



## Through Hole Tuning Fork Crystal

### Features

- Suitable for Time of Day Clocks
- Small and Compact Package
- Excellent Shock and Environmental Characteristics



### ❖ Specifications

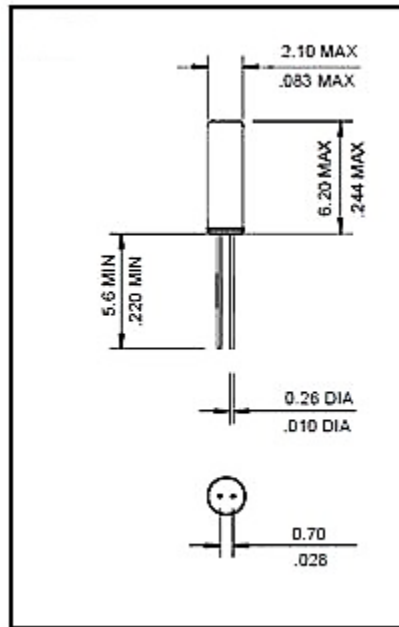
Parameter	Value
Nominal Frequency	32.768 kHz
Frequency Tolerance at 25°C	±20 ppm max
Turnover Temperature	+25°C ±5°C
Parabolic Curvature Constant	(-0.034 ±0.006) ppm/°C <sup>2</sup>
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-55°C to +125°C
Aging	±3 ppm per year max
Load Capacitance	6, 7, 8, 9 pF or 12.5 pF
Equivalent Series Resistance	50 kΩ max
Shunt Capacitance	1.35 pF typ
Motional Capacitance	0.003 pF typ
Capacitance Ratio	450 typ
Drive Level	1 μW max
Insulation Resistance	500 MΩ min
Shock Resistance	±5 ppm max 5 cm drop test onto a hard wood surface

### ❖ Environmental

Parameter	Value
Moisture Sensitivity Level	1
RoHS	Compliant – Exemption 7a
REACH SVHC	Compliant
Halogen Free	Compliant
ESD Classification Level	N/A
Termination Finish	Sn
Unit Weight (grams)	0.14

RS, Professionally Approved Products, gives you professional quality parts across all products categories. Our range has been testified by engineers as giving comparable quality to that of the leading brands without paying a premium price.

## ❖ Mechanical Specification



## ❖ Part Numbering

Product Family	-	Frequency	-	Load Capacitance	-	Tolerance
KB		Frequency (kHz)		Load Capacitance (pF) 6, 7, 8, 9 or 12.5		Blank: ±20 ppm G: ±5 ppm E: ±10 ppm

### EXAMPLE: KB-32.768-12.5

Surface Mount Tuning Fork Crystal, 8.2 x 3.1 mm, 32.768 kHz, 12.5 pF load capacitance, ±20 ppm tolerance, operating temperature range -40°C to +85°C

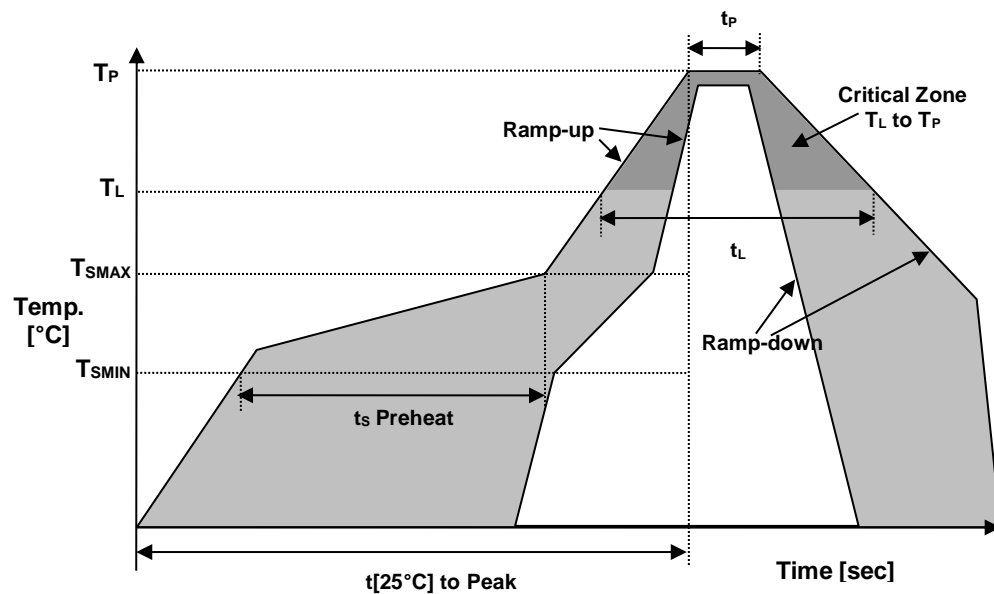
### EXAMPLE: KB-32.768-9-E

Surface Mount Tuning Fork Crystal, 8.2 x 3.1 mm, 32.768 kHz, 9 pF load capacitance, ±10 ppm tolerance, operating temperature range -40°C to +85°C



# KA PRODUCT FAMILY

## Reflow Profile



Reflow Profile (Reference IPC/JEDEC J-STD-020)		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60 – 180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-Up Rate	$R_{UP}$	3°C / sec. max
Ramp-Down Rate	$R_{DOWN}$	6°C / sec. max
Time within 5°C of Peak Temperature	$T_P$	10 sec.
Time $t[25°C]$ to Peak Temperature	$t[25°C]$ to Peak	480 sec.
Time	$T_L$	60 – 150 sec.

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# KA PRODUCT FAMILY

● **MARKING**

xFLmyR

- x – Internal Production ID code
- F – Frequency Code
- L – Load Capacitance Code
- m – Month code
- y – Year code
- R

LOAD CAPACITANCE CODE	
CODE	C <sub>L</sub> (pF)
Q	6
7	7
8	8
9	9
F	12.5

FREQUENCY CODE	
CODE	Frequency (kHz)
3	32.768

YEAR CODE	
Year	Code
2011	1
2012	2
2013	3
2014	4
2015	5
2016	6
2017	7
2018	8
2019	9
2020	0

MONTH CODE	
Month	Code
JANUARY	A
FEBRUARY	B
MARCH	C
APRIL	D
MAY	E
JUNE	F
JULY	G
AUGUST	H
SEPTEMBER	J
OCTOBER	K
NOVEMBER	L
DECEMBER	M

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May 2017