



**MEC**

QUARTZ CRYSTAL UNIT

Product Brief Introduction

SMD SERIES:

SMD49S & SMD49SS

Application:

Radio communication, Audio-visual equipment, Office automation equipment, Consumer product

**Specification**

|   |                                 |
|---|---------------------------------|
| Frequency range                                     | See table 1                     |
| Vibration mode                                      | AT cut: fundamental. Third      |
| Frequency tolerance at 25 °C                        | ±10, ±15, ±20, ±30, ±50 ppm     |
| Operating temperature range and frequency stability | See Table 2                     |
| Equivalent series resistance                        | See Table 1                     |
| Shunt capacitance                                   | 5.0pF max or special            |
| Measure instrument                                  | S&A 250B PI system              |
| Load capacitance                                    | Series, 16, 20, 30pF or special |
| Drive level   | 10,100, 300, 500uW or special   |
| Insulation resistance                               | 500 M Ω min/DC 100V             |
| Aging   | ±1, 3, 5ppm/ year               |
| Storage temperature range                           | -40 ~ +85°C                     |

**Table 1/ Frequency range & Equivalent Series resistance**

| Frequency (MHz) | Vibration mode | HC-49S(Ω) |
|-----------------|----------------|-----------|
| 3.2~3.79        | Fundamental /F | 180       |
| 3.8~4.49        | Fundamental /F | 150       |
| 4.5~5.99        | Fundamental /F | 120       |
| 6.0~7.99        | Fundamental /F | 100       |
| 8.0~9.99        | Fundamental /F | 80        |
| 10.0~11.9       | Fundamental /F | 70        |
| 12.0~15.9       | Fundamental /F | 60        |
| 16.0~19.9       | Fundamental /F | 50        |
| 20.0~26.0       | Fundamental /F | 40        |
| 26.0~39.9       | Third/ O3      | 100       |
| 40.0~60.0       | Third/ O3      | 80        |
| 60.0~80.0       | Third/ O3      | 60        |
| 80.0~100.0      | Third/ O3      | 60        |

**Table 2/Operating temperature range and frequency stability**

| TEMP \ PPM | ±10 | ±15 | ±20 | ±30 | ±50 |
|------------|-----|-----|-----|-----|-----|
| 0~+50°C    | ☆   | ☆   | ☆   | ☆   | ☆   |
| -10~+60°C  | ☆   | ☆   | ☆   | ☆   | ☆   |
| -20~+70°C  | ☆   | ☆   | ☆   | ☆   | ☆   |
| -30~+80°C  |     |     | ☆   | ☆   | ☆   |
| -40~+90°C  |     |     |     | ☆   |     |

The mark " ☆ " denotes our achieved level

1. Crystal enclosure seal : resistance weld
2. Crystal enclosure medium : Nitrogen

