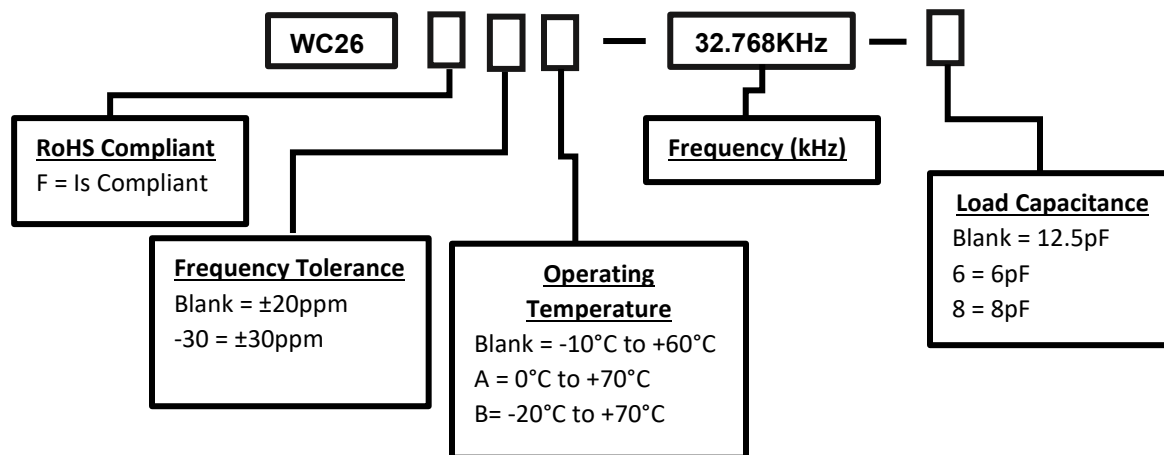


- 32.768 kHz
- Standard Cylindrical Holders
- RoHS and REACH Compliant

### Electrical Specifications

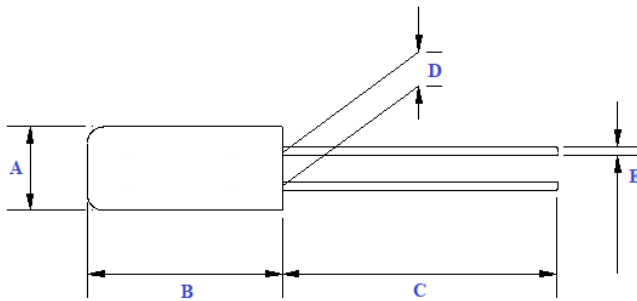
|                                    |  |
|------------------------------------|--|
| Frequency                          | 32.768kHz  |
| Frequency Range                    | 30 to 200 kHz  |
| Frequency Tolerance (at 25°C)      | ±20ppm (32.768Hz)  |
| Frequency Tolerance (at 25°C)      | ±30ppm (For other frequencies not including 32.768Hz)                  |
| Load Capacitance                   | 12.5pF (See Options)   |
| Operating Temperature Range        | -20°C to +70°C (See Options)   |
| Storage Temperature Range          | -40°C to +85°C   |
| Turnover Temperature               | 25°C ±5°C  |
| Frequency Stability                | -0.035 ppm ±0.01ppm / (Change in °C) <sup>2</sup> Max, Parabolic Curve |
| Equivalent Series Resistance (ESR) | 35k Ohms Max (32.768Hz)  |
| Equivalent Series Resistance (ESR) | 50k Ohms Max (For other frequencies not including 32.768Hz)            |
| Drive Level                        | 1 μWatt Max  |
| Aging (at 25°C± 3°C)               | ±3ppm/Year Max (32.768Hz)  |
| Aging (at 25°C± 3°C)               | ±5ppm/Year Max (For other frequencies not including 32.768Hz)          |
| Quality Factor                     | 70,000 Typ   |
| Shunt Capacitance (Co)             | 0.8 ~ 1.7pF Typ  |
| Insulation Resistance              | 500 Mohms Min (at 100Vdc ±15Vdc)                                       |

### Part Number Guide



Please consult with MMD sales department for any other parameters or options.

### Mechanical Details



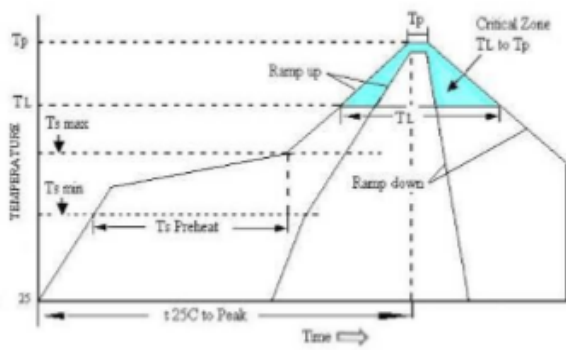
| Dimension Table |              |
|-----------------|--------------|
| A               | Ø 2.1 MAX    |
| B               | 6.2 MAX      |
| C               | 5.7 MIN      |
| D               | 0.7 ± 0.2    |
| E               | Ø 0.25 ± 0.1 |

Sealing Method = Pressure Sealing

### Tape & Reel Dimensions

1,000 pcs/bag

### Pb Free Solder Reflow Profile



|   |                          |
|---|--------------------------|
| Ts max to T <sub>l</sub> (Ramp-up Rate)             | 3°C / second max         |
| Preheat   |                          |
| Temperature min (Ts min)                            | 150°C                    |
| Temperature typ (Ts typ)                            | 175°C                    |
| Temperature max (Ts max)                            | 200°C                    |
| Time (Ts)   | 60 to 180 seconds        |
| Ramp-up Rate (T <sub>l</sub> to Tp)                 | 3°C / second max         |
| Time Maintained Above Temperature (T <sub>l</sub> ) | 217°C                    |
| Time (T <sub>l</sub> )                              | 60 to 150 seconds        |
| Peak Temperature (Tp)                               | 260°C max for 10 seconds |
| Time within 5°C to Peak Temperature (Tp)            | 20 to 40 seconds         |
| Ramp-down Rate                                      | 6°C / second max         |
| Time 25°C to Peak Temperature                       | 8 minutes max            |