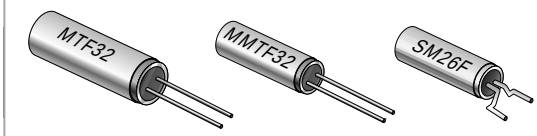


MTF32 MMTF32 SM26F

actual size

Quartz Crystal • MTF

Tuning Fork Quartz Crystal

Features

- three different package versions
- surface mount version available

General Data

type	MTF32		MMTF32		SM26F	
frequency	32.768 kHz (15.0 ~ 150.0 kHz)		32.768 kHz (28.0 ~ 80.0 kHz)		32.768 kHz (28.0 ~ 80.0 kHz)	
frequency tolerance at 25 °C	± 10 ppm	± 20 ppm	± 10 ppm	± 20 ppm	± 20 ppm	± 30 ppm
load capacitance C_L	10 pF	12.5 pF	10 pF	12.5 pF	12.5 pF	12.5 pF
frequency temperature characteristic	f (ppm) = -0.036 (25°C -T*)^2		f (ppm) = -0.036 (25°C -T*)^2		f (ppm) = -0.036 (25°C -T*)^2	
operating tenperature range	-20°C ~ +70°C / -40°C ~ +85°C		-20°C ~ +70°C / -40°C ~ +85°C		-20°C ~ +70°C / -40°C ~ +85°C	
shunt capacitance C_0	1.3 pF typical		1.1 pF typical		1.1 pF typical	
ratio C_0 / C_1	530 typical		470 typical		570 typical	
series resistance max. (ESR)	30.0 kΩ		30.0 kΩ		50.0 kΩ	
storage temperature	-40 °C ~ +90 °C		-40 °C ~ +90 °C		-40 °C ~ +90 °C	
drive level max.	1 µW		1 µW		1 µW	
aging first year	< ± 5 ppm		< ± 5 ppm		< ± 5 ppm	

* T = requested temperature

Frequency Stability vs. Temperature

		- 80 ppm	- 160 ppm			
-20 °C ~ +70 °C	STD.	●				
-40 °C ~ +85 °C	T1		●			

● standard

Marking

KDS 32.768 / date code (month / year)

date code: A ~ M: Jan.- Dec.

2: 2002 / 3: 2003

Jan.	Febr.	Mar.	Apr.	May	June
A	B	C	D	E	F

July	Aug.	Sept.	Oct.	Nov.	Dec.
G	H	J	K	L	M

Order Information

Q	frequency in MHz	—	type	—	load capacitance in pF	—	stability at 25 °C in ppm	—	option
Quartz	0.032768 MHz standard 15.0 ~ 150.0 kHz MTF32 28.0 ~ 80.0 kHz MMTF32 28.0 ~ 80.0 kHz SM26F		MTF32 MMTF32 SM26F		6 pF ~ 12,5 pF		± 20 ppm ± 10 ppm		T1= -40°C~+85°C

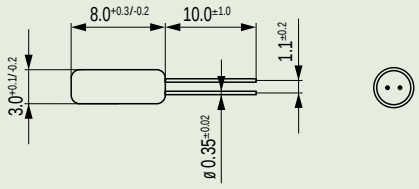
Example: Q 0.032768-MTF32-12.5-20

Jauch
The pulse of progress

Quartz Crystal • MTF32 • MMTF32 • SM26F

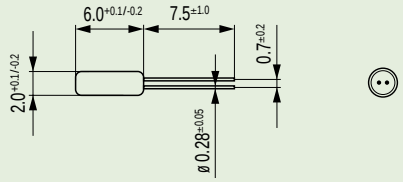
Dimensions

MTF32



in mm

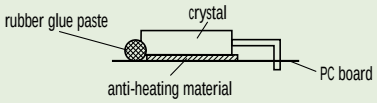
MMTF32



in mm

tuning fork crystal - handling note for through hole type

1. mounting:
- if the crystal is mounted on board directly (orientation: lay down) or fixed by metal parts, the body of the crystal will be heated up
- recommended mounting:



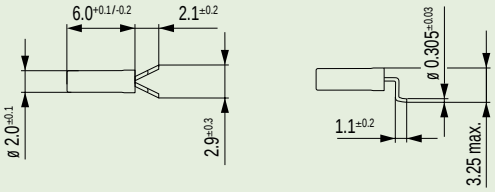
2. soldering:
- pre-heating +130 °C ~ + 150 °C for 1 to 3 mintues
- soldering +230 °C ~ + 250 °C for 5 seconds maximum

3. cleaning:
- ultrasonic cleaning with organic solvents
- ultrasonic frequency should not be equal to the resonance frequency of the crystal

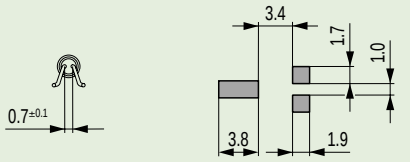
4. handling:
- handle the crystal carefully, it cannot stand heavy shock

5. testing:
- if you test the whole board automatically do not apply pulse to the crystal oscillator circuit, especially high pulse level can break the crystal blank

SM26F type A (1000 pcs per reel)

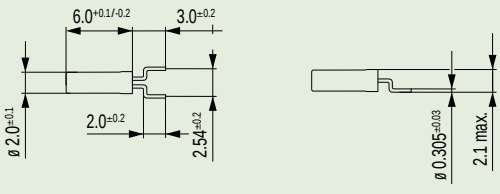


pad layout

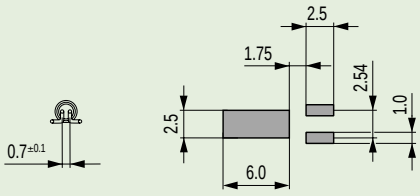


in mm

SM26F type B (1000 pcs per reel)



pad layout



in mm