

Quartz Crystal · HC49/U-SMC

SMD Crystal Version · 17.5 x 10.8 mm

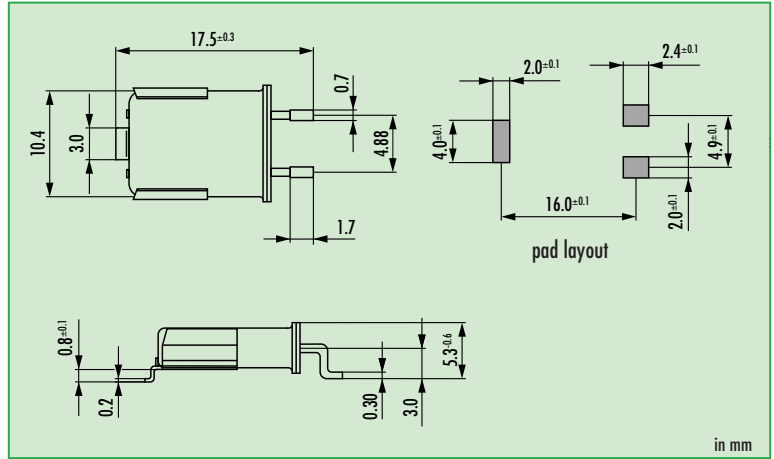
- high frequency stability
- wave soldering temperature: 260 °C max.
- customized versions available, please ask



General Data

| type | S (HC49/U-SMC) |
|------------------------------|----------------------------------|
| frequency range | 1.8432 ~ 40.0 MHz (fund. AT-cut) |
| | 20.0 ~ 105.0 MHz (3rd OT AT-cut) |
| | 50.0 ~ 175.0 MHz (5th OT AT-cut) |
| | 70.0 ~ 250.0 MHz (7th OT AT-cut) |
| frequency tolerance at 25 °C | ± 3 ppm ~ ± 50 ppm |
| load capacitance C_L | 8 pF ~ 32 pF or series |
| shunt capacitance C_0 | < 7 pF |
| storage temperature | -55 °C ~ +125 °C |
| drive level max. | 1.0 mW (100 µW recommended) |
| aging | < ± 5 ppm first year |

Dimensions



Frequency Stability vs. Temperature

| | | ± 3 ppm | ± 5 ppm | ± 10 ppm | ± 30 ppm | ± 50 ppm | ± 100 ppm |
|------------------|------|---------|---------|----------|----------|----------|-----------|
| 0 °C ~ +60 °C | | ○ | ○ | ○ | | | |
| -20 °C ~ +70 °C | STD. | | ○ | ○ | ● | | |
| -40 °C ~ +85 °C | T1 | | | ○ | ○ | ● | |
| -40 °C ~ +90 °C | T4 | | | | ○ | ○ | ○ |
| -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 |
|------------------|----------------|----------------------|----------------------|
| 1.8432 | fund.- AT | 800 | 400 |
| 2.00 ~ 2.999 | fund.- AT | 400 | 200 |
| 3.00 ~ 3.4999 | fund.- AT | 150 | 50 |
| 3.57 ~ 6.9999 | fund.- AT | 60 | 20 |
| 7.00 ~ 12.999 | fund.- AT | 30 | 15 |
| 13.0 ~ 40.000 | fund.- AT | 20 | 10 |
| 20.0 ~ 105.00 | 3rd OT - AT | 80 | 35 |
| 50.0 ~ 175.00 | 5th OT - AT | 150 | 70 |

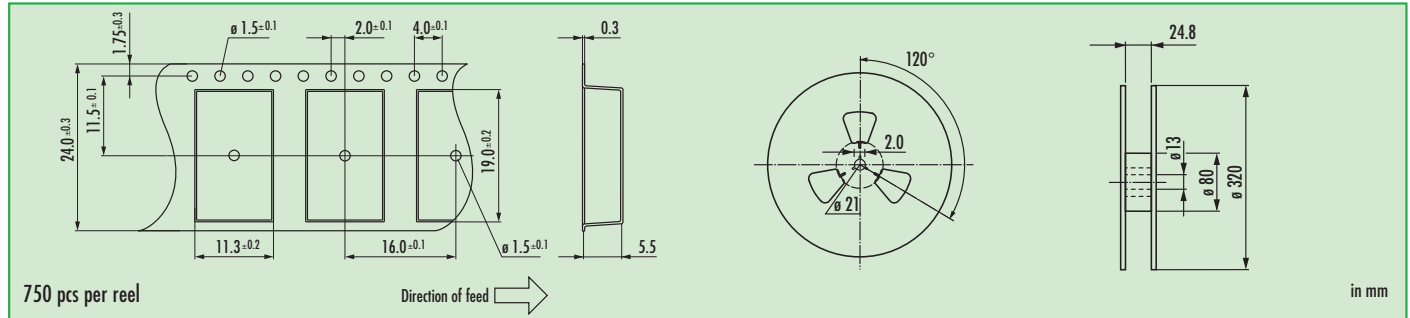
Order Information

| Q | frequency | type | load capacitance in pF | stability at 25 °C | stability vs. temp. range | option | SMD version |
|--------|--------------------|------|---|---------------------------------|---------------------------|--|-------------|
| Quartz | 0.9216 ~ 250.0 MHz | S | 30 pF standard 12 pF ~ 32 pF S for series | ± 3 ppm ~ ± 50 ppm see table | | blank = -20 °C ~ +70 °C T1 = -40 °C ~ +85 °C T2 = -40 °C ~ +105 °C T3 = -40 °C ~ +125 °C T4 = -40 °C ~ +90 °C FU = for fundamental frequencies ≥ 20 MHz 30T = 3rd overtone 50T = 5th overtone 70T = 7th overtone | SMC |

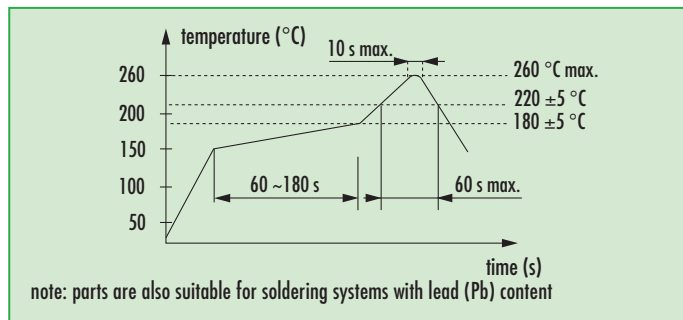
Example: Q 28.0-S-30-30/30-T1-FU-SMC-LF (Suffix LF = RoHS compliant / Pb free pins)

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Taping Specification SMD Version



Reflow Soldering Profile



Marking

frequency
company code / load capacitance
data code / internal code