

# TIGHT STABILITY INDUSTRIAL GRADE CRYSTAL OSCILLATOR

## ASET SERIES



**ESD Sensitive**



**RoHS/RoHS II compliant**



3.2 x 2.5 x 1.2mm

**Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable**

### FEATURES:

- Highly reliable seam-sealed package
- Low current consumption 7mA
- Low phase noise and jitter
- Industrial grade tight temperature stability available ( $\pm 10\text{ppm}$  /  $-40$  to  $+85^\circ\text{C}$ )
- Fast start-up time 0.2ms typical
- CMOS output with Tri-state function

### APPLICATIONS:

- Home networking by AC socket
- Wireless LAN
- Mobile communications
- PLC modem
- WiMax

### STANDARD SPECIFICATIONS:

| Parameters                   | Minimum                                                                                                   | Typical | Maximum  | Units            | Notes         |
|------------------------------|-----------------------------------------------------------------------------------------------------------|---------|----------|------------------|---------------|
| Frequency Range              | 4                                                                                                         |         | 54       | MHz              |               |
| Standard Frequencies         | 5, 10, 12, 16, 20, 24, 26, 27, 32, 40, 44                                                                 |         |          | MHz              |               |
| Operating Temperature        | -40                                                                                                       |         | +85      | $^\circ\text{C}$ |               |
| Storage Temperature          | -40                                                                                                       |         | +85      | $^\circ\text{C}$ |               |
| Overall Frequency Stability* | -15                                                                                                       |         | +15      | ppm              | See options   |
| Supply Voltage (Vdd)         | +2.7                                                                                                      | 3.0     | +3.3     | V                | See options   |
| Supply Current (Idd)         |                                                                                                           |         | 7.0      | mA               |               |
| Stand-by Current             |                                                                                                           |         | 10       | $\mu\text{A}$    |               |
| Symmetry                     | 45                                                                                                        |         | 55       | %                | @ 1/2Vdd      |
| Rise and Fall Time (Tr/Tf)   |                                                                                                           |         | 5.0      | ns               | 10%Vdd-90%Vdd |
| Output Load                  |                                                                                                           |         | 15       | pF               | CMOS          |
| Output Voltage (VOH)         | 0.9* Vdd                                                                                                  |         |          | V                |               |
| Output Voltage (VOL)         |                                                                                                           |         | 0.1* Vdd | V                |               |
| Start-up Time                |                                                                                                           | 0.2     | 3.0      | ms               |               |
| RMS Jitter                   |                                                                                                           | 3.0     |          | ps               |               |
| Tri-state function           | "1" ( $V_{IH} \geq 0.7 \cdot V_{dd}$ ) or Open: Oscillation<br>"0" ( $V_{IH} < 0.3 \cdot V_{dd}$ ) : Hi Z |         |          |                  |               |
| Phase Noise (@10kHz offset)  |                                                                                                           | -143    |          | dBc/Hz           |               |
| Aging@+25 $^\circ\text{C}$   | -2                                                                                                        |         | +2       | ppm              | First year    |
|                              | -7                                                                                                        |         | +7       |                  | 10 years      |

\* Overall frequency stability includes initial tolerance @ +25 $^\circ\text{C}$ , and temperature stability

### OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ASET-  -  MHz -  -

| Supply Voltage        |
|-----------------------|
| Blank: 3.0 $\pm 10\%$ |
| A: 2.7 $\pm 10\%$     |
| B: 3.3 $\pm 10\%$     |
| C: 2.8 $\pm 10\%$     |
| D: 2.5 $\pm 10\%$     |

| Frequency in MHz                                       |
|--------------------------------------------------------|
| Please specify the frequency in MHz.<br>e.g. 24.000MHz |

| Overall Freq. Stability   |
|---------------------------|
| Blank: $\pm 15\text{ppm}$ |
| Y: $\pm 10\text{ppm}$     |
| R7*: $\pm 7\text{ppm}$    |
| R5*: $\pm 5\text{ppm}$    |

| Packaging      |
|----------------|
| Blank: Bulk    |
| T: Tape & Reel |

\*Contact Abracon for availability





3.2 x 2.5 x 1.2mm

Figure 1 consists of two dimensional drawings of a test specimen. The top drawing is a plan view of a rectangular specimen with a central hole. It is labeled with points 1 through 6. The bottom drawing is a cross-section view of the specimen, showing hatched areas for the base. Both drawings include dimension lines and tolerance values.

Top drawing dimensions:

- Horizontal dimension:  $0.098 \pm 0.004$  (Tolerance:  $(2.5 \pm 0.1)$ )

Bottom drawing dimensions:

- Horizontal dimension:  $0.126 \pm 0.004$  (Tolerance:  $(3.2 \pm 0.1)$ )
- Vertical dimension:  $0.043 \pm 0.004$  (Tolerance:  $(0.9 \pm 0.10)$ )

Figure 1 is a schematic diagram of a 4-layer PCB layout for a 100MHz signal. The diagram shows a top layer with a microstrip line, a prepreg layer, an inner layer with a microstrip line, and a bottom layer with a microstrip line. Dimensions are given in inches and millimeters. A 0.01uF capacitor is shown on the bottom layer. A table defines Pin 1 and Pin 2.

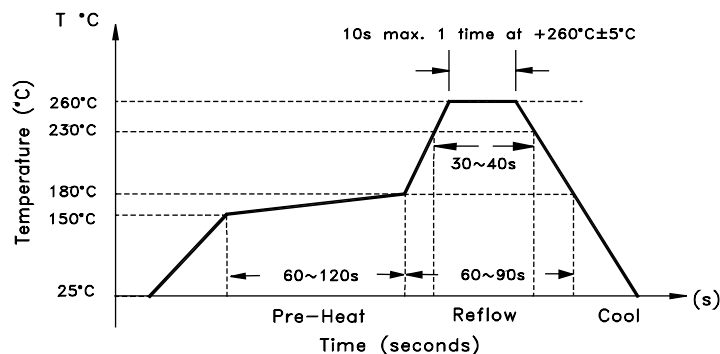
| Pin |  |
|-----|--|
| 1   |  |
| 2   |  |

| Pin | Function |
|-----|----------|
| 1   | OE       |
| 2   | NC       |
| 3   | GND      |
| 4   | Output   |
| 5   | NC       |
| 6   | Vdd      |

Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 3 and 6.

### Dimensions: Inches (mm)

## REFLOW PROFILE

[illegible]

Need a test socket for the ASET Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, **click here**. P/N: AXS-3225-04-05

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