



actual size

# Quartz Crystal · MTF38

Pin Type Crystal · 3.0 x 8.9 mm

- wave soldering temperature: 260 °C max.
- 3 x 8 mm cylinder type



## General Data

type	MTF38
frequency range	3.579545 ~ 40.0 MHz (fund. AT-cut) 30.0 ~ 91.0 MHz (3rd OT. AT-cut)
frequency tolerance at 25 °C	± 15 ppm ~ ± 30 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.	500 µW (100 µW recommended)
aging	< ± 5 ppm first year

## ESR (series resistance Rs)

frequency in MHz	vibration mode	ESR max. in Ω	ESR typ. in Ω
3.57 ~ 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 ~ 91.000	3rd OT- AT	100	80

## Frequency Stability vs. Temperature

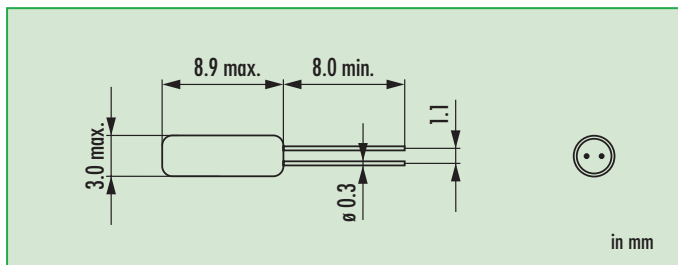
		± 20 ppm	± 30 ppm	± 50 ppm
-20 °C ~ +70 °C	STD.	○	●	
-40 °C ~ +85 °C	T1		○	●

● standard  
○ available

## Marking

frequency with load capacitance code company code / date code	Jan.	Febr.	Mar.	Apr.	May	June	July	Aug.	Sept.	Okt.	Nov.	Dec.
	2005	A	B	C	D	E	F	G	H	J	K	L
2006	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	a	b	c	d	e	f	g	h	j	k	l	m
2008	n	p	q	r	s	t	u	v	w	x	y	z

## Dimensions



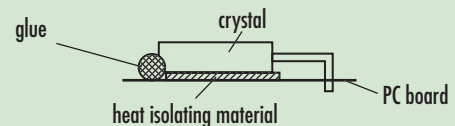
## Load Capacitance Codes

7 pF: m	13 pF: v	20 pF: c	32 pF: e
8 pF: k	14 pF: x	22 pF: g	series: s
9 pF: n	15 pF: j	24 pF: d	T: 3rd OT
10 pF: h	16 pF: b	25 pF: r	
11 pF: l	17 pF: t	27 pF: w	
12 pF: a	18 pF: f	30 pF: .	

example 4.0 MHz / 12 pF: 4a000

## 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.



## Order Information

Q	frequency	type	load capacitance in pF	stability at 25 °C	stability vs. temp. range	option
Quartz	3.579545 ~ 91.0 MHz	MTF38	30 pF standard 12 pF ~ 32 pF S for series	30 = ± 30 ppm std	see table	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C FU = for fundamental frequencies ≥ 20 MHz 30T = 3rd overtone

Example: Q 30.0-MTF38-30-30/30-FU

