

# LOW FREQUENCY CERAMIC SURFACE MOUNT MICROPROCESSOR CRYSTAL

ABC2

RoHS compliant with exemption of Pb in glass  
(exempt per RoHS 2002/95/EC Annex (5))

RoHS  
Compliant



11.8 x 5.5 x 1.9mm

*Not recommended for new designs >6MHz. Please consider our different package offerings.*

## FEATURES:

- Low frequency in small size SMD
- 2.0mm height ideal for high density circuit boards
- Ceramic package offers excellent environmental & heat resistance
- Extended temperature -40°C to +85°C for industrial applications

## APPLICATIONS:

- Wide range in communication & measuring equipment
- Commercial & Industrial applications
- Automotive electronics applications

## STANDARD SPECIFICATIONS:

| Parameters                                                                          | Minimum                                 | Typical | Maximum | Units | Notes                                                                                                      |
|-------------------------------------------------------------------------------------|-----------------------------------------|---------|---------|-------|------------------------------------------------------------------------------------------------------------|
| Frequency Range                                                                     | 3.500                                   | -----   | 30.000  | MHz   | Fundamental, AT                                                                                            |
|                                                                                     | 30.000                                  | -----   | 70.000  |       | 3 <sup>rd</sup> Overtone, AT                                                                               |
| Operation Mode                                                                      | Fundamental or 3 <sup>rd</sup> Overtone |         |         |       |                                                                                                            |
| Operating Temperature                                                               | -40                                     | -----   | +85     | °C    | Guaranteed oscillation only. For tighter freq. stability over temp (option D), see stability options below |
| Storage Temperature                                                                 | -55                                     | -----   | +125    | °C    |                                                                                                            |
| Frequency Tolerance @+25°C                                                          | -50                                     | -----   | +50     | ppm   | See options                                                                                                |
| Frequency Stability over the Operating Temperature -10 °C to +60 °C (ref. to +25°C) | -50                                     | -----   | +50     | ppm   | Standard for below 6.0MHz; (-10 °C to +60 °C) See options for other temperature                            |
|                                                                                     | -30                                     | -----   | +30     |       | Standard for above 6.0MHz; (-10 °C to +60 °C) See options for other temperature                            |
| Equivalent series resistance (R1)                                                   | See table 1 below                       |         |         | Ω     |                                                                                                            |
| Shunt capacitance (C0)                                                              | -----                                   | -----   | 7       | pF    |                                                                                                            |
| Load capacitance (CL)                                                               | -----                                   | 18      | -----   | pF    | See options                                                                                                |
| Drive Level                                                                         | -----                                   | -----   | 100     | μW    |                                                                                                            |
| Aging@25°C±3°C                                                                      | -----                                   | -----   | ±5      | ppm   | First year                                                                                                 |
| Insulation Resistance                                                               | 500                                     | -----   | -----   | M Ω   | @ 100Vdc ± 15V                                                                                             |

**Table 1**

| Frequency Ranges      | Operation mode | ESR (max) |
|-----------------------|----------------|-----------|
| 3.200MHz ~ 3.499MHz   | Fundamental    | 200 Ω     |
| 3.500MHz ~ 3.999MHz   | Fundamental    | 140 Ω     |
| 4.000MHz ~ 4.399MHz   | Fundamental    | 120 Ω     |
| 4.400MHz ~ 4.899MHz   | Fundamental    | 100 Ω     |
| 4.900MHz ~ 5.999MHz   | Fundamental    | 80 Ω      |
| 6.000MHz ~ 6.999MHz   | Fundamental    | 60 Ω      |
| 7.000MHz ~ 7.999MHz   | Fundamental    | 50 Ω      |
| 8.000MHz ~ 10.999MHz  | Fundamental    | 45 Ω      |
| 11.000MHz ~ 11.999MHz | Fundamental    | 40 Ω      |
| 12.000MHz ~ 14.999MHz | Fundamental    | 35 Ω      |
| 15.000MHz ~ 36.000MHz | Fundamental    | 30 Ω      |
| 27.000MHz ~ 70.000MHz | 3rd OT         | 100Ω      |



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## OPTIONS AND PART IDENTIFICATION: (Left blank if standard)

ABC2 -  MHz -  -  -  -  -  -

| Frequency in MHz                                         |
|----------------------------------------------------------|
| Please specify the frequency in MHz.<br>e.g. 14.31818MHz |

| Load Capacitance (pF)                   |
|-----------------------------------------|
| Please specify CL in pF or S for series |

| Custom ESR if other than standard                                  |
|--------------------------------------------------------------------|
| R <input type="text"/>                                             |
| <input type="checkbox"/> : Specify a value in $\Omega$ (e.g.: R40) |

| Operating Temp.      |
|----------------------|
| Blank: -10°C ~ +60°C |
| B: -20°C ~ +70°C     |
| D*: -40°C ~ +85°C    |

| Freq. Tolerance     |
|---------------------|
| Blank: $\pm 50$ ppm |
| 2: $\pm 20$ ppm     |
| 4: $\pm 30$ ppm     |

\* Option B and -10 ~60°C only  
\*\* Option Y, Z and Q only for  $F \geq 6.0$ MHz; Option Z and Q only for  $F < 6.0$ MHz

| Packaging                      |
|--------------------------------|
| Blank: Bulk                    |
| T: Tape & Reel (1k pcs /reel)  |
| T2: Tape & Reel (2k pcs /reel) |

| Freq. Stability  |
|------------------|
| Blank: Standard  |
| G*: $\pm 15$ ppm |
| W*: $\pm 25$ ppm |
| Y: $\pm 30$ ppm  |
| H: $\pm 35$ ppm  |
| Z: $\pm 50$ ppm  |
| Q: $\pm 100$ ppm |



# LOW FREQUENCY CERAMIC SURFACE MOUNT MICROPROCESSOR CRYSTAL

ABC2

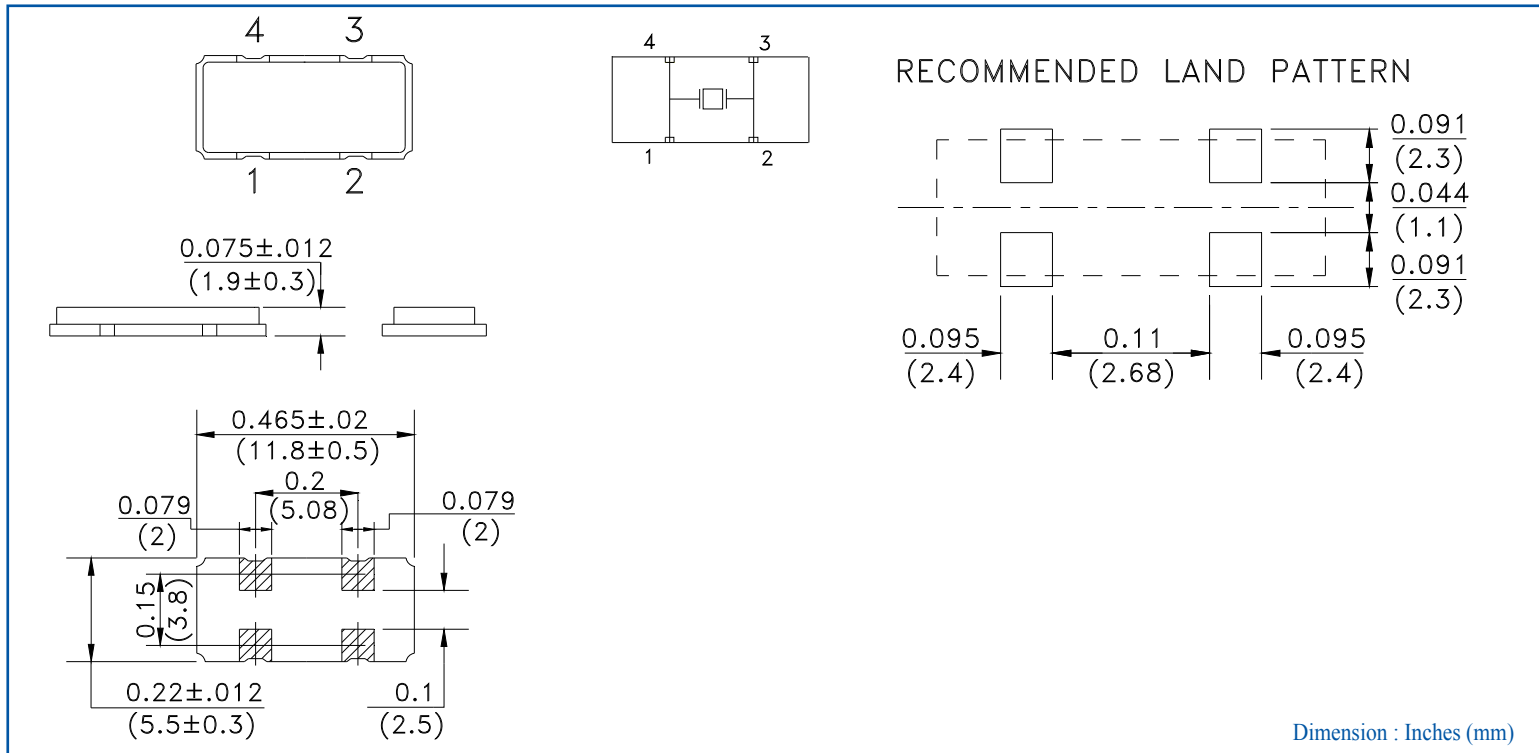
RoHS compliant with exemption of Pb in glass  
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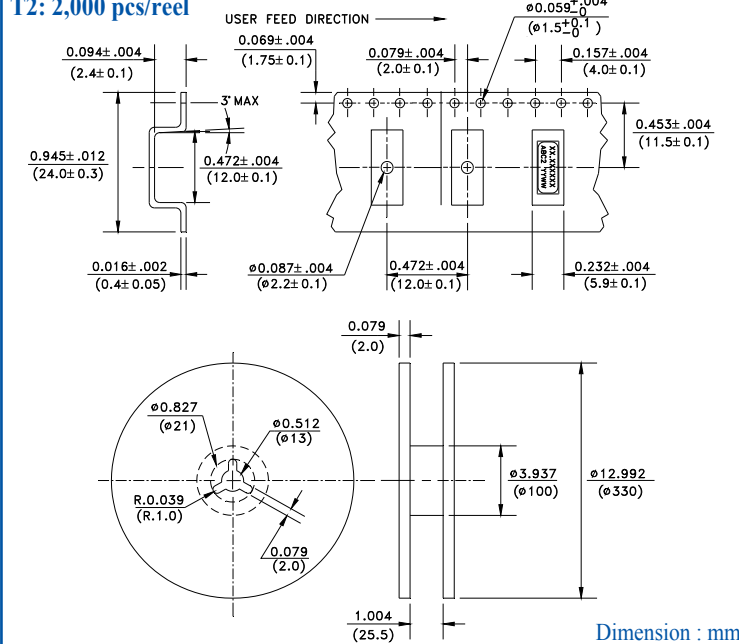
11.8 x 5.5 x 1.9mm

## OUTLINE DRAWING:

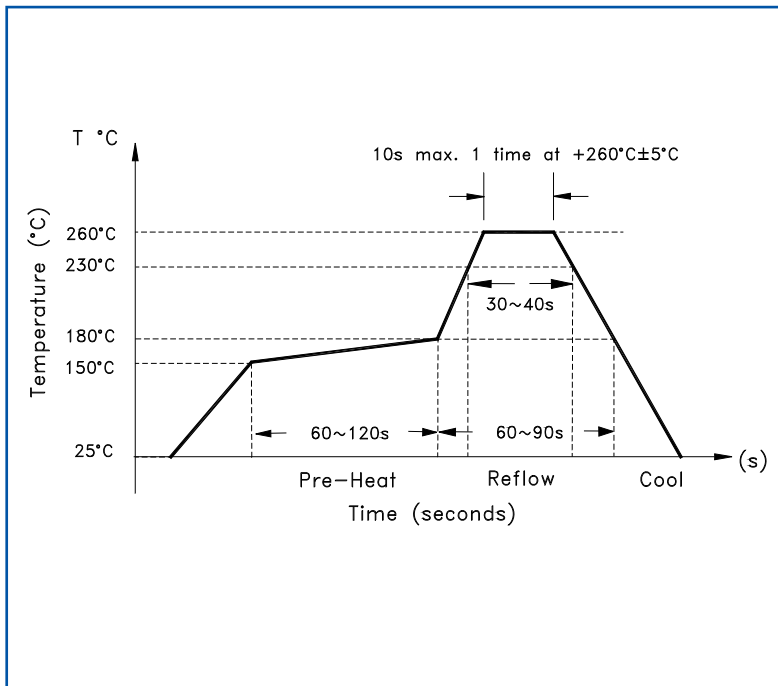


## TAPE & REEL:

T: 1,000 pcs/reel  
T2: 2,000 pcs/reel



## REFLOW PROFILE:



Need a test socket for the ABC2 Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here](#). P/N AXS-1155-04-01

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