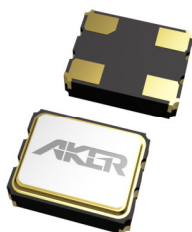


# CRYSTAL OSCILLATORS



## SMAN-020000-3BL4T02

### CERAMIC PACKAGE

#### Applications

- DVR
- Camera
- Medical
- Industry Control

- Wireless
- Communication
- Telecom
- IoT

#### Features

- Seam Seal
- Excellent Solderability
- Tri-State
- Low Power Consumption
- RoHS Compliant

■ Actual Size: ☐

### Specification

#### MODEL

MODEL

|                       |              |                                                     |               |               |               |              |
|-----------------------|--------------|-----------------------------------------------------|---------------|---------------|---------------|--------------|
| FREQUENCY RANGE       | MHz          | 1.000~110.000                                       | 1.000~160.000 | 1.000~160.000 | 1.000~110.000 | 1.000~60.000 |
| FREQUENCY STABILITY*  | ppm          | ± 20 ~ ± 100                                        |               |               |               |              |
| OPERATING TEMPERATURE | °C           | - 20 ~ + 70 Or Specify ( - 40 ~ + 125 is available) |               |               |               |              |
| STORAGE TEMPERATURE   | °C           | - 55 ~ + 125                                        |               |               |               |              |
| POWER SUPPLY VOLTAGE  | VDC          | +1.8 ± 10%                                          | +2.5 ± 10%    | +3.3 ± 10%    | +1.62~+3.63   | +5.0 ± 10%   |
| OUTPUT LEVEL          |              | CMOS                                                |               |               |               |              |
| OUTPUT SYMMETRY       | %            | 45 ~ 55 (at 50% VDC)                                |               |               |               |              |
| INPUT CURRENT         |              |                                                     |               |               |               |              |
| 1.0 ~ 9.9MHz          | mA<br>(Max.) | 3                                                   | 5             | 5             | 5             | 10           |
| 10.0 ~ 19.9MHz        |              | 5                                                   | 5             | 5             | 5             | 12           |
| 20.0 ~ 31.9MHz        |              | 5                                                   | 6             | 7             | 7             | 15           |
| 32.0 ~ 60.0MHz        |              | 10                                                  | 12            | 12            | 12            | 22           |
| 60.1 ~ 110.0MHz       |              | 10                                                  | 20            | 25            | 25            | -            |
| 110.1 ~ 160.0MHz      |              | -                                                   | 20            | 30            | -             | -            |
| RISE/FALL TIME        |              |                                                     |               |               |               |              |
| 1.0 ~ 9.9MHz          | ns<br>(Max.) | 7                                                   | 7             | 6             | 7             | 6            |
| 10.0 ~ 19.9MHz        |              | 7                                                   | 7             | 6             | 7             | 6            |
| 20.0 ~ 31.9MHz        |              | 6                                                   | 6             | 5             | 6             | 5            |
| 32.0 ~ 60.0MHz        |              | 6                                                   | 6             | 5             | 6             | 5            |
| 60.1 ~ 110.0MHz       |              | 6                                                   | 6             | 5             | 6             | -            |
| 110.1 ~ 160.0MHz      |              | -                                                   | 6             | 6             | -             | -            |
| OUTPUT LOAD           |              | 15 pF Max.                                          |               |               |               |              |
| AGING                 | ppm/Year     | ± 3                                                 |               |               |               |              |

\*Inclusive of 25°C $\pm$ 3°C & Operating Temperature Range.

\*\*Specification subject to change without notice.

### Pin Connection

| PIN No. | Connection     |
|---------|----------------|
| #1      | Enable/Disable |
| #2      | GND            |
| #3      | Output         |
| #4      | VDC            |

### Enable/Disable Function

| Pin #1     | Pin #3         |
|------------|----------------|
| HIGH(OPEN) | Output         |
| LOW        | High Impedance |

### Dimension(mm)

#### SMAN-020000-3BL4T02

