

- Model **M49L** is the surface mount version of the HC-49/US low profile crystal.
- Lowest cost. The most economic solution for automatic assembly.



SPECIFICATIONS

| | | | | | | |
|--|---|-----------|----------|-------------|------------------------|----------|
| Crystal Holder Prefix: | M49L : 3.2 mm seated height. | | | | | |
| Mode of Oscillation: | 3.2~30.0 MHz AT-cut Fundamental mode 27.0~70.0 MHz AT-cut 3 rd Overtone mode 24.0~48.0 MHz BT-cut Fundamental mode | | | | | |
| Calibration Tolerance: | ±30 ppm (±0.003 %) at 25°C | | | | | |
| Frequency Stability: | AT-cut: ±30 ppm (±0.003 %) over -10 to +60°C BT-cut: ±100 ppm (±0.01 %) over -10 to +60°C | | | | | |
| Shunt Capacitance (Co): | 7pF maximum | | | | | |
| Equivalent Series Resistance (E.S.R.) | Frequency | Osc. Mode | ESR max. | Frequency | Osc. mode | ESR max. |
| | 3.2 ~ 3.4 | AT funda. | 300 Ω | 13.0 ~ 24.0 | AT funda. | 45 Ω |
| | 3.5 ~ 4.0 | AT funda. | 150 Ω | 24.1 ~ 30.0 | AT funda. | 40 Ω |
| | 4.1 ~ 4.9 | AT funda. | 120 Ω | 24.0 ~ 48.0 | BT funda. | 40 Ω |
| | 5.0 ~ 5.9 | AT funda. | 100 Ω | 27.0 ~ 30.0 | AT 3 rd O/T | 150 Ω |
| | 6.0 ~ 8.9 | AT funda. | 80 Ω | 30.0 ~ 50.0 | AT 3 rd O/T | 100 Ω |
| | 9.0 ~ 9.9 | AT funda. | 60 Ω | 50.1 ~ 70.0 | AT 3 rd O/T | 80 Ω |
| | 10.0 ~ 12.9 | AT funda. | 50 Ω | | | |
| Load Capacitance (CL): | Series (spec. code is “S”) or Parallel (If parallel, please specify CL value, typical CL ranges from 8 to 32 pF) | | | | | |
| Drive Level: | 500 μW maximum | | | | | |
| Aging: | Less than ±3 ppm per year. At +25°C | | | | | |
| Reflow Soldering: | 10 seconds maximum at +260°C | | | | | |
| Storage Temperature: | -40 to +85°C | | | | | |

Note: Tighter tolerance, tighter stability and lower ESR are available.

MERCURY www.mercury-crystal.com

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STANDARD FREQUENCIES AND PART NUMBERS (partial frequency list only. Frequency tolerance, frequency stability and ESR can be specified per your requirements).

| <u>MEC Part Number</u> | <u>MEC Specification Code</u> | <u>MEC Part Number</u> | <u>MEC Specification Code</u> |
|------------------------|-------------------------------|------------------------|----------------------------------|
| M49L-3.579545-18P | 30/30/-10+60/150R | M49L-14.7456-S | 30/30/-10+60/45R |
| M49L-3.6864-20P | 30/30/-10+60/150R | M49L-16.000312-32P | 30/30/-10+60/45R |
| M49L-4.000-20P | 30/30/-10+60/150R | M49L-16.384-S | 30/30/-10+60/45R |
| M49L-4.433619-18P | 30/30/-10+60/120R | M49L-18.432-S | 30/30/-10+60/45R |
| M49L-4.9152-18P | 30/30/-10+60/120R | M49L-19.6608-S | 30/30/-10+60/45R |
| M49L-5.120-18P | 30/30/-10+60/100R | M49L-20.000-20P | 30/30/-10+60/45R |
| M49L-6.000-18P | 30/30/-10+60/80R | M49L-24.000-S | 30/30/-10+60/45R |
| M49L-6.144-18P | 30/30/-10+60/80R | M49L-24.576-S | 30/30/-10+60/40R |
| M49L-7.3728-18P | 30/30/-10+60/80R | M49L-29.4912BF-S | 30/100/-10+60/40R (BT-cut Fund.) |
| M49L-8.000-18P | 30/30/-10+60/80R | M49L-30.000BF-S | 30/100/-10+60/40R (BT-cut Fund.) |
| M49L-9.8304-20P | 30/30/-10+60/60R | M49L-32.000BF-S | 30/100/-10+60/40R (BT-cut Fund.) |
| M49L-10.000-18P | 30/30/-10+60/50R | M49L-36.000BF-S | 30/100/-10+60/40R (BT-cut Fund.) |
| M49L-11.0592-20P | 30/30/-10+60/50R | M49L-40.000BF-S | 30/100/-10+60/40R (BT-cut Fund.) |
| M49L-12.000-18P | 30/30/-10+60/50R | M49L-32.000A3-20P | 30/30/-10+60/100R (AT-cut 3 rd) |
| M49L-14.31818-18P | 30/30/-10+60/45R | M49L-64.000A3-S | 30/30/-10+60/80R (AT-cut 3 rd) |

PACKAGE DIMENSIONS AND SUGGESTED PAD LAYOUT

Unit: mm [inches]

