



actual size

# SMD Quartz Crystal · MG3A

4 Pad Version · 13.1 x 5.0 mm

- automotive temperature range available
- reflow soldering temperature: 260 °C max.
- suitable for automotive applications



## General Data

type	MG3A
frequency range	3.57120 ~ 48.0 MHz (fund. AT-cut)
	30.0 ~ 91.1750 MHz (3rd OT. AT-cut)
frequency tolerance at 25 °C	± 20 ppm ~ ± 50 ppm
load capacitance $C_L$	12 pF ~ 32 pF or series
shunt capacitance $C_0$	< 5 pF
storage temperature	-40 °C ~ +125 °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	70-100
3.70 ~ 4.0999	fund.- AT	150	50-80
4.10 ~ 5.9999	fund.- AT	120	40-60
6.00 ~ 9.9999	fund.- AT	80	20-40
10.0 ~ 13.999	fund.- AT	50	15-35
14.0 ~ 19.999	fund.- AT	35	10-15
20.0 ~ 48.000	fund.- AT	20	10-15
30.0 ~ 91.175	3rd OT- AT	100	80

## Frequency Stability vs. Temperature

		± 30 ppm	± 50 ppm	± 100 ppm	± 150 ppm
-20 °C ~ +70 °C	STD.	○	●		
-40 °C ~ +85 °C	T1		○	●	
-40 °C ~ +105 °C	T2		○	○	
-40 °C ~ +125 °C	T3			○	○

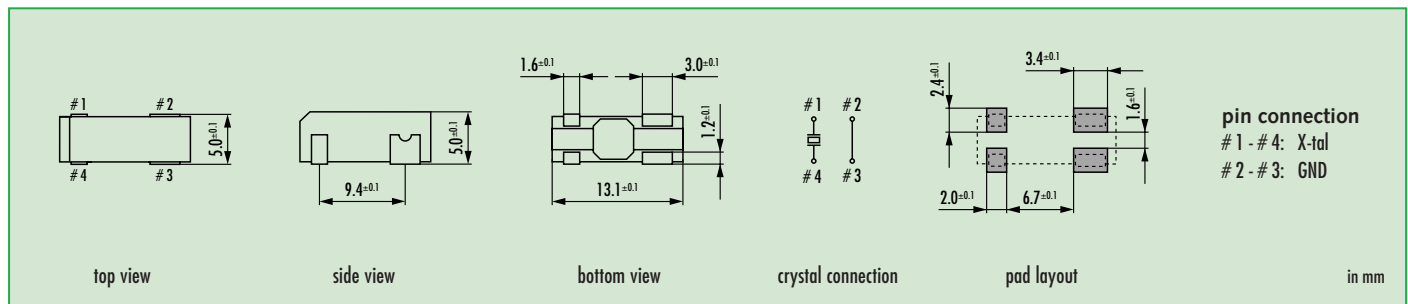
● standard  
○ available

## Marking

frequency with load capacitance code  
company code / date code / internal 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	M
2006	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	a	b	c	d	e	f	g	h	i	j	k	l
2008	n	p	q	r	s	t	u	v	w	x	y	z

## Dimensions



## Order Information

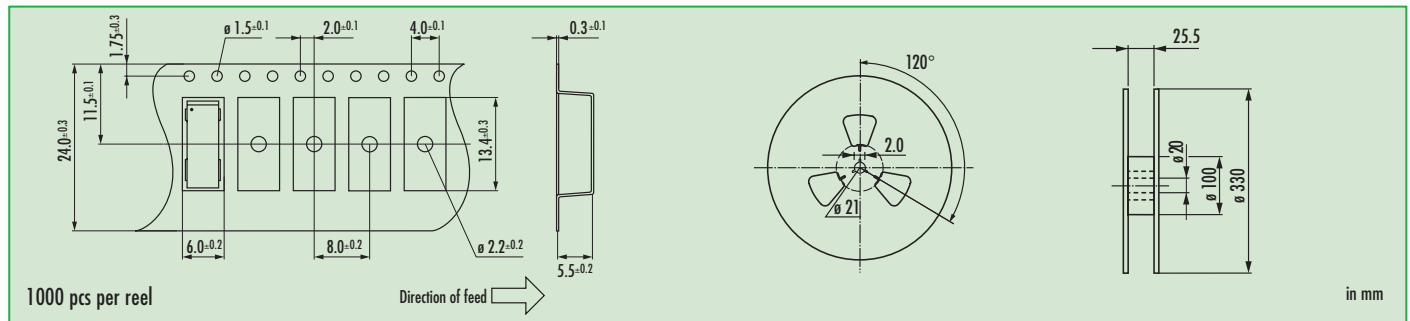
Q	frequency	type	load capacitance	stability at 25 °C	stability vs. temp. range	option
Quartz	3.57 ~ 91.1 MHz	MG3A	30 pF standard 12 pF ~ 32 pF S for series	50 ± 50 ppm std	see table	blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C FU = for fundamental frequencies ≥ 20 MHz 30T = 3rd overtone

Example: Q 30.0-MG3A-30-50/50-FU (Suffix LF = RoHS compliant / Pb free pins or pads)

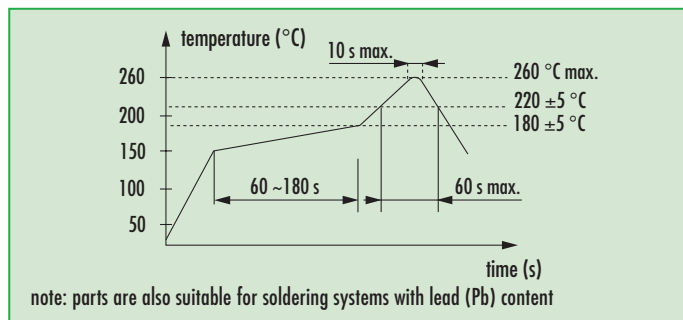


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## Taping Specification



## Reflow Soldering Profile



## 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