

Feature

- Miniature Cylindrical Tuning Fork Crystals
- Package Size: Φ2.0 x 6.0 mm/Φ3.0 x 8.0 mm
- Low Aging, Low Power Consumption, High Shock
- RoHS Compliant / Pb Free

Applications

- Real Time Clock
- Consumer Devices
- Portable Electronics
- Time Display Devices



Electrical Specifications

Item	Symb.	Electrical spec.	Notes
Nominal Frequency	Freq.	32.768KHz	
Operating Temperature	T_use	-10°C~+60°C/-20°C~+70°C	
Storage Temperature Range	T_stg	-40°C~+85°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	1 μW Max.	
Load Capacitance	CL	6pF;7pF;9pF;12.5pF	
Effective Resistance	RR	30kΩ max.	
Aging	f_age	±3 ppm Max.	1st.Year at 25°C

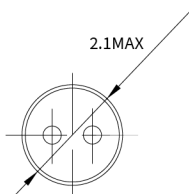
Dimensions (UNIT:mm)

TF206 Series

SIDE VIEW



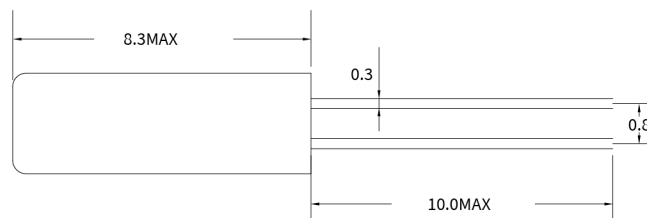
BOTTOM VIEW



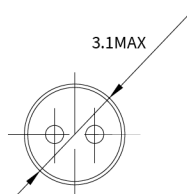
Dimensions (UNIT:mm)

TF308 Series

SIDE VIEW



BOTTOM VIEW



TF206/TF308 Series

Φ2.0 x 6.0 mm | Φ3.0 x 8.0 mm
TUNING FORK Crystal

TF : TUNING FORK Crystal

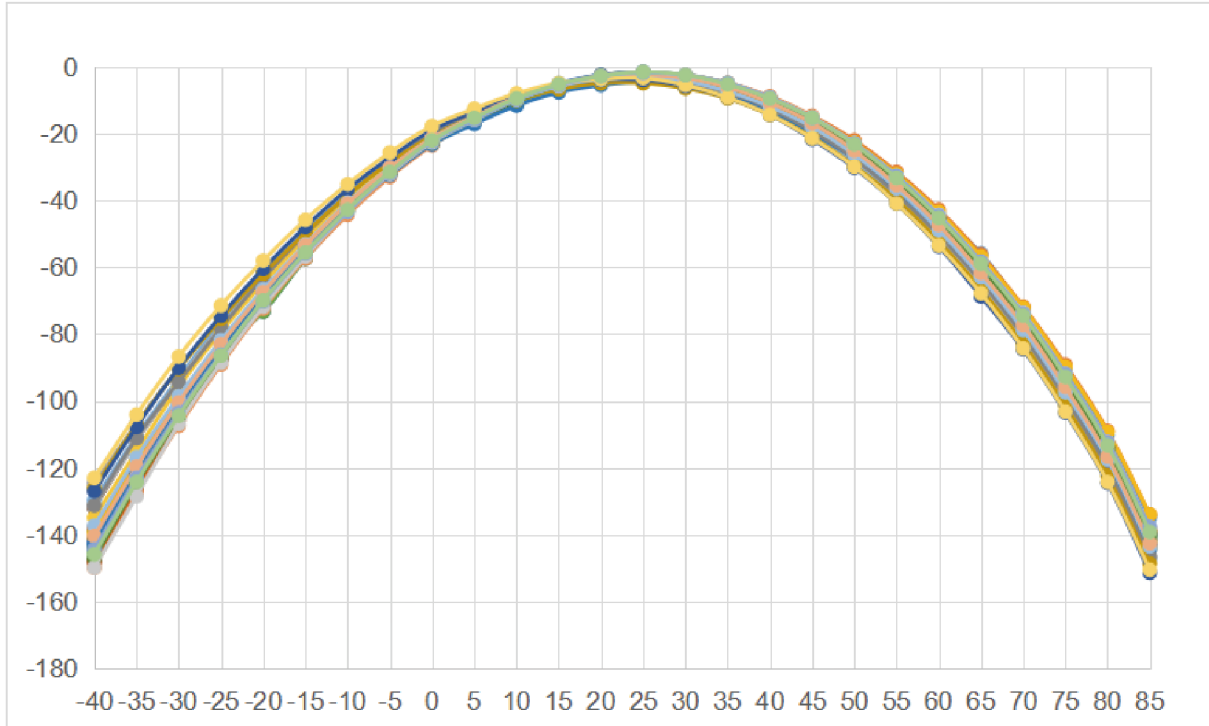
206/308 : Φ2.0 x 6.0 mm / Φ3.0 x 8.0 mm

Options and Part Identification : Example SXDB32.768KA20E

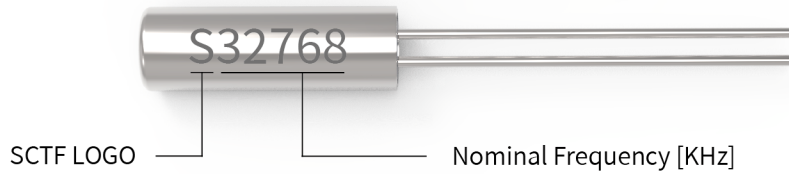
Company	Ceramic Package	Frequency Code [KHZ]	Load Capacitance	Frequency Tolerance	Operating Temperature
SX	DB	32.768K	A	20	E
↓	↓	↓	↓	↓	↓
Code Company		Frequency		Code Frequency Tolerance	
SX SCTF		32.768K		10 ±10ppm	
	Code Ceramic Package		Code Load Capacitance	20 ±20ppm	
	DB Φ2.0×6.0 mm		A 12.5pF		Code Operating Temperature
	DC Φ3.0×8.0 mm		G 9pF		C -10°C~+60°C
			C 7pF		E -20°C~+70°C
			D 6pF		

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

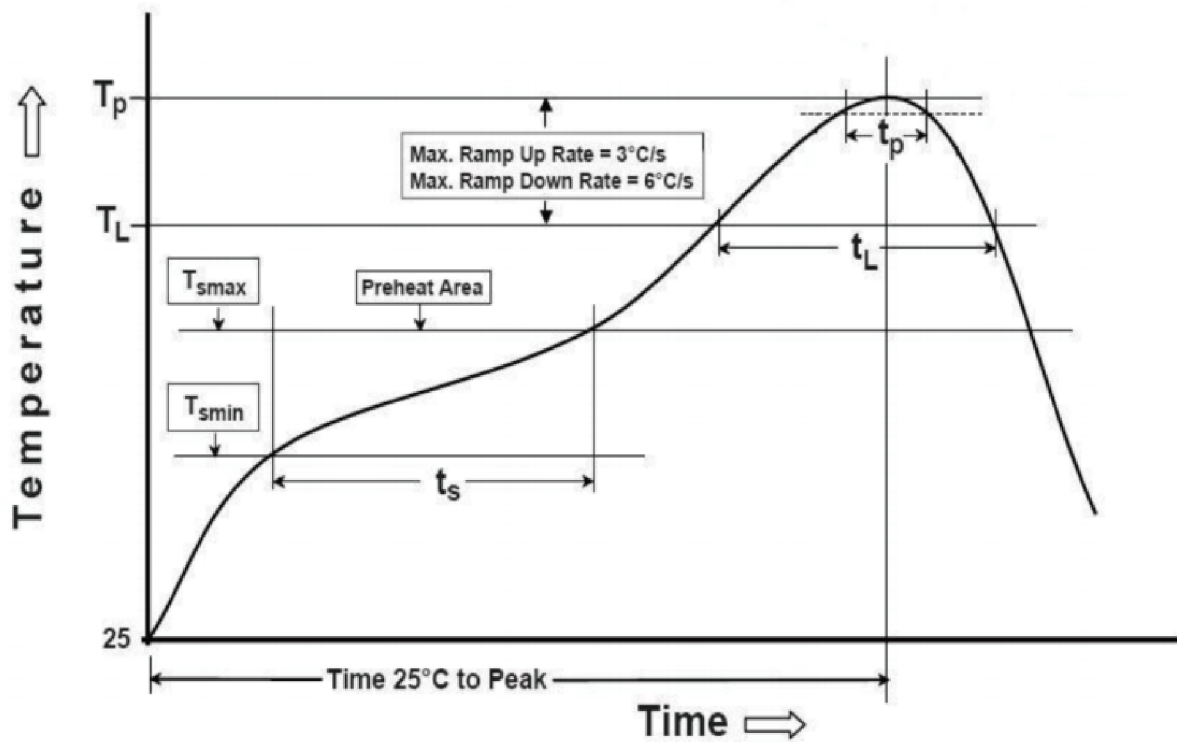
Frequency Temperature Characteristics



Marking Information



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.	

Packaging Information

- TF308

T=Bag and box (1,000pcs/bag)



T=Bag and box (5,000pcs/box)



- TF206

T=Bag and box (1,000pcs/bag)



T=Bag and box (10,000pcs/box)

