kHz Range Crystal unit
Product name
Product Number / Ordering code

FC-12M $32.768000 \mathrm{kHz} 9.0+20.0-20.0$
X1A0000610008xx
Please refer to the 5.Packing information about $x x$ (last 2 digits)

Pb free / Complies with EU RoHS directive
Reference weight Typ. 5 mg

| 1.Absolute maximum ratings |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :--- |
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
| Storage temperature | $\mathrm{T}_{-}$stg | -55 | - | +125 | ${ }^{\circ} \mathrm{C}$ | Storage as single product |
| Maximum drive level | GL | - | - | 0.5 | $\mu \mathrm{~W}$ |  |

## 2.Specificatoins(characteristics)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions / Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nominal frequency | f_nom | - | 32.768 | - | kHz |  |
| Operating temperature | T_use | -40 | - | +85 | ${ }^{\circ} \mathrm{C}$ |  |
| Level of drive | DL | - | - | 0.5 | $\mu \mathrm{W}$ |  |
| Frequency tolerance | f_tol | -20.0 | - | +20.0 | $\times 10^{-6}$ | +25ํ.C DL= $0.1 \mu \mathrm{~W}$ |
| Turnover temperature | Ti | +20 | +25 | +30 | ${ }^{\circ} \mathrm{C}$ |  |
| Parabolic coefficient | B | - | - | -0.04 | $\times 10^{-6} /{ }^{\circ} \mathrm{C}^{2}$ |  |
| Load capacitance | CL | - | 9.0 | - | pF |  |
| Motional resistance (ESR) | R1 | - | 65 | 90 | k $\Omega$ |  |
| Motional capacitance | C1 | - | 6.4 | - | fF |  |
| Shunt capacitance | C0 | - | 1.3 | - | pF |  |
| Motional inductance | L1 | - | 3.7 | - | kH |  |
| Frequency aging | f_age | -3 | - | +3.0 | x10 ${ }^{-6}$ yea | @+25º , First year |



## 5.Packing information

[ 1 ]Product number last 2 digits code ( xx ) description
The recommended code is "18"
X1A0000610008xx

| Code | Condition | Code | Condition |
| :---: | :--- | :---: | :--- |
| 01 | Any Q'ty vinyl bag(Tape cut) | 00 | $3000 \mathrm{pcs} /$ Reel |
| 11 | Any Q'ty / Reel | 18 | $5000 \mathrm{pcs} /$ Reel |
| 12 | $250 \mathrm{pcs} /$ Reel |  |  |
| 14 | $1000 \mathrm{pcs} /$ Reel |  |  |

[ 2 ] Taping specification
Subject to EIA-481 \& IEC-60286
(1) Tape dimensions TE0804L

Material of the Carrier Tape: PS
Material of the Top Tape : PET+PE
Unit: mm

(2) Reel dimensions

Material of the Reel: PS
Unit: mm

11.40 +1

## Reflow profile

Reflow condition (Follow of JEDEC STD-020D.01)


## Notice

- This material is subject to change without notice.
- Any part of this material may not be reproduced or duplicated in any form or any means without the written permission of Seiko Epson.
The information about applied data,circuitry, software, usage, etc. written in this material is intended for reference only.
Seiko Epson does not assume any liability for the occurrence of customer damage or infringing on any patent or copyright of a third party.
This material does not authorize the licensing for any patent or intellectual copyrights.
- When exporting the products or technology described in this material, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
- You are requested not to use the products (and any technical information furnished, if any) for the development and/or manufacture of weapon of mass destruction or for other military purposes. You are also requested that you
would not make the products available to any third party who may use the products for such prohibited purposes.
- These products are intended for general use in electronic equipment. When using them in specific applications that require
extremely high reliability, such as the applications stated below, you must obtain permission from Seiko Epson in advance.
/ Space equipment (artificial satellites, rockets, etc.)
/ Transportation vehicles and related (automobiles, aircraft, trains, vessels, etc.)
/ Medical instruments to sustain life
/ Submarine transmitters
/ Power stations and related
/ Fire work equipment and security equipment
/ Traffic control equipment
/ And others requiring equivalent reliability.
All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective.


## Contact us

http://www5.epsondevice.com/en/contact/

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components
Click to view similar products for Crystals category:
Click to view products by Epson manufacturer:

Other Similar products are found below :
CX3225GB25000M0PPSZ1 718-13.2-1 7A-40.000MAAE-T FL2000085 99-BU 9B-15.360MBBK-B 9C-7.680MBBK-T H10S-12.000-18-EXT-TR ABC2-6.000MHZ-D4Z-T ABLS-20.000MHZ-D2-T ABS071-32.768KHZ-6-T R38-32.768-12.5-5PPM-NPB BTD1062E05A-513 21U15A-21.4MHZ RTX-781DF1-S-20.950 LFXTAL066198Cutt 9C-14.31818MBBK-T A-11.000MHZ-27 ABL-27.000MHZ-B4Y-T ABM11-132-24.000MHZ-T3 ABM3B1-25.000MHZ-D2Y-T SPT2A-.032768B SPT2A.032768G SSPT7F-9PF20-R LFXTAL065253Cutt LFXTAL066431Cutt XT9S20ANA14M7456 XT9SNLANA16M 7A-24.576MBBK-T 7B-30.000MBBK-T MMCC2R32.7680KHZ 7A-14.31818MBBK-T 6504-202-1501 6526-202-1501 ABLS-12.000MHZ-B2Y-T 7A-10.000MBBK-T SG636PCE-20.000MC 3404 E1SAA1825.000M TR CM315D32768EZFT C1E-24.000-7-2020-R C1E-19.200-12-1530-X-R C1E-16.000-12-1530-X-R ABM11-16.000MHZ-9-B1U$\underline{T}$ FL5000014 EUCA18-3.1872M FX0800015 425F35E027M0000 FP0800018 MS3V-T1R-32.768kHz-7pF-20PPM-TA-QC-Au

