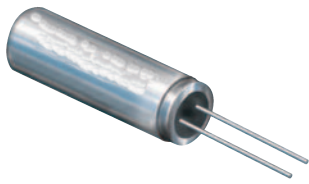


# Quartz Crystal - MTF38



actual size

Pin Type Crystal · 3.0 x 8.9 mm

- wave soldering temperature: 260 °C max.
- 3 x 8.9 mm cylinder type



## General Data

type	MTF38	
frequency range	3.50 ~ 40.0 MHz	(fund. AT-cut)
	30.0 ~ 48.0 MHz	(3rd OT. AT-cut; ask, if higher frequencies are available)
frequency tolerance at 25 °C	± 15 ppm ~ ± 50 ppm	
load capacitance $C_L$	12 pF ~ 32 pF or series	
shunt capacitance $C_0$	< 5 pF	
storage temperature	-40 °C ~ +90 °C	
drive level max.	100uw (others recommended)	
aging	± 5 ppm max first year	

## ESR (series resistance $R_s$ )

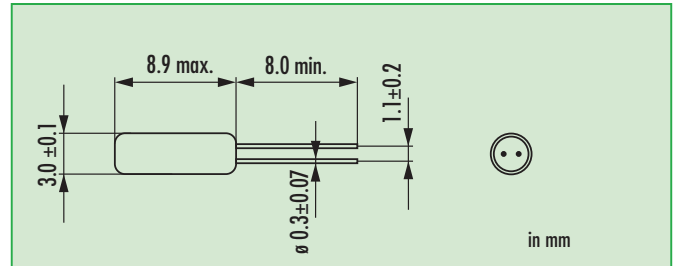
frequency in MHz	vibration mode	ESR max. in $\Omega$	ESR typ. in $\Omega$
3.50 ~ 3.6999	fund.- AT	180	80
3.70 ~ 4.0999	fund.- AT	150	60
4.10 ~ 5.9999	fund.- AT	120	40
6.00 ~ 9.9999	fund.- AT	70	30
10.0 ~ 13.999	fund.- AT	50	20
14.0 ~ 40.000	fund.- AT	40	15
30.0 ~ 48.000	3rd OT - AT	100	80

## Frequency Stability vs. Temperature

		± 20 ppm	± 30 ppm	± 50 ppm	± 100 ppm	± 150 ppm	+10/-100 ppm
-10 °C ~ +60 °C	T1	D	○	●			○ BT-cut
-20 °C ~ +70 °C	STD	D	○	●			
-40 °C ~ +85 °C	T2		○	○	●		
-40 °C ~ +105 °C	T3			○	○		
-40 °C ~ +125 °C	T4					○	

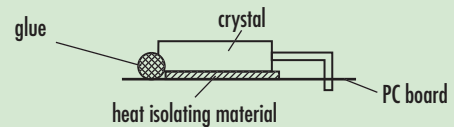
● standard ○ available D ask, if available

## Dimensions



## Mounting

**Mounting:** if the crystal should be mounted vertically to your board (see picture), do not directly solder the metal can. The crystal may be overheated by the direct heat flow. Please use glue (hot-melt adhesive) or mechanical clamping to fasten the metal can.



## Marking

frequency / date code

	Jan.	Febr.	Mar.	Apr.	May	June	July	Aug.	Sept.	Okt.	Nov.	Dec.
2011	2015	a	b	c	d	e	f	g	h	i	k	m
2012	2016	n	p	q	r	s	t	u	v	w	x	z
2013	2017	A	B	C	D	E	F	G	H	J	K	M
2014	2018	N	P	Q	R	S	T	U	V	W	X	Z

## Remarks

High Thermal Stability

