



# Quartz Crystal - UM-5 SMD ( Clip)

**Pin Type - 7.0 x 5.8 x 3.1mm**

## • Features

- Low cost & wide applications
- Tight tolerance and Stability
- RoHS compliant

## • General Specification

|                             |                         |
|-----------------------------|-------------------------|
| Type                        | UM-5 SMD ( Clip )       |
| Frequency Range             | 10.000MHz to 150.000MHz |
| Frequency Tolerance at 25°C | ± 30ppm *               |
| Frequency Stability         | ± 50ppm *               |
| Operating Temperature       | -10°C to +60°C *        |
| Load Capacitance            | 6pF to 32pF / Series    |
| Shunt Capacitance           | 7pF max *               |
| Storage Temperature         | -40°C to +85°C *        |
| Drive Level                 | 100μW *                 |
| Aging                       | ± 5ppm max first year * |

\* Can be changed according to Customer's requirement.

## • Drive Level Codes (μW)

|         |         |        |         |         |        |
|---------|---------|--------|---------|---------|--------|
| A = 100 | B = 200 | D = 50 | E = 300 | G = 500 | I = 10 |
|---------|---------|--------|---------|---------|--------|

## • Load Capacitance Codes

|            |            |           |          |          |            |
|------------|------------|-----------|----------|----------|------------|
| 12pF = A   | 12.5pF = B | 14pF = C  | 16pF = D | 17pF = E | 18pF = F   |
| 20pF = G   | 25pF = H   | 30pF = I  | 32pF = J | 33pF = K | Series = L |
| 13pF = M   | 27pF = N   | 50pF = O  | 10pF = P | 15pF = Q | 22pF = R   |
| 15.8pF = S | 8.5pF = T  | 8.2pF = U | 40pF = V | 9pF = W  | 11pF = X   |
| 13.8pF = Y | 19.6pF = Z | 6pF = a   | 7pF = d  | 8pF = e  | 19pF = f   |

## • Operating Temperature Codes (°C)

|                |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|----------------|
| A = -10 to +60 | B = -20 to +70 | C = -10 to +70 | I = -40 to +85 | X = -30 to +80 | W = -10 to +50 |
|----------------|----------------|----------------|----------------|----------------|----------------|

## • Frequency Tolerance & Frequency Stability Codes (ppm)

|         |         |         |         |          |        |
|---------|---------|---------|---------|----------|--------|
| P = ±10 | S = ±20 | T = ±30 | U = ±50 | V = ±100 | W = ±5 |
|---------|---------|---------|---------|----------|--------|

Pls contact us for the parameters you could not find in these tables.

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## • Frequency Stability vs. Operating Temperature

|              | ± 10ppm | ± 20ppm | ± 30ppm | ± 50ppm | ± 100ppm |
|--------------|---------|---------|---------|---------|----------|
| -10°C- +60°C | ⊙       | ⊙       | ●       | ⊙       | ⊙        |
| -10°C- +70°C | ⊙       | ⊙       | ●       | ⊙       | ⊙        |
| -20°C- +70°C | ⊙       | ⊙       | ●       | ●       | ⊙        |
| -40°C- +85°C |         |         | ⊙       | ●       | ⊙        |

⊙ Available      ● Standard

## • ESR (Series Resistance Rs) vs Standard Frequency, Vibration Mode & Codes

| Frequency Range<br>(MHz) | ESR Max<br>(Ω) | Code | Vibration Mode | Code |
|--------------------------|----------------|------|----------------|------|
| 10.000 - 13.999          | 50             | 2    | AT Fund        | A    |
| 14.000 - 40.000          | 40             | 4    | AT Fund        | A    |
| 24.000 - 34.999          | 100            | b    | 3rd OT         | a3   |
| 35.000 - 100.00          | 80             | 0    | 3rd OT         | a3   |
| 75.000 - 150.00          | 80             | 0    | 5th OT         | a5   |

## • Marking

**Frequency + M (MHz) + Date code ( Year Code + Month Code )**

**NEWXTAL (Company brand)**

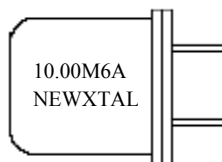
Year Code:

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |

Month Code:

|     |     |       |       |     |      |      |     |      |     |     |     |
|-----|-----|-------|-------|-----|------|------|-----|------|-----|-----|-----|
| Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
| A   | B   | C     | D     | E   | F    | G    | H   | I    | J   | K   | L   |

**For Example:**



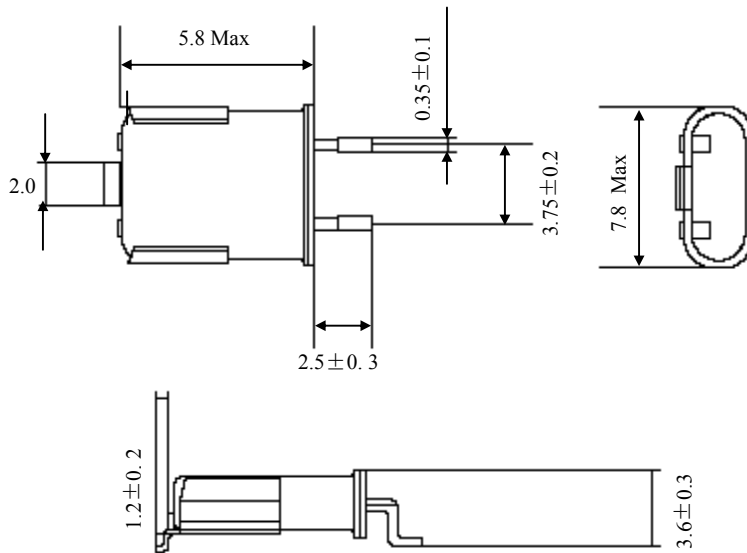
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## Ordering Information

| Drive Level | Load Capacitance | Operating Temperature | Frequency Tolerance | Frequency Stability | ESR          | Type         | Vibration Mode | Frequency | Lead-free | Packing     |
|-------------|------------------|-----------------------|---------------------|---------------------|--------------|--------------|----------------|-----------|-----------|-------------|
| ( $\mu$ W)  | (pF)             | ( $^{\circ}$ C)       | (ppm)               | (ppm)               | ( $\Omega$ ) |              |                | (MHz)     |           |             |
| See Tables  |                  |                       |                     |                     |              | R = UM-5 SMD | See Table      | xx.xxxM   | LF        | TR          |
| 100         | 20               | -10 to +60            | $\pm 30$            | $\pm 30$            | 50           |              | AT Fund        |           | Lead-free | Tape & reel |
| <b>A</b>    | <b>G</b>         | <b>A</b>              | <b>T</b>            | <b>T</b>            | <b>2</b>     | <b>R</b>     | <b>A</b>       |           | <b>LF</b> | <b>TR</b>   |

For Example: **AGATT2RA-10.000MLF/TR**

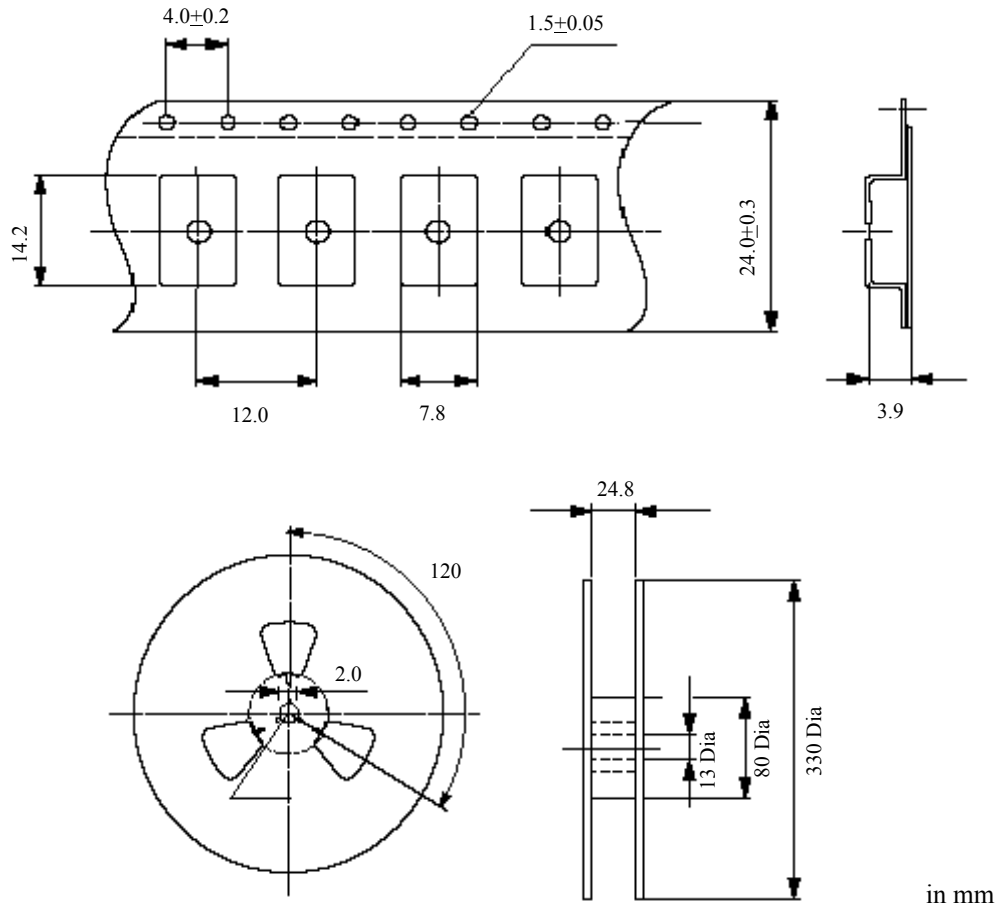
## Dimensions



in mm

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## • Taping Specification



\* Reel Quantity: 1,000pcs

## • Wave Soldering Profile

