

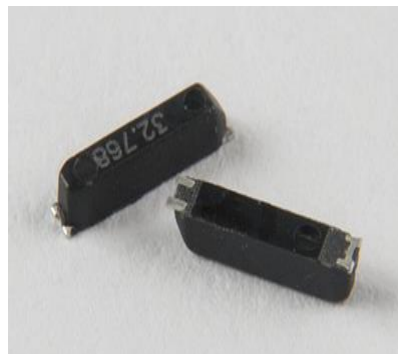


KE PRODUCT FAMILY

Surface Mount Tuning Fork Crystal 6.9 x 1.4

Features

- Low Profile 1.3 mm Height
- 32.768 kHz
- Suitable for Time of Day Clock



❖ Specifications

Parameter	Value
Nominal Frequency	32.768 kHz
Frequency Tolerance at 25°C	±50 ppm Standard (±10 and ±20 ppm available)
Parabolic Curvature Constant	(-0.035 ±0.01) ppm/ °C ²
Operating Temperature Range	-40 °C to +85 °C Standard
Storage Temperature Range	-40 °C to +125 °C
Aging	±3 ppm per Year Maximum
Load Capacitance	12.5 pF
Equivalent Series Resistance	65 kΩ Maximum
Shunt Capacitance	0.8 pF Typical
Drive Level	0.1 μW typical, 1 μW Max
Shock Resistance	±5 ppm Maximum 75 cm Drop Test in 3 axes onto a hardwood surface

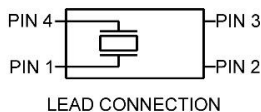
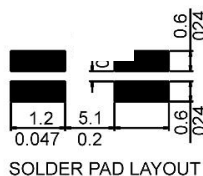
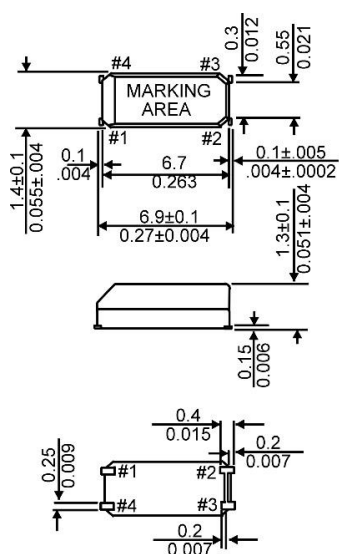
❖ Environmental

Parameter	Value
Moisture Sensitivity Level	1
RoHS	Compliant
REACH SVHC	Compliant
Halogen Free	Compliant
Termination Finish	Sn
Unit Weight (grams)	0.134

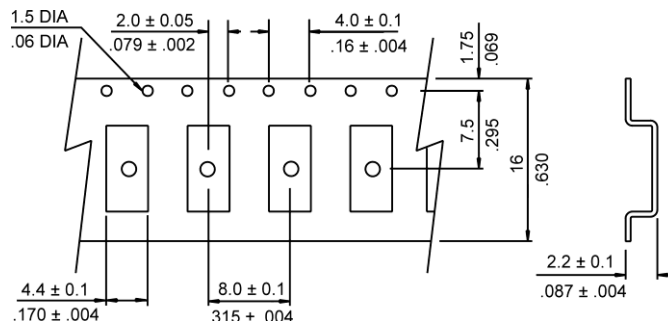


KE PRODUCT FAMILY

❖ Mechanical Specification



❖ Carrier Tape Dimension



NOTE: REFER TO EIA-481 FOR DIMENSIONS

❖ Packaging

330 mm Reel Diameter
16 mm Tape Width, 8 mm Pitch
Quantity: 3000 pcs per Reel

❖ Part Numbering

KE	-	32.768	-	12.5	-	X
Product Family		Frequency (MHz)		Load Capacitance (pF)		1) Tolerance
				9 or 12.5		Tolerance: E=±10 ppm, D=±20 ppm, B=±50 ppm standard

EXAMPLE: KE-32.768-12.5-B

Surface Mount Tuning Fork Crystal, 4.1 x 1.5 mm, 32.768 kHz, 12.5 pF load Capacitance, tolerance ±50 ppm

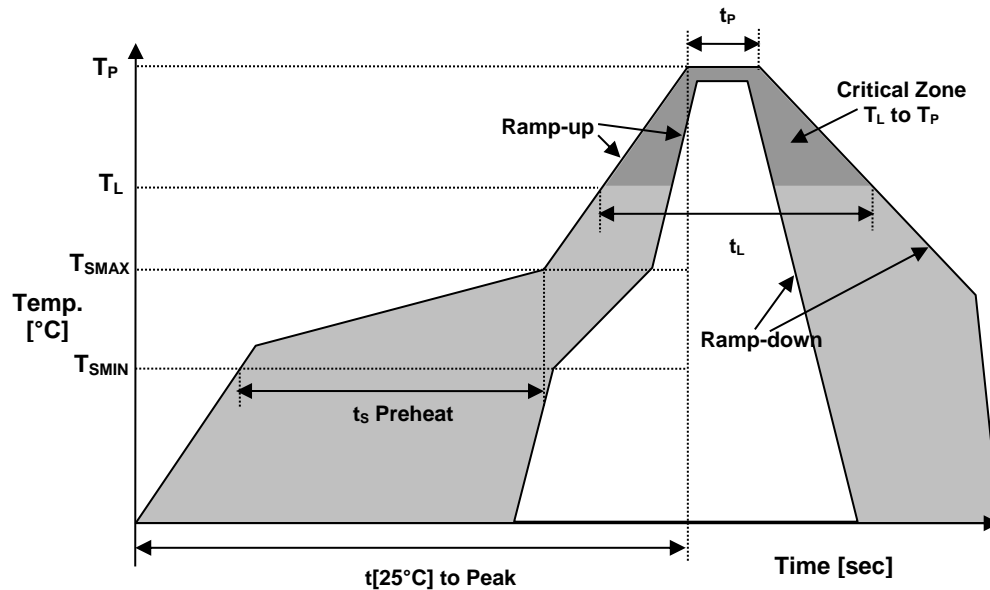
EXAMPLE: KE-32.768-9-D

Surface Mount Tuning Fork Crystal, 4.1 x 1.5 mm, 32.768 kHz, 9 pF load Capacitance, tolerance ±20 ppm



KE 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 $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	T_L	60 – 150 sec.



KE PRODUCT FAMILY

● MARKING

xFLmyR

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

LOAD CAPACITANCE CODE	
CODE	C _L (pF)
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

● APPROVAL

DRAWN BY	FP, 20 May 2017
APPROVED BY	FP, 20 May 2017
REVISION	A, Initial Release