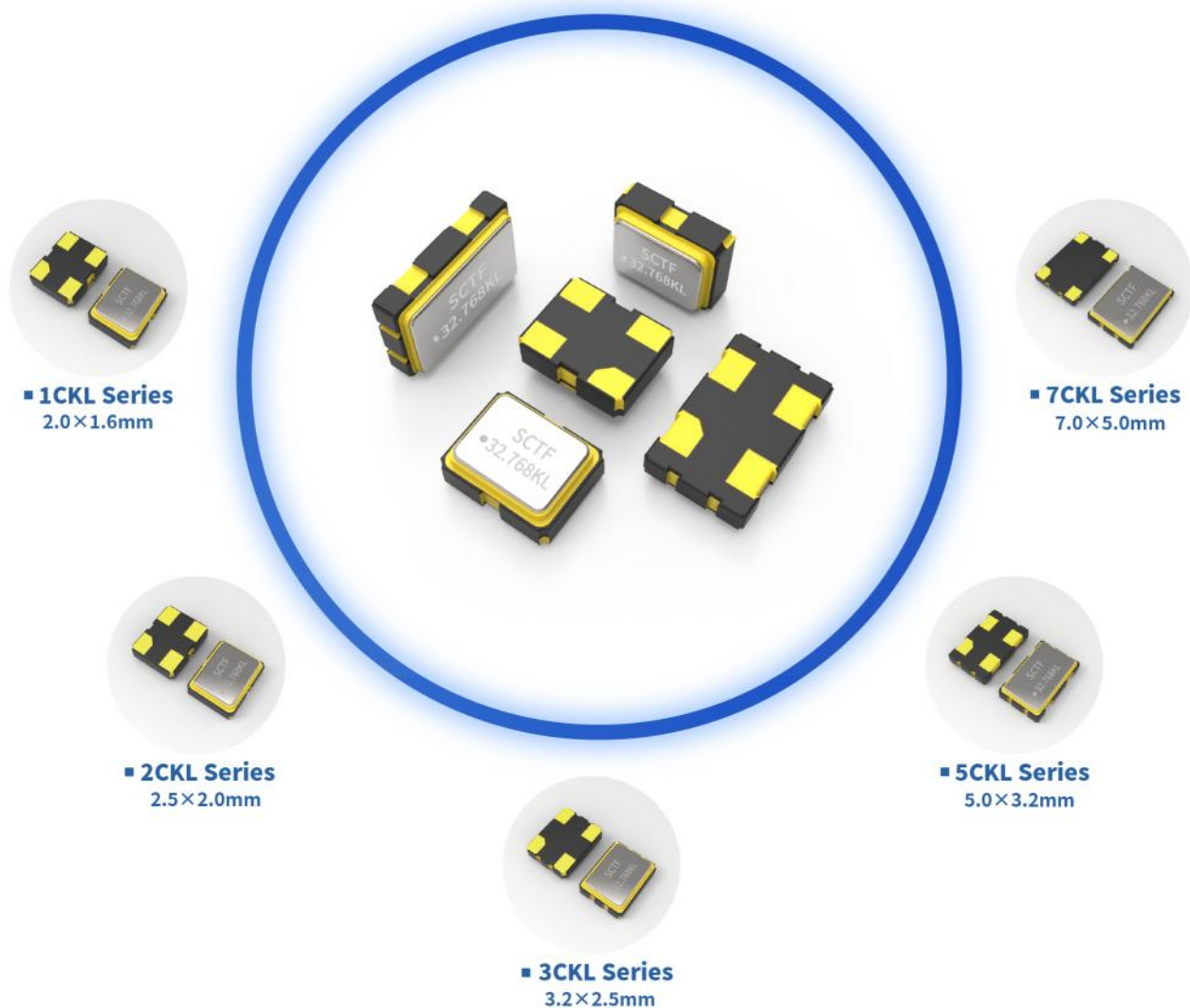
www.sctf-crystal.com

0755-86097105

sales@sctf-crystal.com

产品外观

Product Appearance



产品结构

Product Structure



产品选型指南

Product Selection Guide

Item Series	Size [mm]		Nominal Frequency [KHz]	Supply Voltage [V]	Frequency Tolerance [@25°C; ±ppm]	Frequency Drift [±ppm]	Current Consumption	Operating Temperature
	L	W						
1CKL	2.0	1.6	32.768	1.8 3.3	10 20	15 20 30	7.2µA max.	-20°C~+70°C -40°C~+85°C
2CKL	2.5	2.0						
3CKL	3.2	2.5						
5CKL	5.0	3.2						
7CKL	7.0	5.0						

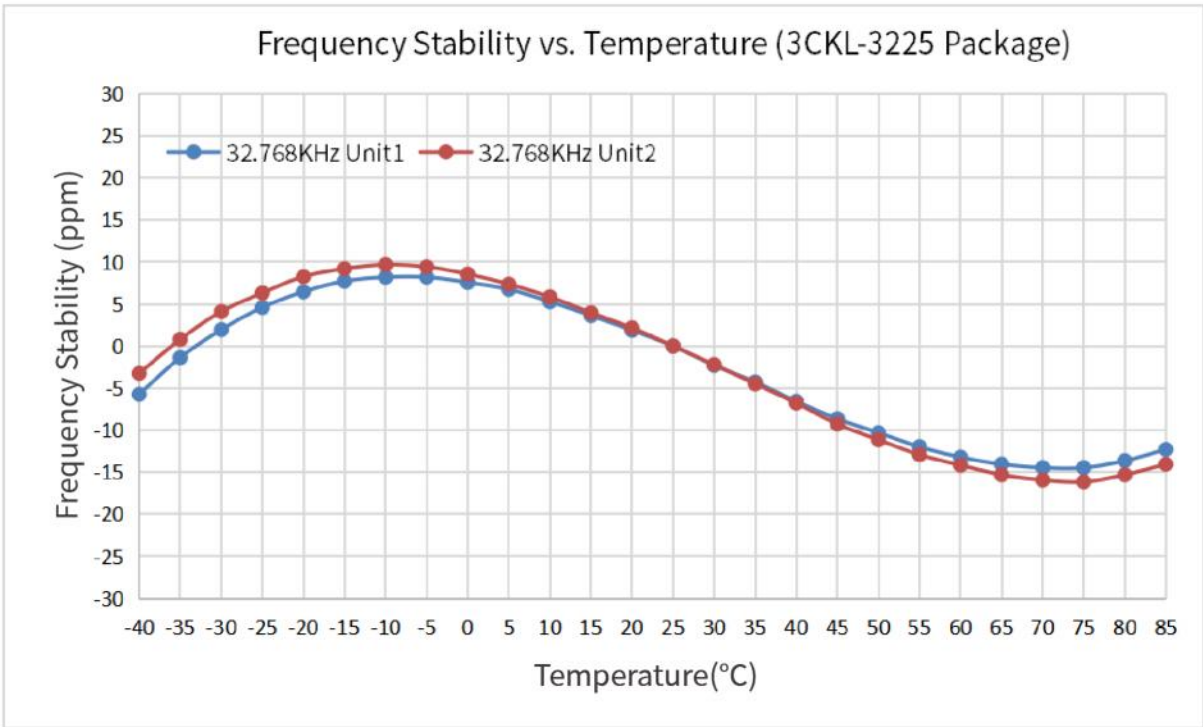
若需要更详细的资料请查询详细规格书或和我们的技术人员联系。

- 1. 选择需要的封装规格及产品系列：2.5×2.0mm; 2CKL Series
- 2. 选择需要的频率：32.768KHz
- 3. 选择需要的工作电压：3.3V
- 4. 选择需要的频率稳定度 (@+25°C)：±10ppm
- 5. 选择需要的工作温度范围：-40°C ~ +85°C
- 6. 选择需要的频率&温度特性：±30ppm

您需要的产品是：2CKL Series 32.768KHz 3.3V ±10ppm@25°C ±30ppm@ -40°C~+85°C

频率温度特性曲线

Frequency Temperature Characteristics



零部件编码示意

Options and Part Identification

Options and Part Identification : Example SX3M32.768KB20F30TLN

Company	Ceramic Package	Frequency Code [KHz]	Supply Voltage	Frequency Tolerance	Operating Temperature	Frequency Drift	Output	Current Consumption	Phase Noise
SX	3M	32.768K	B	20	F	30	T	L	N
Code Company		Frequency		Code Frequency Tolerance		Code Frequency Drift		Code Current	
SX SCTF		32.768		10 ±10ppm		15 ±15ppm		L 10µA	
				20 ±20ppm		20 ±20ppm		M 7µA	
						30 ±30ppm		P 3µA	
								Q 2µA	
								U 1µA	
	Code Ceramic Package		Code Voltage		Code Operating Temperature		Code Output		Code Phase Noise
	7M 7.0×5.0×1.3mm		D 1.8V		E -20°C ~ +70°C		T Squarewave		N Standard
	5M 5.0×3.2×1.2mm		H 2.5V		F -40°C ~ +85°C				
	3M 3.2×2.5×0.95mm		B 3.3V						
	2M 2.5×2.0×0.81mm								
	1M 2.0×1.6×0.75mm								

If you have other parameter requirements, you can contact **SCTF** at any time.

1CKL Series 2.0 x 1.6 mm SMD Crystal Oscillator

Feature

- Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Low power active mode: 7.2μA max
- Supply voltage range : 1.8V ~ 3.3V
- RoHS Compliant / Pb Free

Applications

- Real Time Clock Reference
- Internet of Things (IoT) devices
- Smart meters
- Audio, Video, Gaming products
- Portable Electronics

Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.		32.768		KHz	
Operating Temperature	T _{use}	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T _{stg}	-55		+125	°C	
Supply Voltage	V _{dd}	1.8		3.3	V	
Output Load	L _{CMOS}		15		pF	
Current Consumption	I _{cc}			7.2	μA	No load condition, V _{dd} =3.0V
				6.5		No load condition, V _{dd} =1.8V
Duty Cycle	SYM	45		55	%	50 % V _{dd} level, L _{CMOS} ≤ 15 pF
Rise / Fall Time	T _R / T _F			25	nS	10% V _{dd} to 90% Level
Start-up Time	T _{str}			20	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9V _{dd}			V	
Low output voltage	V _{OL}			0.1V _{dd}	V	
Enable Voltage High (Logic 1)	V _{IH}	0.7V _{dd}			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V _{IL}			0.3V _{dd}	V	
Enable Voltage Low (Logic 0)	V _{PLZ}			20	mS	
Aging	f _{age}			3	ppm	1st. Year at 25°C

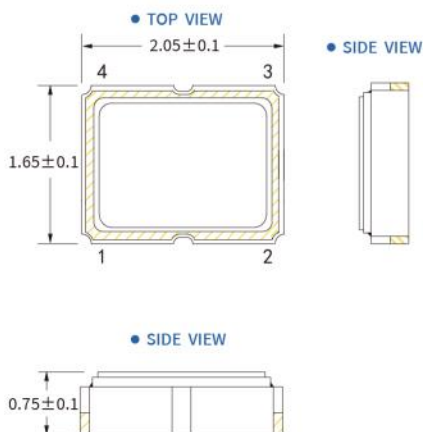
Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★	★
-40°C to +85°C		△	★	★	★

★: Available △: Conditional

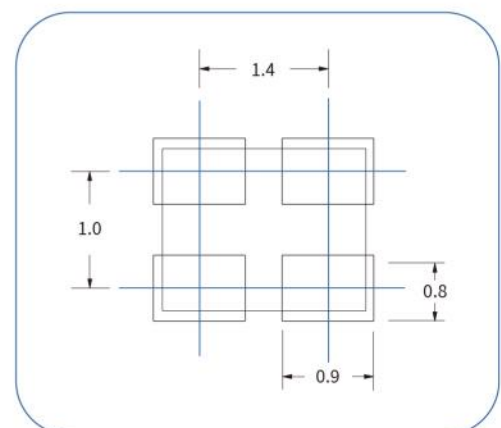
All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

Dimensions (UNIT:mm)



Pin	Function
1	Tri-State
2	GND
3	Output
4	Vdd

Solder pad layout (UNIT:mm)



2CKL Series 2.5 x 2.0 mm SMD Crystal Oscillator

Feature

- Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Low power active mode: 7.2μA max
- Supply voltage range : 1.8V ~ 3.3V
- RoHS Compliant / Pb Free

Applications

- Real Time Clock Reference
- Internet of Things (IoT) devices
- Smart meters
- Audio, Video, Gaming products
- Portable Electronics

Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.		32.768		KHz	
Operating Temperature	T _{use}	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T _{stg}	-55		+125	°C	
Supply Voltage	V _{dd}	1.8		3.3	V	
Output Load	L _{CMOS}		15		pF	
Current Consumption	I _{cc}			7.2	μA	No load condition, V _{dd} =3.0V
				6.5	μA	No load condition, V _{dd} =1.8V
Duty Cycle	SYM	45		55	%	50 % V _{dd} level, L _{CMOS} ≤ 15 pF
Rise / Fall Time	T _R / T _F			25	nS	10% V _{dd} to 90% Level
Start-up Time	T _{str}			20	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9V _{dd}			V	
Low output voltage	V _{OL}			0.1V _{dd}	V	
Enable Voltage High (Logic 1)	V _{IH}	0.7V _{dd}			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V _{IL}			0.3V _{dd}	V	
Enable Voltage Low (Logic 0)	V _{PLZ}			20	mS	
Aging	f _{age}			3	ppm	1st. Year at 25°C

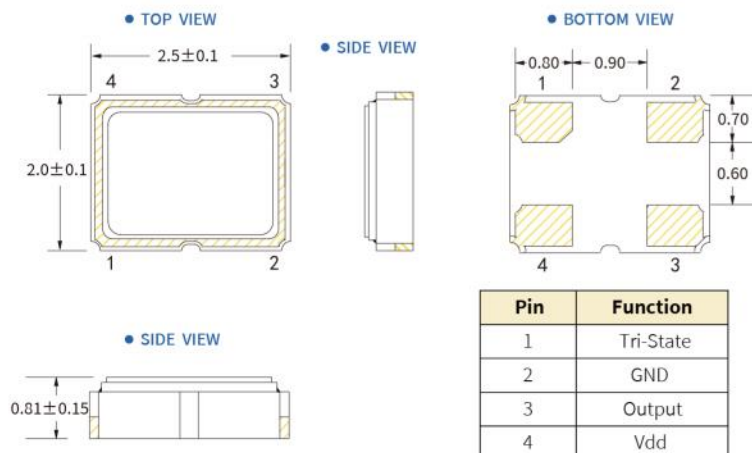
Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★	★
-40°C to +85°C		△	★	★	★

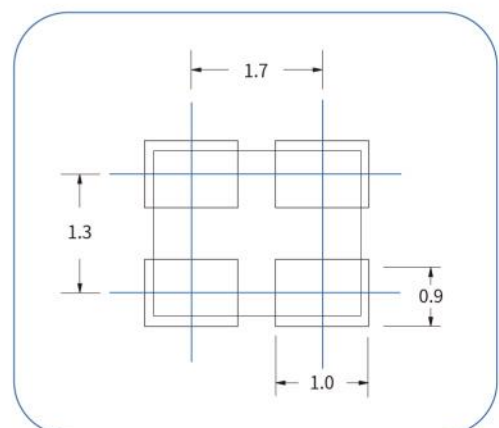
★: Available △: Conditional

All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



3CKL Series 3.2 x 2.5 mm SMD Crystal Oscillator

Feature

- Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Low power active mode: 7.2μA max
- Supply voltage range : 1.8V ~ 3.3V
- RoHS Compliant / Pb Free

Applications

- Real Time Clock Reference
- Internet of Things (IoT) devices
- Smart meters
- Audio, Video, Gaming products
- Portable Electronics

Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.		32.768		KHz	
Operating Temperature	T _{use}	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T _{stg}	-55		+125	°C	
Supply Voltage	V _{dd}	1.8		3.3	V	
Output Load	L _{CMOS}		15		pF	
Current Consumption	I _{cc}			7.2	μA	No load condition, V _{dd} =3.0V
				6.5	μA	No load condition, V _{dd} =1.8V
Duty Cycle	SYM	45		55	%	50 % V _{dd} level, L _{CMOS} ≤ 15 pF
Rise / Fall Time	T _R / T _F			25	nS	10% V _{dd} to 90% Level
Start-up Time	T _{str}			20	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9V _{dd}			V	
Low output voltage	V _{OL}			0.1V _{dd}	V	
Enable Voltage High (Logic 1)	V _{IH}	0.7V _{dd}			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V _{IL}			0.3V _{dd}	V	
Enable Voltage Low (Logic 0)	V _{PLZ}			20	mS	
Aging	f _{age}			3	ppm	1st. Year at 25°C

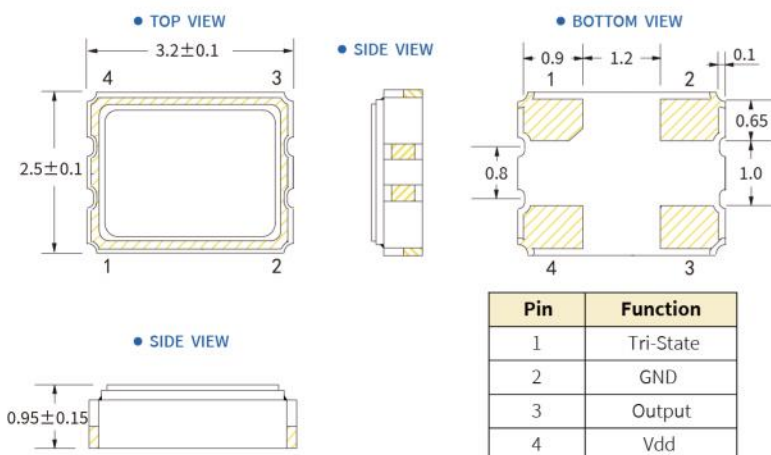
Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★	★
-40°C to +85°C		△	★	★	★

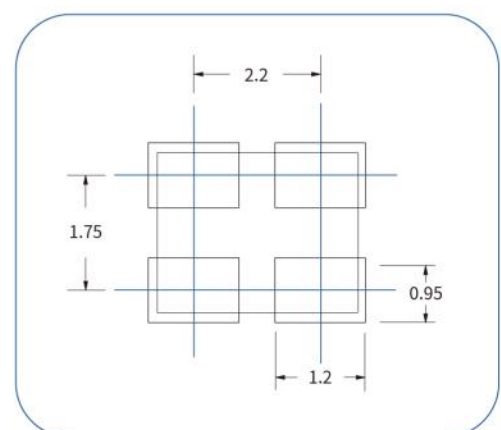
★: Available △: Conditional

All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



5CKL Series 5.0 x 3.2 mm SMD Crystal Oscillator

Feature

- Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Low power active mode: 7.2 μ A max
- Supply voltage range : 1.8V ~ 3.3V
- RoHS Compliant / Pb Free

Applications

- Real Time Clock Reference
- Internet of Things (IoT) devices
- Smart meters
- Audio, Video, Gaming products
- Portable Electronics

Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.		32.768		KHz	
Operating Temperature	T _{use}	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T _{stg}	-55		+125	°C	
Supply Voltage	V _{dd}	1.8		3.3	V	
Output Load	L _{CMOS}		15		pF	
Current Consumption	I _{cc}			7.2	μ A	No load condition, V _{dd} =3.0V
				6.5		No load condition, V _{dd} =1.8V
Duty Cycle	SYM	45		55	%	50 % V _{dd} level, L _{CMOS} $\leq$ 15 pF
Rise / Fall Time	T _R / T _F			25	nS	10% V _{dd} to 90% Level
Start-up Time	T _{str}			20	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9V _{dd}			V	
Low output voltage	V _{OL}			0.1V _{dd}	V	
Enable Voltage High (Logic 1)	V _{IH}	0.7V _{dd}			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V _{IL}			0.3V _{dd}	V	
Enable Voltage Low (Logic 0)	V _{PLZ}			20	mS	
Aging	f _{age}			3	ppm	1st. Year at 25°C

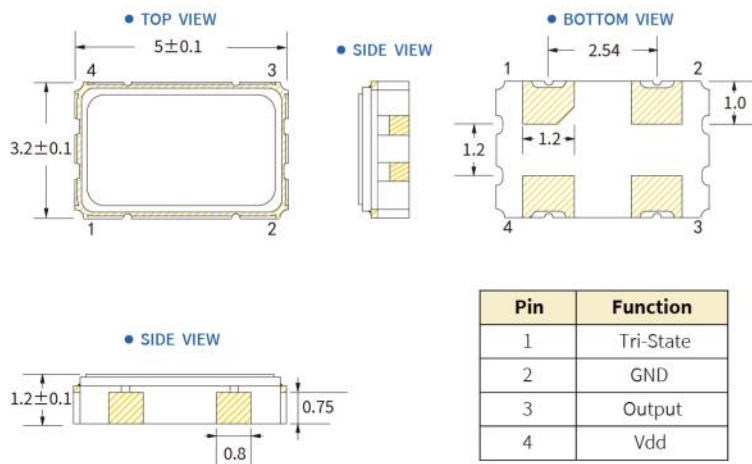
Frequency Stability & Operating Temperature Range

Temp.	FT	± 20 ppm	± 25 ppm	± 30 ppm	± 50 ppm
-20°C to +70°C		Δ	★	★	★
-40°C to +85°C			Δ	★	★

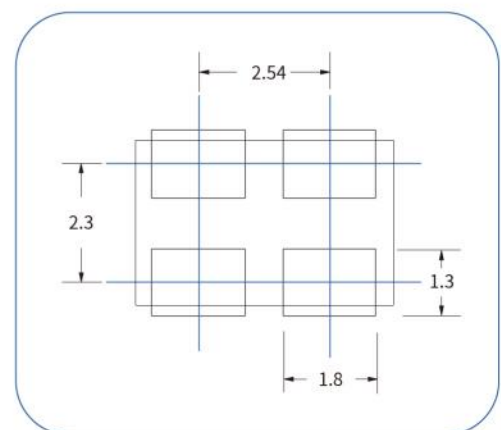
★: Available Δ : Conditional

All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



7CKL Series 7.0 x 5.0 mm SMD Crystal Oscillator

Feature

- Miniature Ceramic surface mount with Metal Lid
- CMOS compatible logic levels
- Tri-state function available
- Low power active mode: 7.2μA max
- Supply voltage range : 1.8V ~ 3.3V
- RoHS Compliant / Pb Free

Applications

- Real Time Clock Reference
- Internet of Things (IoT) devices
- Smart meters
- Audio, Video, Gaming products
- Portable Electronics

Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Frequency Range	Freq.		32.768		KHz	
Operating Temperature	T _{use}	-20		+70	°C	
		-40		+85	°C	
Storage Temperature Range	T _{stg}	-55		+125	°C	
Supply Voltage	V _{dd}	1.8		3.3	V	
Output Load	L _{CMOS}		15		pF	
Current Consumption	I _{cc}			7.2	μA	No load condition, V _{dd} =3.0V
				6.5	μA	No load condition, V _{dd} =1.8V
Duty Cycle	SYM	45		55	%	50 % V _{dd} level, L _{CMOS} ≤ 15 pF
Rise / Fall Time	T _R / T _F			25	nS	10% V _{dd} to 90% Level
Start-up Time	T _{str}			20	mS	To 90% of Final Amplitude
High output voltage	V _{OH}	0.9V _{dd}			V	
Low output voltage	V _{OL}			0.1V _{dd}	V	
Enable Voltage High (Logic 1)	V _{IH}	0.7V _{dd}			V	Output will be disable if OE is Logic 0 Output will be enable if OE is Logic 1 or open
Enable Voltage Low (Logic 0)	V _{IL}			0.3V _{dd}	V	
Enable Voltage Low (Logic 0)	V _{PLZ}			20	mS	
Aging	f _{age}			3	ppm	1st. Year at 25°C

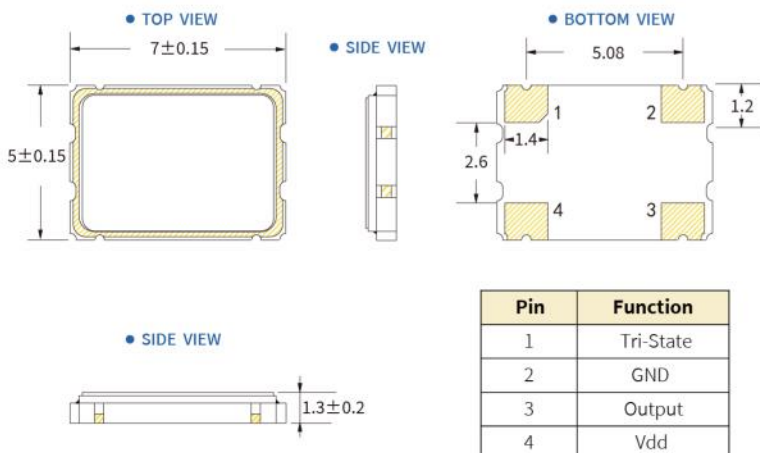
Frequency Stability & Operating Temperature Range

Temp.	FT	±20ppm	±25ppm	±30ppm	±50ppm
-20°C to +70°C	△	★	★	★	★
-40°C to +85°C		△	★	★	★

★: Available △: Conditional

All condition: Include 25°C tolerance, operating temperature range, input voltage change, aging, load change.

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)

