## AT-CUT CRYSTAL UNIT (sMd • Ceramic Package)



## DIMENSION [mm]



## FEATURES

- High-density SMD type.
- Reliab ceramic package and excellent e viry mental characteristics.
- s .it le for various applications such as communication devices, $A V$ devices and other equipment.


## ISOLDER PAD LAYOUT [mm]



ISTANDARD SPECIFICATIONS

| Item | Model | CS10 | Conditions |
| :---: | :---: | :---: | :---: |
| Nominal Frequency | fo | $12.0 \mathrm{MHz} \sim 50.0 \mathrm{MHz}$ (Fundamental) | Need to contact us for the available frequency |
| Frequency Tolerance | $\Delta \mathrm{f} / \mathrm{f}_{0}$ | $\pm 30 \mathrm{ppm}$ | at $25^{\circ} \mathrm{C}$ |
| Frequency Tolerance over Operating Temperature Range | $\triangle \mathrm{f} / \mathrm{fo}_{0}$ | $\pm 50 \mathrm{ppm}$ | $-10^{\circ} \mathrm{C} \sim+60^{\circ} \mathrm{C}$ |
| Operating Temperature Range | TOPR | $-40^{\circ} \mathrm{C} \sim+85^{\circ} \mathrm{C}$ |  |
| Storage Temperature Range | Tstr | $-55^{\circ} \mathrm{C} \sim+125^{\circ} \mathrm{C}$ |  |
| Motional (series) resistance | R1 | Refer to the following table | at $25^{\circ} \mathrm{C}$ |
| Load capacitance | CL | 18.0pF | Need to specify your requirement |
| Shunt capacitance | Co | 7.0pF Max. |  |
| Level of drive | DL | $50 \mu \mathrm{~W}$ |  |
| Insulation Resistance | IR | $500 \mathrm{M} \Omega$ Min. | DC100V $\pm 15 \mathrm{~V}$ |
| Aging (first year) | $\triangle f / f_{0}$ | $\pm 5 \mathrm{ppm}$ Max. | $25^{\circ} \mathrm{C} \pm 3^{\circ} \mathrm{C}$ |

MOTIONAL (SERIES) RESISTANCE ( $\mathbf{R}_{1}$ )

| Frequency Range | $12.0 \mathrm{MHz} \leqq \mathrm{fo} 0<14.0 \mathrm{MHz}$ | $14.0 \mathrm{MHz} \leqq \mathrm{fo} \leqq 50.0 \mathrm{MHz}$ |
| :--- | :---: | :---: |
| $\mathbf{R}_{1}$ | $70 \Omega \mathrm{Max}$. | $50 \Omega \mathrm{Max}$. |

