Tuning Fork Crystal Resonator

TF7015

Feature

- Ceramic surface mount
- Package Size： 7.0 x 1.5 x 1.4mm max
- Low Aging, Low Power Consumption,high reliability characteristics
- RoHS Compliant / Pb Free

Applications

- Real Time Clock
- Portable Electronics
- Smart Meters
- Communication Electronics
- IoT Devices



Pb free RoHS compliant

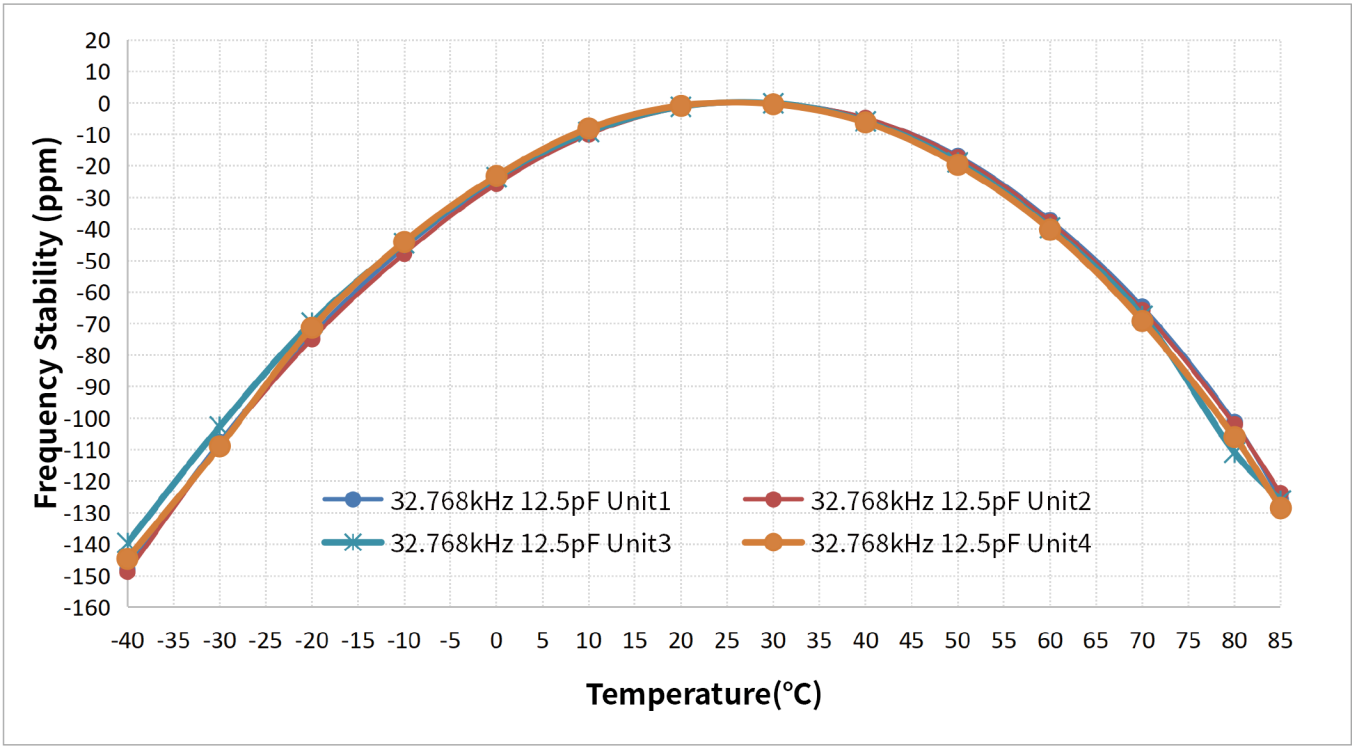
Electrical Specifications

Item	Symb.	Min.	Typ.	Max.	Unit	Notes
Nominal Frequency	Freq.		32.768		kHz	
Oscillation Mode			Fundamental			
Operating Temperature	T_use	-40	—	+85	°C	
Storage Temperature Range	T_stg	-55	—	+125	°C	
Frequency Tolerance	f_tol	-20	—	+20	ppm	at 25°C±3°C
Turnover Temperature	Ti	+20	+25	+30	°C	
Parabolic curvature constant	B	—	—	-0.042	ppm/(△°C)²	Over Operating Temp. Range (Reference 25°C)
Drive Level	DL	—	—	0.5	μW	
Load Capacitance	CL		12.5		pF	
Effective Resistance	RR	—	—	65	kΩ	
Shunt Capacitance	C0	—	0.8	—	pF	
Motional Capacitance	C1	—	1.9	—	fF	
Aging	f_age	-3	—	+3	ppm	1st. Year at 25°C

TEL:0755-86097105 E-mail:sales@sctf-crystal.com Web:www.sctf-crystal.com
Add:10th Floor, T2 Building, Fangda City, Longzhu Fourth Road, Nanshan District, Shenzhen, China
Revision: 11/03/2026

Electrical Specifications Cont.

- Table 1: Frequency Stability VS. Temperature

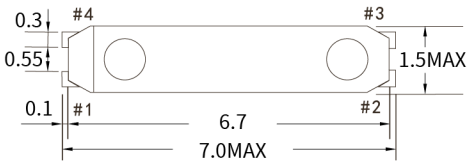


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Dimensions (UNIT:mm)

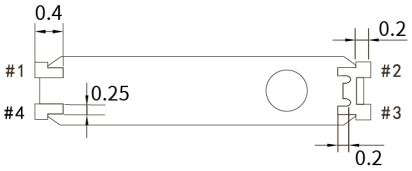
● TOP VIEW



● SIDE VIEW

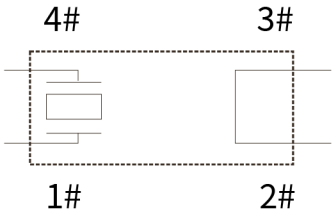


● BOTTOM VIEW



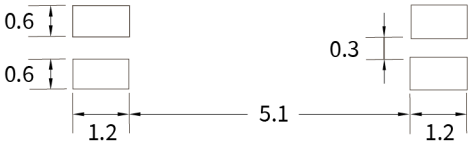
● SIDE VIEW





Notes:
(1)Do not connect 2# and 3# to external device.
(2)The metal case inside of the molding compound may be exposed on the top or bottom of this product. This purely cosmetic and does not have any effect on quality reliability or electrical specs.

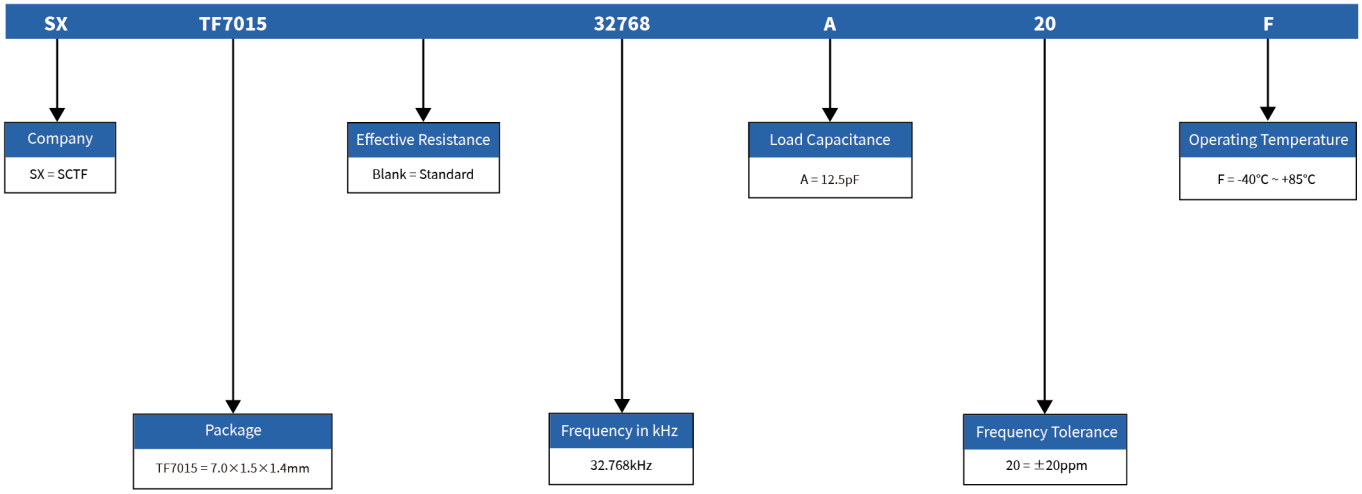
Solder pad layout (UNIT:mm)



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Options and Part Identification



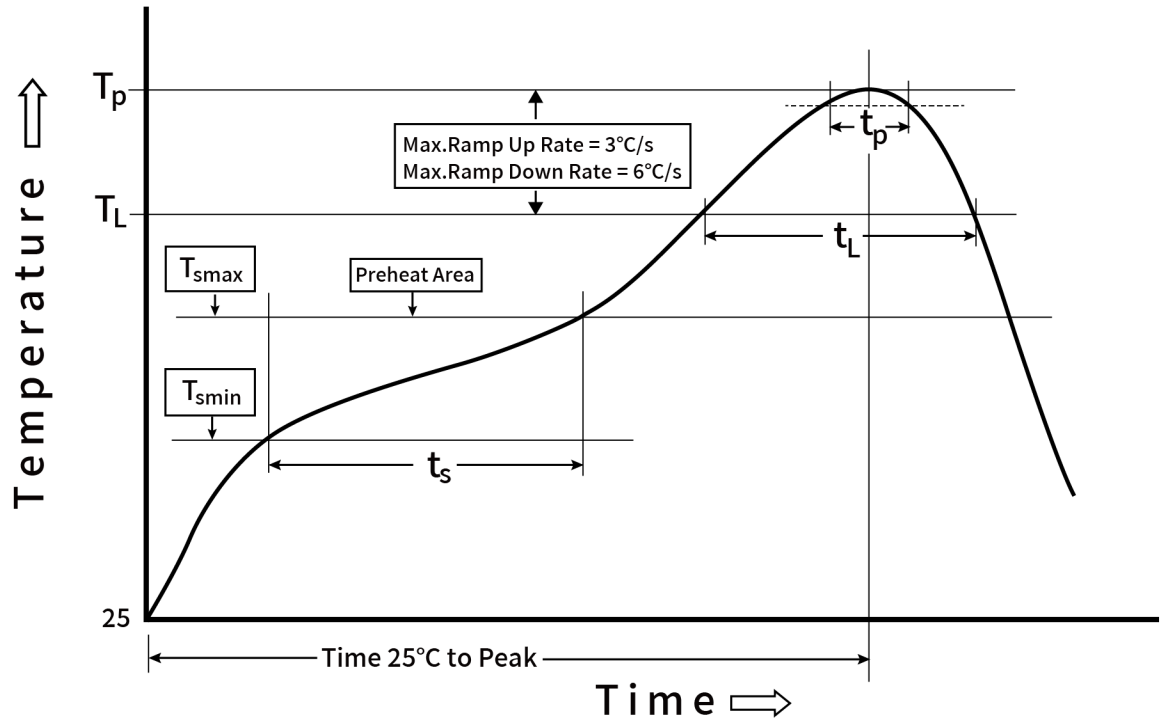
List of available part numbers

Part NO#
SXTF701532768A20F

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Reflow Profile



Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak ● Temperature Min (Ts min) ● Temperature Max (Ts max) ● Time (Ts min to Ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (TL to Tp)	3°C/ second max.	3°C/ second max.
Time maintained above ● Liquidous temperature (TL) ● Time (tL) maintained above TL	183°C 60-150 seconds	217°C 60-150 seconds
Peak package body temperature (Tp)	235°C	260°C
Time within 5° C of the specified classification temperature (Tp)	20 seconds	30 seconds
Ramp - down rate (Tp to TL)	6°C/ second max.	6°C/ second max.
Time 25° C to peak temperature	6 minutes max.	8 minutes max.
Suggust reflow times	**2 Times max.**	

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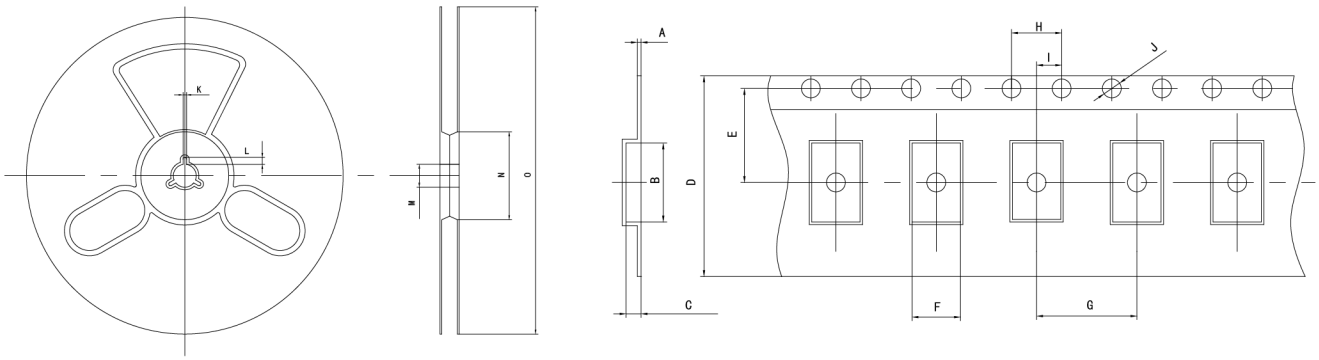
Reliability Specification

NO.	Item	Conditions	Basis of Verdict
1	Drop	High:150cm;cement floor;3 times.	△FL≤±20ppm △RR≤RR(max)*10%
2	Vibration	Frequency:10~500Hz speed:11min/cycle Amplitude:1.5mm(10~55Hz) acceleration rate:200m/s2(55~500Hz) Direction:X,Y,Z Test cycle:10 cycles	△FL≤±10ppm △RR≤RR(max)*10%
3	Temperature Shock	-40°C±2°C（30min）←→85°C±2°C（30min）; For 10 cycles	△FL≤±10ppm △RR≤RR(max)*10%
4	Humidity	Temp:40°C±2°C;Humidity:90-95%;Times:96h	△FL≤±10ppm △RR≤RR(max)*10%
5	Cold Resistance	Temp:-40°C±2°C;Times:96h	△FL≤±10ppm △RR≤RR(max)*10%
6	Heat Resistance	Temp:125°C±2°C;Times:96h	△FL≤±10ppm △RR≤RR(max)*10%
7	Reflow	Keep 150 °C ± 5 °C 120s and then rose to 260 °C ± 5 °C for 10s,warming and holding time is less than the 200s, placed at room temperature 1 ~ 2h after test	△FL≤±20ppm △RR≤RR(max)*10%
8	Aging	Temp:85°C;Times:30days	△FL≤±5ppm △RR≤RR(max)*10%
9	Leakage	He(0.6~0.65MPa):10min	≤3*10-9Pa.m3/s
10	Solder	Temp:235°C±5°C	Soldering tin rate greater than 90%
11	Terminal Strength	Bending: 3mm, Hold time: 5sec, Speed: 0.5mm/sec	△FL≤±20ppm △RR≤RR(max)*10%
12	Sticking Tendency	Load: 10N, Hold time: 10 seconds, Fixture: R0.5 (product side position)	△FL≤±20ppm △RR≤RR(max)*10%
13	Element Assembly Strength	Load: 10N, Hold time: 10 seconds, Fixture: R0.5 (product center position)	△FL≤±20ppm △RR≤RR(max)*10%

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Taping Specifications



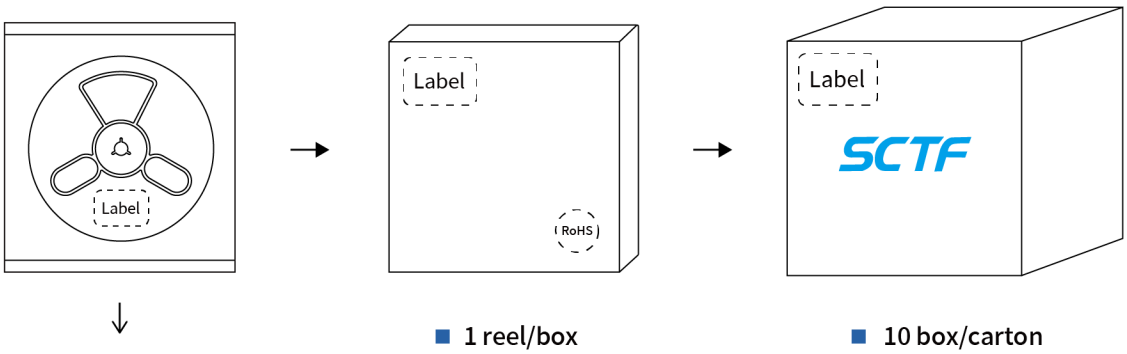
- 32.768KHz Tunning Fork Crystal [Tape and reel (9,000pcs/reel)]

Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TF7015	0.30±0.1	7.2±0.1	1.7±0.1	16.0±0.3	7.5±0.1	1.7±0.1	8.0±0.1	4.0±0.1	2.0±0.1	ϕ1.5±0.1	2.0±0.2	4.0±1.0	ϕ13±0.5	ϕ100±1	ϕ330±1

- 32.768KHz Tunning Fork Crystal [Tape and reel (3,000pcs/reel)]

Series	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TF7015	0.30±0.1	7.2±0.1	1.4±0.1	16.0±0.3	7.5±0.1	1.7±0.1	4.0±0.1	4.0±0.1	2.0±0.1	ϕ1.5±0.1	2.0±0.2	4.0±1.0	ϕ13±0.5	ϕ60±1	ϕ180±1

Packaging specifications



■ 1 reel/box

■ 10 box/carton

Series	Packaging
TF7015	3,000 pcs/reel
	9,000 pcs/reel