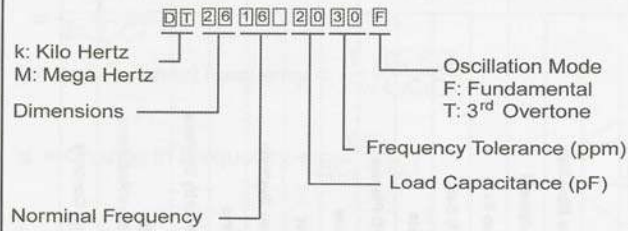


## CRYSTAL UNITS

AT/ DT Series

### PART NUMBERING SYSTEM



CYLINDRICAL METAL CAN



### Electrical Characteristics

|                       | DT-26                | DT-38                    | AT38                                 | AT-39                                | AT-310                               |
|-----------------------|----------------------|--------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Frequency Range       | 32.768kHz~153.6kHz   | 32.768kHz, 60 kHz ~90kHz | 11.06MHz~27.13MHz                    | 4.0MHz~13.5MHz                       | 3.58MHz~49.86MHz                     |
| Frequency Tolerance   | ±20, 30ppm           | ±20, 30, 50ppm           | ±20, 30, 50ppm                       | ±30ppm                               | ±20, 30ppm                           |
| ESR                   | 22~40kΩ              | 20~180Ω                  | 20~180Ω                              | 40~50kΩ                              | 60,70,80~180Ω                        |
| Insulation Resistance | 100, 500MΩ at 100VDC | 100, 500MΩ at 100VDC     | 100, 500MΩ at 100VDC                 | 500MΩ at 100VDC                      | 500MΩ at 100VDC                      |
| Shunt Capacitance     | 1~1.5pF ± 0.3pF      | 1.3,7pF ± 0.3pF          | 1.3,7pF ± 0.3pF                      | 1.5,7,20pF ± 0.3pF                   | 5.7pF ± 0.3pF                        |
| Loading Capacitance   | 12.5pF               | 16.20pF                  | 16.20pF                              | 16,20,32pF                           | 16, 20pF                             |
| Drive Level           | 0.36~0.1μW           | 10, 50,100, 500μW        | 10, 50,100, 500μW                    | 50,100μW                             | 0.36~1.0, 50, 100μW                  |
| Operation Temperature | -10~60°C             | -10~60°C                 | -10~60°C                             | -10~60°C                             | -10~60°C                             |
| Storage Temperature   | -20~70°C             | -20~70°C                 | -20~70°C                             | -20~70°C                             | -20~70°C                             |
| Aging                 | ±5ppm/ year          | ±3.5ppm/ year            | ±3.5ppm/ year                        | ±3.5ppm/ year                        | ±3.5ppm/ year                        |
| Oscillation Mode      | Fundamental          | Fundamental              | Fundamental/3 <sup>rd</sup> Overtone | Fundamental/3 <sup>rd</sup> Overtone | Fundamental/3 <sup>rd</sup> Overtone |

### Mechanical Characteristics

| Dimension (mm) | H <sub>L</sub>      | H           | ∅D (max)   | ∅d                        | P                        |
|----------------|---------------------|-------------|------------|---------------------------|--------------------------|
| DT-26          | 5.0 min<br>14.0 max | 6,8,9,10    | 2.0<br>2.1 | 0.25 ± 0.05               | 0.7 ± 0.2<br>1.1 ± 0.25  |
| AT-310         | 7.5 min<br>11.0 max | 8,9,10,10.8 | 3.0        | 0.25 ± 0.05<br>0.3 ± 0.07 | 0.8 ± 0.15<br>1.1 ± 0.2  |
| AT/DT-38       | 7.5 min<br>11.0 max | 8,9,10,10.8 | 3.0<br>3.1 | 0.25 ± 0.05<br>0.3 ± 0.07 | 0.8 ± 0.15<br>1.1 ± 0.25 |
| AT-39          | 7.5 min<br>12.0 max | 8,9,10,10.8 | 3.0<br>3.1 | 0.25 ± 0.05<br>0.3 ± 0.7  | 0.8 ± 0.15<br>1.1 ± 0.25 |

