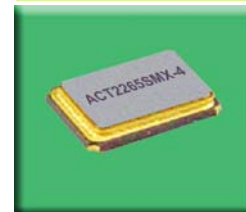


## ACT2265SMX-4

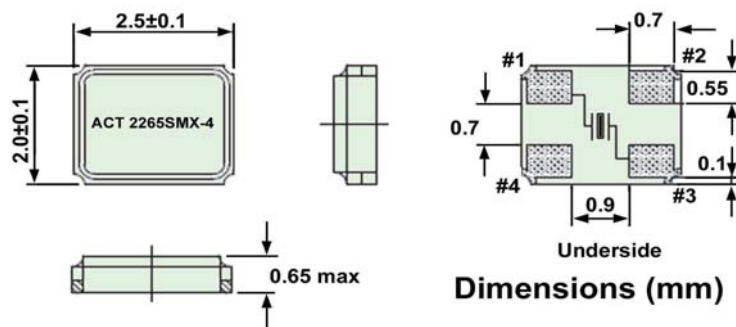
The **ACT2265SMX-4** is a very compact 4 pad, high quality, low aging, seam welded crystal. Utilising a ceramic base with a metal lid, it provides for the durability and reliability, necessary for strenuous processes like infrared and vapour reflow. The lid is grounded through the package, to assist with EMC issues and the pads are gold plated. The device is very suitable for automatic placement on PCB's. With an excellent range of frequencies and stabilities it is an optimum choice for designs where PCB space is at a premium. **Applications** include PDA, Cellular, MPU Clocks, ISM, Bluetooth, WLAN & Consumer electronics. Available loose or on reels. (Standard: 3,000 pieces / reel).

Compatible with Eu Directive  
2002/EC - RoHS



### Specification

| Parameter                    | Symbol         | Specification   | Condition                                       |
|------------------------------|----------------|---|---|
| Frequency Range              | fo             | 16.00 ~ 50.00 MHz   | AT, Fundamental                                 |
| Frequency Tolerance          | $\Delta f/f_0$ | $\pm 10\text{ppm} \sim 50\text{ppm}$ (Std) 25°C $\pm 3\text{ppm}$ | Please specify                                  |
| Stability over Temp Range    | Tc             | $\pm 5\text{ppm} \sim 100\text{ppm}$ (refer to table 2)           |   |
| Temp Operating Range         | Topr           | -10 ~ +60°C ~ -40 ~ +85°C   | Please specify                                  |
| Temp Storage Range           | Tstg           | -40 ~ +85°C   |   |
| Equivalent Series Resistance | ESR            | Please refer to Table 1   |   |
| Load Capacitance             | CL             | $\geq 6\text{ pF}$ & Series                                       | Please specify                                  |
| Shunt Capacitance            | C0             | 7pF max   |   |
| Drive Level                  | DL             | 10 $\mu\text{W}$ typical (100 $\mu\text{W}$ max!)                 |   |
| DLD                          |                | ESR x 30%   | 0.01 $\mu\text{W} \sim 100\mu\text{W}$ 20 steps |
| RLD                          |                | ESR x 100%  | 0.01 $\mu\text{W} \sim 100\mu\text{W}$ 20 steps |
| Insulation Resistance        | IR             | 500M $\Omega$ min   | @100V DC  |
| Reflow Process               |                | 10 Seconds @ 260°C (max)  |   |
| Aging                        | Fa             | $\pm 3\text{ppm}$ 1st year max                                    | @25°C   |



Pad surface  
material Au

Table 1

| Frequency Range (MHz) | ESR ( $\Omega$ ) | Mode        |
|-----------------------|------------------|-------------|
| 16.000 ~ 19.999       | 120              | Fundamental |
| 20.000 ~ 29.999       | 80               | Fundamental |
| 30.000 ~ 50.000       | 50               | Fundamental |

Table 2

| Frequency Stability v Operating Temperature Range |                    |                      |                     |                     |                     |                     |                     |                      |
|---|--------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Stability Temp                                    | $\pm 5\text{ ppm}$ | $\pm 7.5\text{ ppm}$ | $\pm 10\text{ ppm}$ | $\pm 15\text{ ppm}$ | $\pm 20\text{ ppm}$ | $\pm 30\text{ ppm}$ | $\pm 50\text{ ppm}$ | $\pm 100\text{ ppm}$ |
| -10 ~ 60°C  | ✓                  | ✓                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -20 ~ 60°C  |                    | ✓                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| 0 ~ 70°C  |                    | ✓                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -10 ~ 70°C  |                    | ✓                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -20 ~ 70°C  |                    | ?                    | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -30 ~ 60°C  |                    |                      | ✓                   | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -20 ~ 85°C  |                    |                      |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -30 ~ 70°C  |                    |                      |                     | ✓                   | ✓                   | ✓                   | ✓                   | ✓                    |
| -30 ~ 85°C  |                    |                      |                     |                     | ✓                   | ✓                   | ✓                   | ✓                    |
| -40 ~ 85°C  |                    |                      |                     |                     | ✓                   | ✓                   | ✓                   | ✓                    |
| -40 ~ 90°C  |                    |                      |                     |                     |                     | ✓                   | ✓                   | ✓                    |
| -40 ~ 105°C                                       |                    |                      |                     |                     |                     | ✓                   | ✓                   | ✓                    |

?

Enquire

Please note that all parameters can not necessarily be specified in the same device

Customer to specify : Frequency, Frequency Tolerance, Temperature Stability, Operating Temperature & Load Capacitance

In line with our ongoing policy of product evolution and improvement, the above specification may be subject to change without notice

**ISO9001:2000 Registered**

For quotations or further information please contact us at:

3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK

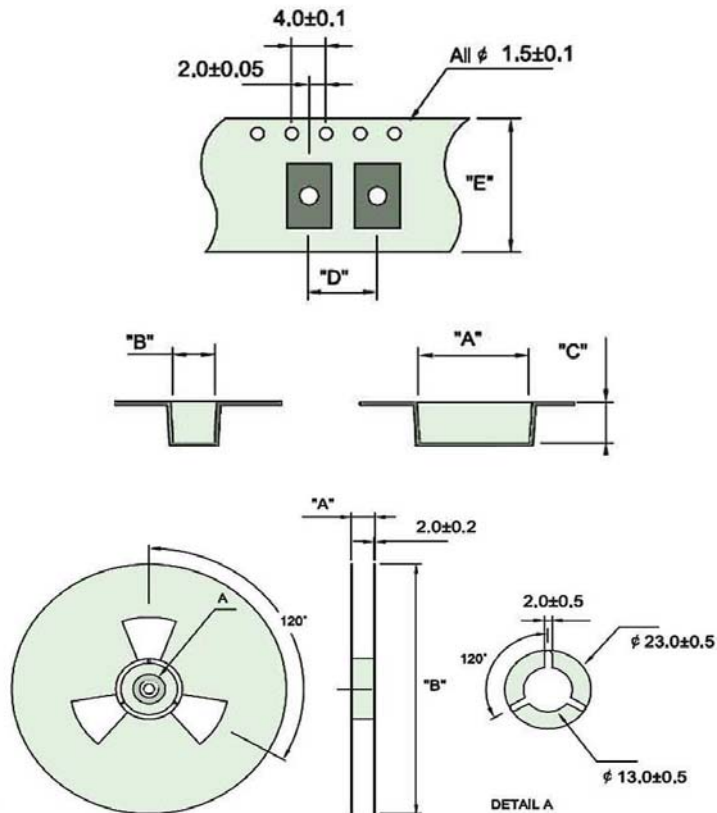
<http://www.actcrystals.com>

Issue 2 Skr

Date: 30/11/2010

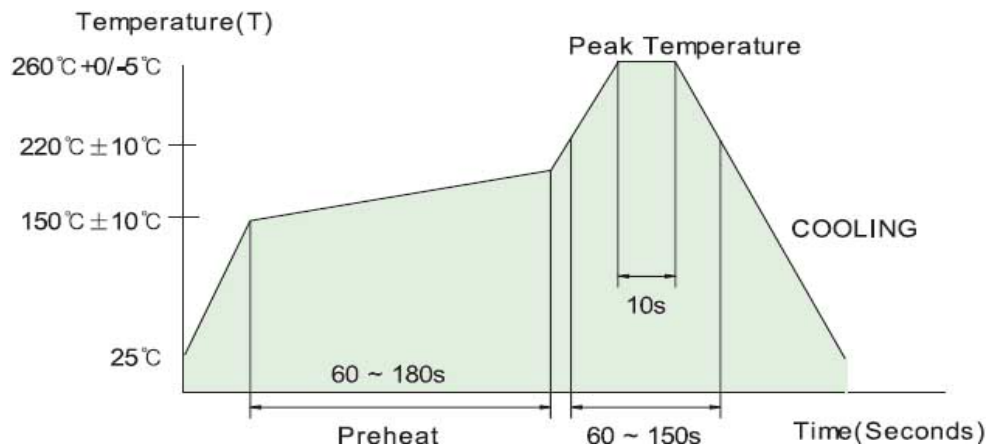
**ACT2265SMX-4 Series Tape Dimensions ( Units in mm )**

\* **Standard:** 3,000 piece reels



| Quantity<br>( pcs / Reel ) | Reel dimension |           | Career Tape dimension |         |         |         |         |
|----------------------------|----------------|-----------|-----------------------|---------|---------|---------|---------|
|                            | A              | B         | A                     | B       | C       | D       | E       |
| 3000                       | 11.5±0.2       | φ 178±0.2 | 2.8±0.1               | 2.3±0.1 | 1.0±0.1 | 4.0±0.1 | 8.0±0.2 |

**Reflow Information**



In line with our ongoing policy of product evolution and improvement, the above specification may be subject to change without notice

**ISO9001:2000 Registered**

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Date: 30/11/2010

**SERIES : ACT2265SMX-4 Part numbering code is CAA**

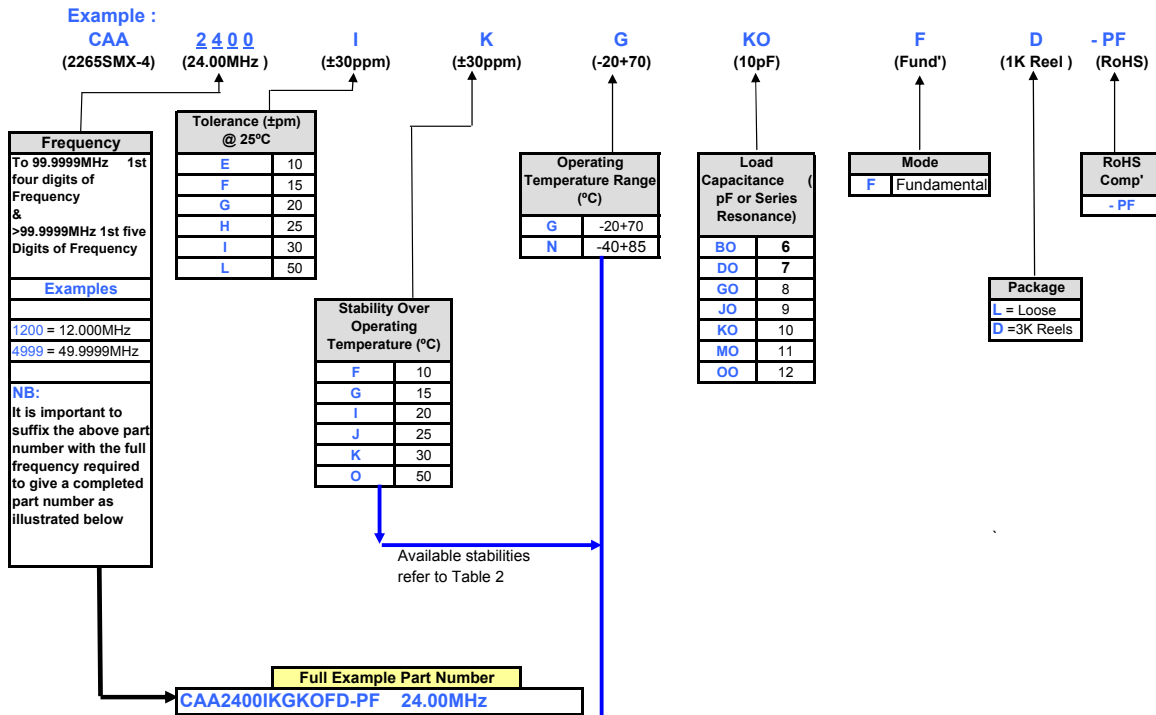


Table 2

| Frequency Stability v Operating Temperature Range |         |           |          |          |          |          |          |           |
|---|---------|-----------|----------|----------|----------|----------|----------|-----------|
| Stability Temp                                    | ± 5 ppm | ± 7.5 ppm | ± 10 ppm | ± 15 ppm | ± 20 ppm | ± 30 ppm | ± 50 ppm | ± 100 ppm |
| -10 ~ 60°C  | ✓       | ✓         | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| -20 ~ 60°C  |         | ✓         | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| 0 ~ 70°C  |         | ✓         | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| -10 ~ 70°C  |         | ✓         | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| -20 ~ 70°C  |         | ?         | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| -30 ~ 60°C  |         |           | ✓        | ✓        | ✓        | ✓        | ✓        | ✓         |
| -20 ~ 85°C  |         |           |          | ✓        | ✓        | ✓        | ✓        | ✓         |
| -30 ~ 70°C  |         |           |          | ✓        | ✓        | ✓        | ✓        | ✓         |
| -30 ~ 85°C  |         |           |          |          | ✓        | ✓        | ✓        | ✓         |
| -40 ~ 85°C  |         |           |          |          | ✓        | ✓        | ✓        | ✓         |
| -40 ~ 90°C  |         |           |          |          |          | ✓        | ✓        | ✓         |
| -40 ~ 105°C                                       |         |           |          |          |          | ✓        | ✓        | ✓         |

? Enquire

**NOTES :**

- 1) Tighter Tolerances and Stabilities and other Operating Temperature Ranges may be available. As each of these specification parameters impact on each other, it is not always possible to combine all options in one device. Therefore, if a specification not catered for above is required, please contact us directly for the relevant part number code(s).
- 2) ACT are always happy to consider truly custom specification parts which may require non-standard specification parameters, specific testing, customer requested AQL requirements, non standard packaging or taping and reeling and custom marking. Such devices would normally be allocated a custom specification part number which is wholly customer specific.  
(Eg: A 24.00MHz custom ACT2265SMX-4 device with custom part number such as CAA4000-00044-PF)
- 3) A guide to availability of tighter stabilities appears in Table 2 of the data sheet
- 4) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000 ) See main data sheet for available frequency range.