Frequency Technology

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## 32.768 kHz SURFACE-MOUNT CRYSTAL

**FEATURES** 

4.1 x 1.5 x 0.9 mm

- Miniature SMD package
- Extended temperature -40 °C to +85 °C for industrial applications
- Applications: Wireless Communications, Commercial and Industrial applications



| Item                         | Symbol | Specification                      |
|------------------------------|--------|------------------------------------|
| Nominal Frequency            | Fo     | 32.768 kHz                         |
| Cut                          |        | XY-cut                             |
| Operating temperature Range  | То     | -40° to +85°C                      |
| Frequency Tolerance at 25°C  | Δf/F   | ± 20ppm standard (see options)     |
| Temperature coefficient      | ß      | -0.040 ppm/°C² max                 |
| Load Capacitance (CL)        | CL     | 12.5 pF standard (see options)     |
| Equivalent Series Resistance | ESR    | 70 kΩ max.                         |
| Quality Factor               | Q      | 53000 typ.                         |
| Shunt Capacitance (Co)       | Co     | 1.1 pF typ.                        |
| Insulation Resistance        | Ri     | 500 MΩ min. (at 100Vdc)            |
| Drive Level                  | DL     | 1.0 μW max.                        |
| Aging                        | Δf/F   | ±3ppm max (at 25°C, first year)    |
| Packing Unit                 |        | 3000pcs / reel                     |
| Soldering Condition          |        | 260 °C, 10 sec x2 max              |
|                              |        | Customer specifications on request |

## **OPTIONS & ORDERING INFORMATION**

| X41- |                     |                       | 32.768 kHz |
|------|---------------------|-----------------------|------------|
|      | Freq. Tolerance     | Load Capacitance      |            |
|      | <b>20</b> = ±20 ppm | <b>12.5</b> = 12.5 pF |            |
|      | <b>30</b> = ±30 ppm | 9 = 9.0 pF            |            |
|      | <b>50</b> = ±50 ppm | <b>7</b> = 7.0 pF     |            |

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## **OUTLINE DIMENSIONS**

