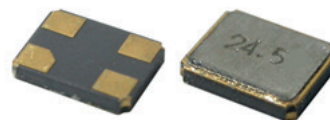


# X16 CERAMIC SURFACE-MOUNT CRYSTAL

## FEATURES

- Ultra miniature SMD package
- Very Low Ageing
- Excellent heat resistance and shock resistance
- Applications: Bluetooth, Wireless applications, IoT, ...

1.6 x 1.2 x 0.35 mm



| Item                         | Symbol | Specification                             |
|------------------------------|--------|---|
| Frequency Range              | Fo     | 24 MHz ~ 60 MHz                           |
| Operation Mode               |        | Fundamental                               |
| Operating temperature Range  | To     | -20° to +70°C (see options)               |
| Frequency Tolerance at 25°C  | Δf/F   | ± 50ppm max. (see options)                |
| Temperature Stability        | Δf/F   | ± 50ppm max. (see options)                |
| Load Capacitance (CL)        | CL     | series or 6 pF to 32 pF (see options)     |
| Equivalent Series Resistance | ESR    | See Table 1                               |
| Shunt Capacitance (Co)       | Co     | 3pF Max                                   |
| Insulation Resistance        | Ri     | 500 MΩ min. (at 100Vdc)                   |
| Drive Level                  | DL     | 10μW typical, 100μW max.                  |
| Aging                        | Δf/F   | ±2ppm max (at 25°C, first year)           |
| Packing Unit                 |        | 3000pcs / reel                            |
| Soldering Condition          |        | 260°C, 10 sec x2 max                      |
|                              |        | <b>Customer specifications on request</b> |

## TABLE 1: Standard ESR

| Frequency (MHz) | ESR (Ω) max. |
|-----------------|--------------|
| 24.0 - 29.9     | 120          |
| 30.0 - 36.9     | 80           |
| 37.0 - 60.0     | 60           |

## OPTIONS & ORDERING INFORMATION

| X16- | .....           | .....           | .....            | .....                                   | .....           | ..... MHz                           | - .....               |
|------|-----------------|-----------------|------------------|---|-----------------|-------------------------------------|-----------------------|
|      | Freq. Tolerance | Freq. Stability | Operating Temp.  | Load Capacitance                        | Mode            | Frequency in MHz                    | ESR if other than STD |
|      | 10 = ±10 ppm    | 05 = ±5 ppm     | D = -10° / +60°C | Please specify CL in pF or S for Series | F = Fundamental | Please specify the frequency in MHz | Specify a value in Ω  |
|      | 15 = ±15 ppm    | 10 = ±10 ppm    | E = 0° / +70°C   |   |                 |                                     |                       |
|      | 20 = ±20 ppm    | 15 = ±15 ppm    | F = -20° / +70°C |   |                 |                                     |                       |
|      | 25 = ±25 ppm    | 20 = ±20 ppm    | G = -30° / +75°C |   |                 |                                     |                       |
|      | 30 = ±30 ppm    | 25 = ±25 ppm    | H = -30° / +85°C |   |                 |                                     |                       |
|      | 50 = ±50 ppm    | 30 = ±30 ppm    | K = -40° / +85°C |   |                 |                                     |                       |
|      |                 | 50 = ±50 ppm    |                  |   |                 |                                     |                       |

\* Note : Not all combinations are possible, please consult us.

## OUTLINE DIMENSIONS

