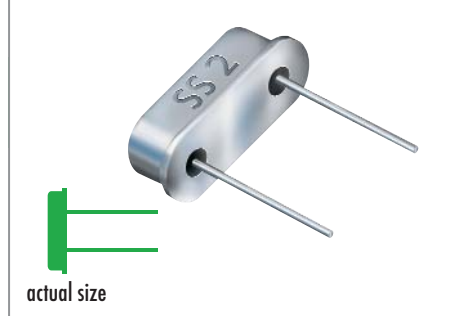




Quartz Crystal · SS2

Pin Type Crystal · 11.35 x 4.65 mm

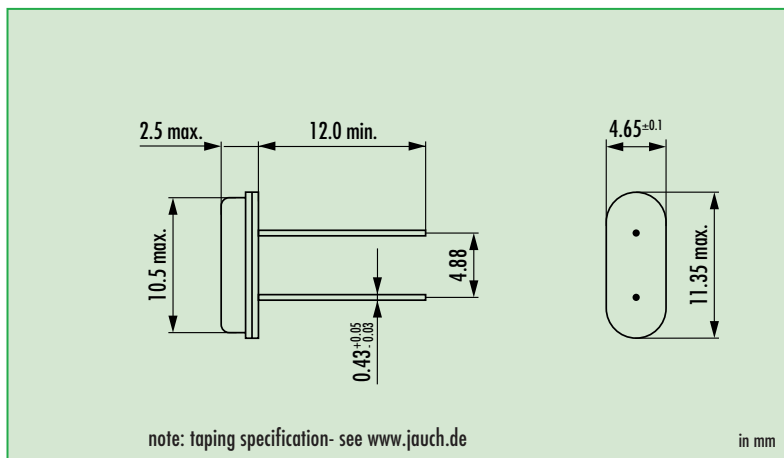
- recommended for automotive applications
- wave soldering temperature: 260 °C max.
- package height 2.5 mm max.



General Data

type	SS2
frequency range	8.0 ~ 30.0 MHz (fund. AT-cut)
	27.0 ~ 70.0 MHz (3rd OT. AT-cut)
frequency tolerance at 25 °C	± 20 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

Dimensions



Frequency Stability vs. Temperature

		± 20 ppm	± 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

ESR (series resistance R_s)

frequency in MHz	vibration mode	ESR max. in Ω	ESR typ. in Ω
8.0 ~ 9.9999	fund.- AT	50	25
10.0 ~ 13.999	fund.- AT	35	15
14.0 ~ 30.000	fund.- AT	30	10
27.0 ~ 70.000	3rd OT - AT	100	60

Automotive application note

- automotive quartz crystals have superior environmental performance in case of shock, vibration and temperature
- extended operating temperatures up to +125 °C
- production is certified according to: ISO 9001 / QS 9000 / QS 14000

Order Information

Q	frequency	type	load capacitance in pF	stability at 25 °C	stability vs. temp. range	option
Quartz	8.0 ~ 70.0 MHz	SS2	12 pF ~ 32 pF S for series	30 = ± 30 ppm std 20 = ± 20 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 3OT = 3rd overtone TR = taped TA = taped, ammo pack KIS = spacer IS = insulation spacer LL = lead length in mm PT = plastic tray

Example: Q 30.0-SS2-30-30/50-FU (Suffix LF = RoHS compliant / Pb free pins or pads)



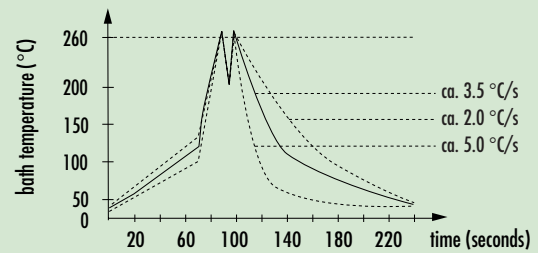
Quartz Crystal · SS2 · Automotive Applications

Load Capacitance Codes

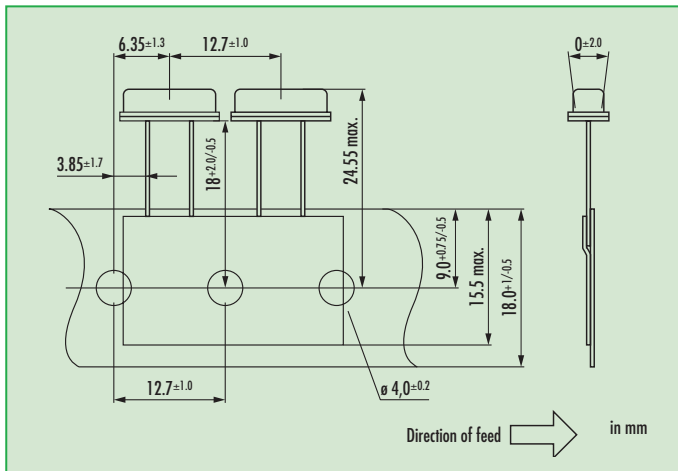
12 pF: a	18 pF: f	30 pF: .
13 pF: v	20 pF: c	32 pF: e
14 pF: x	22 pF: g	series: s
15 pF: j	24 pF: d	T: 3rd OT
16 pF: b	25 pF: r	
17 pF: t	27 pF: w	

example 4.0 MHz / 12 pF: 4a000

Wave Soldering Profile



Taping Specification



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	j	k	l	m
2008	n	p	q	r	s	t	u	v	w	x	y	z