



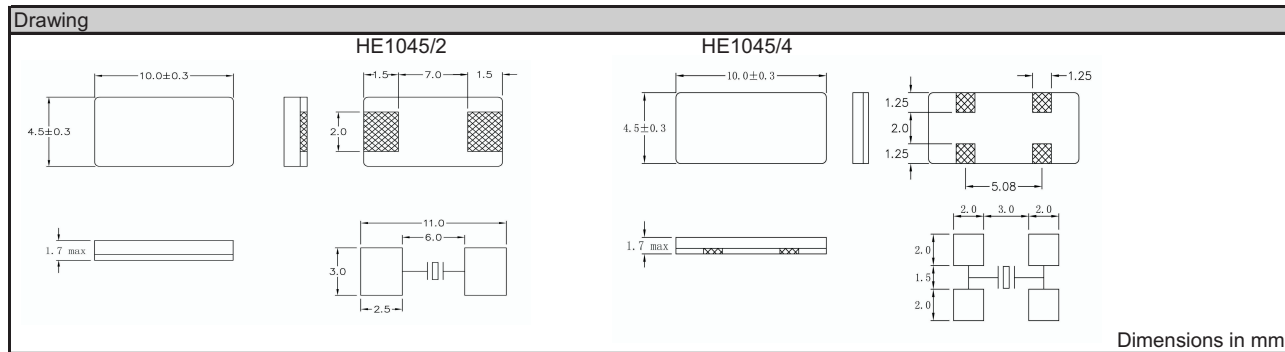
HE1045/2  
HE1045/4

Features:

- SMD
- High reliability seam welded seal
- Frequency up to 7 MHz
- Ultra thin profile

| Specifications                      |                         |                      |                    |
|-------------------------------------|-------------------------|----------------------|--------------------|
|                                     | Symbol                  | HE1045               | Remarks            |
| Frequency range                     | f                       | 3.2768MHz ~ 7.000MHz | Fundamental mode   |
| Frequency tolerance (std.), Ta=25°C | $\Delta f/f$            | ±30ppm               | Others are offered |
| Load capacitance                    | C <sub>L</sub>          | 10pF - 30pF          | Please specify     |
| Temperature tolerance (std.)        | $\Delta f/f$            | ± 30ppm              | Others are offered |
| Temperature range                   | Storage temperature     | T <sub>STG</sub>     | -40°C ~ +85°C      |
|                                     | Operating temperature   | T <sub>OPR</sub>     | -20°C ~ +70°C      |
| Drive level                         | Maximum drive level     | M <sub>DL</sub>      | 500µW              |
|                                     | Recommended drive level | R <sub>DL</sub>      | 20µW ~ 100µW       |
| Series resistance                   | R <sub>1</sub>          | As per table         | 25°C ±3°C          |
| Shunt capacitance                   | C <sub>0</sub>          | 7pF                  | Max                |
| Insulation resistance               | I <sub>R</sub>          | 500M Ohm             | Min                |
| Aging                               | $\Delta f_A$            | ±5ppm/Year           | Max                |

| Frequency of series resonance (ESR) |             |         |  |                 |      |     |
|-------------------------------------|-------------|---------|--|-----------------|------|-----|
| Frequency (MHz)                     | Mode        | Ohm max |  | Frequency (MHz) | Mode | Ohm |
| 3.2768 ≤ f < 7.0                    | Fundamental | 80-150  |  |                 |      |     |



| Order key |             |                      |                     |                     |                       |   |                  |                                       |
|-----------|-------------|----------------------|---------------------|---------------------|-----------------------|---|------------------|---------------------------------------|
| Q         | - 4.000000M | - HE1045/2           | - F                 | - 30                | - 30                  | - A   | - 30             | - TR                                  |
| Part      | Frequency   | Package              | Mode of oscillation | Frequency tolerance | Temperature tolerance | Temperature range   | Load capacitance | Option                                |
| Q=Quartz  | M=MHz       | HE1045/2<br>HE1045/4 | F=fund.             | ±ppm<br>(25°C)      | ±ppm<br>(Temp. range) | A= 0°C ~ +70°C<br>B= -10°C ~ +60°C<br>C= -10°C ~ +70°C<br>D= -20°C ~ +70°C<br>E= -40°C ~ +70°C<br>H= -20°C ~ +80°C<br>I = -10°C ~ +50°C | pF<br>SR=series  | TR=Tape and reel<br>X=Special options |