

TF7015 Series 7.0 x 1.5 mm TUNING FORK Crystal

TF : TUNING FORK Crystal

7015 : 7.0×1.5×1.4 mm

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

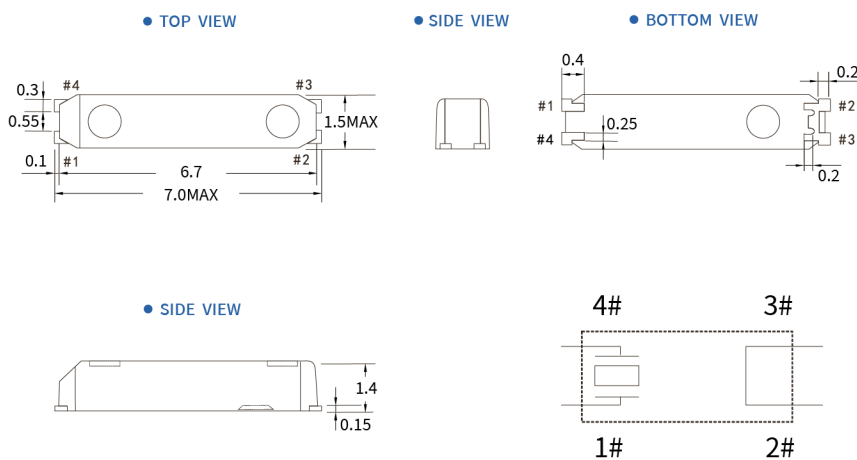
- Real Time Clock
- Portable Electronics
- Smart Meters
- Communication Electronics
- IoT Devices



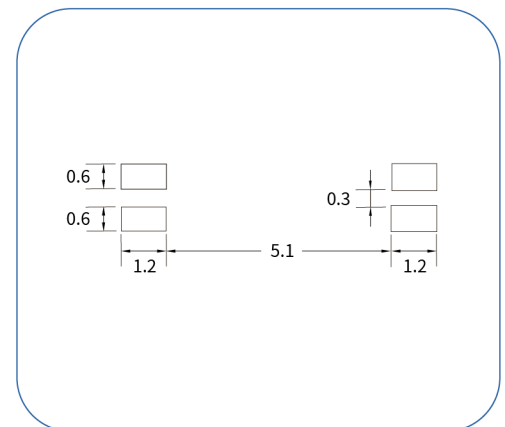
Electrical Specifications

Item	Symb.	Electrical spec.	Notes
Nominal Frequency	Freq.	32.768KHz	
Operating Temperature	T_use	-40°C~+85°C	
Storage Temperature Range	T_stg	-55°C~+125°C	
Oscillation Mode		Fundamental	
Frequency Tolerance	f_tol	±10ppm / ±20ppm	at 25°C±3°C
Turnover Temperature	Ti	+25°C±5°C	
Parabolic curvature constant	B	-0.042ppm/(Δ°C) ² max.	Over Operating Temp. Range (Reference 25°C)
Drive Level	DL	0.5 μW Max.	
Load Capacitance	CL	7pF;9pF;12.5pF	
Effective Resistance	RR	65kΩ max.	
Aging	f_age	±3 ppm Max.	1st.Year at 25°C

Dimensions (UNIT:mm)



Solder pad layout (UNIT:mm)



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.

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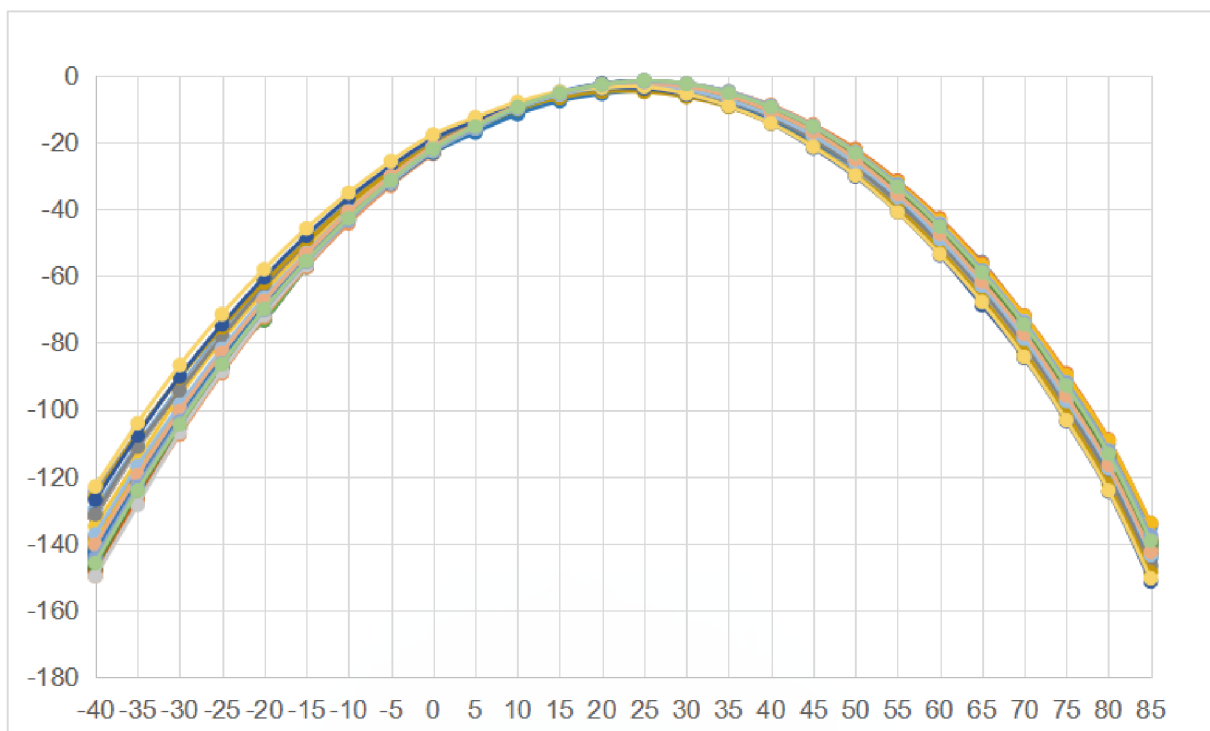
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Options and Part Identification : Example SXTF701532768A20F

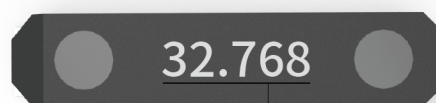
Company	Ceramic Package	Effective Resistance	Frequency Code [KHZ]	Load Capacitance	Frequency Tolerance	Operating Temperature
SX	TF7015		32768	A	20	F
Code Company	Code Ceramic Package	Code Effective Resistance	Frequency	Code Load Capacitance	Code Frequency Tolerance	Code Operating Temperature
SX SCTF	TF1610 1.6×1.0×0.5mm TF2012 2.0×1.2×0.6mm TF3215 3.2×1.5×0.8mm TF7015 7.0×1.5×1.4mm	Blank Standard	32.768	A 12.5pF G 9pF C 7pF D 6pF	10 ±10ppm 20 ±20ppm	E -20°C ~ +70°C F -40°C ~ +85°C

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

Frequency Temperature Characteristics



Marking Information



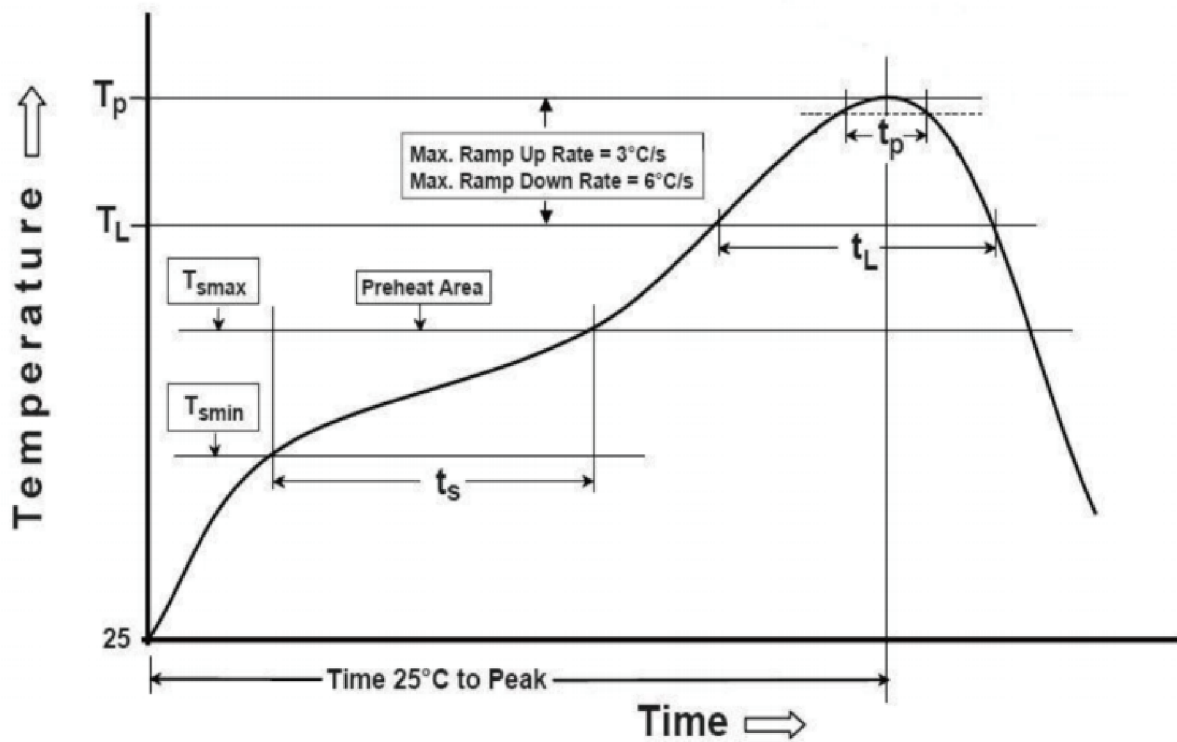
Nominal Frequency [KHz]

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Suggested Reflow Profile



Profile Feature	Sn - Pb Eutectic Assembly	Preheat / Soak
Preheat / Soak <ul style="list-style-type: none"> ● Temperature Min (T_s min) ● Temperature Max (T_s max) ● Time (T_s min to T_s max) 	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Ramp - up rate (T _L to T _p)	3°C/ second max.	3°C/ second max.
Time maintained above <ul style="list-style-type: none"> ● Liquidous temperature (T_L) ● Time (t_L) maintained above T_L 	183°C 60-150 seconds	217°C 60-150 seconds
Peak package body temperature (T _p)	235°C	260°C
Time within 5° C of the specified classification temperature (T _p)	20 seconds	30 seconds
Ramp - down rate (T _p to T _L)	6°C/ second max.	6°C/ second max.
Time 25° C to peak temperature	6 minutes max.	8 minutes max.
Suggest reflow times	2 Times max.	

更新日期：2024年4月7日

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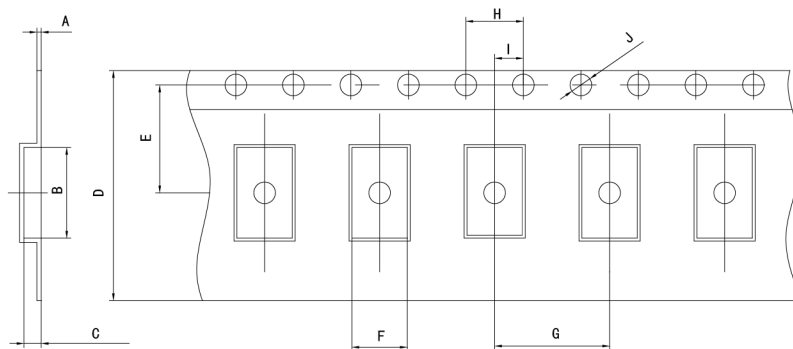
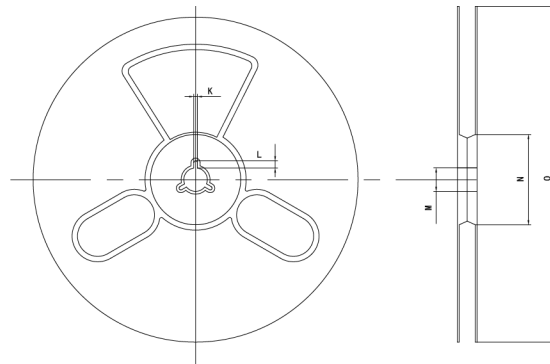
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Packaging Information

T=Tape and reel (9,000pcs/reel)



T=Tape and reel (3,000pcs/reel)



Pocket Tape Dimensions(mm)

- 32.768KHz Tuning 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 Tuning 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