

Quartz Crystal · SS4

Pin Type Crystal · 11.35 x 4.65 mm

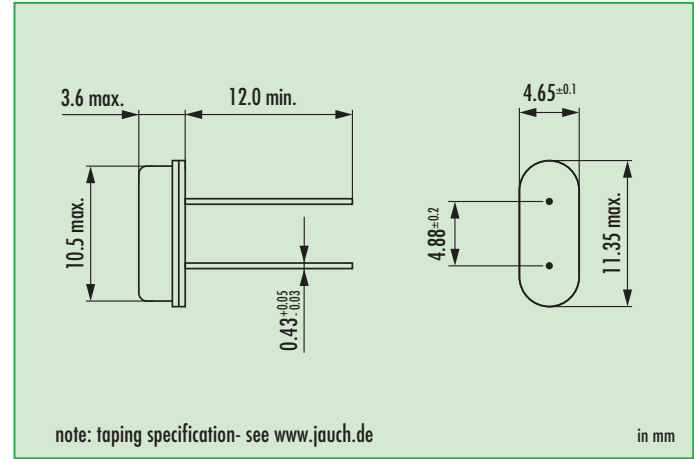
- taped version available
- wave soldering temperature: 260 °C max.
- package height 3.6 mm max.



General Data

| type | | SS4 |
|----------------------------------|---------------|---------------------------------------------------|
| frequency range | fund. AT-cut | 3.27680 ~ 33.0 MHz (> 33.0 MHz, ask if available) |
| | 3rd OT AT-cut | ask for availability |
| | fund. BT-cut | ask for availability |
| frequency tolerance at 25 °C | | ± 20 ppm ~ ± 50 ppm / ± 50 ppm if ≤ 3.57 MHz |
| load capacitance C _L | | 12 pF ~ 32 pF or series / 30 pF standard |
| 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 |

Dimensions



Frequency Stability vs. Temperature

| | | ± 20 ppm | ± 30 ppm | ± 50 ppm | ± 100 ppm | ± 150 ppm | +10/-100 ppm |
|-----------------|-----|----------|----------|----------|-----------|-----------|--------------|
| -20 °C ~ +70 °C | STD | D | ● | ● | | | ○ BT-cut |
| -40 °C ~ +85 °C | T1 | | ○ | ○(*) | ● | | |

● standard (*) if ≤ 3.57 MHz, not better than ± 100 ppm at temp. range T1
 ○ available
 D ask, if available

ESR (series resistance R_s)

| frequency in MHz | vibration mode | ESR max. in Ω | ESR typ. in Ω |
|-------------------|----------------|---------------|---------------|
| 3.276 ~ 3.499 | fund. AT | 200 | 100 |
| 3.500 ~ 3.999 | fund. AT | 120 | 80 |
| 4.000 ~ 5.999 | fund. AT | 80 | 60 |
| 6.000 ~ 6.999 | fund. AT | 70 | 35 |
| 7.000 ~ 8.999 | fund. AT | 50 | 25 |
| 9.000 ~ 13.999 | fund. AT | 35 | 15 |
| 14.000 ~ 33.000 | fund. AT | 30 | 10 |
| (33.000 ~ 40.000) | fund. AT | (30) | (10) |
| ask | 3rd OT AT | (100) | (60) |
| ask | fund. BT | (50) | (20) |

numbers in brackets () only for reference

Order Information

| | | | | | | |
|----------|--------------------|------|-------------------------------------------------|-----------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Q | frequency | type | load capacitance in pF | stability at 25 °C | stability vs. temp. range | option |
| Quartz | 3.27680 ~ 33.0 MHz | SS4 | 12 pF ~ 32 pF S for series 30 pF standard | 30 = ± 30 ppm std 20 = ± 20 ppm 50 = ± 50 ppm | see table | blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C FU = for fundamental frequencies ≥ 20 MHz 3OT = 3rd overtone (if available) BT = fundamental BT-cut (if available) MP = middle pin TR = taped TA = taped, ammo pack KIS = insulation spacer LL = lead length in mm PT = plastic tray |

Example: Q 30.0-SS4-30-30/50-T1-FU-LF (Suffix LF = RoHS compliant / Pb free pins or pads)



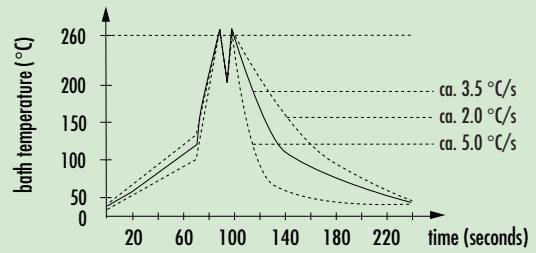
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Load Capacitance Codes

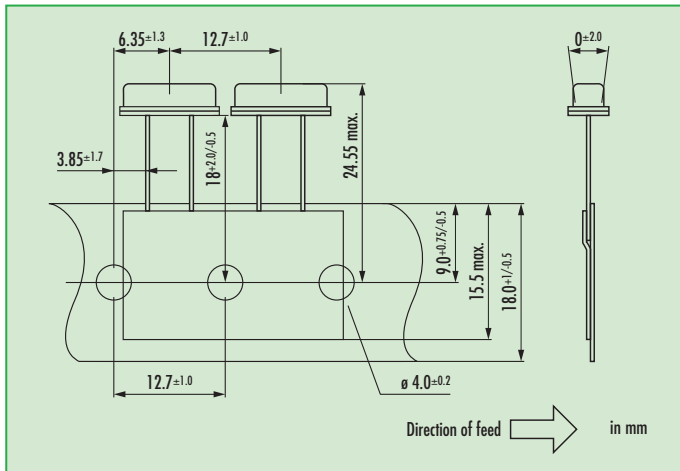
| | | |
|----------|----------|-----------|
| 12 pF: a | 18 pF: f | 30 pF: . |
| 13 pF: v | 20 pF: c | 32 pF: e |
| 14 pF: x | 22 pF: g | series: s |
| 15 pF: j | 24 pF: d | T: 3rd OT |
| 16 pF: b | 25 pF: r | |
| 17 pF: t | 27 pF: w | |

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