

Quartz Crystals



FEATURES

- Ultra-miniature size: 5.0 x 3.2 x 0.8 (mm)
- Wide frequency range
- Seam sealing
- Emboss tapping
- Compliant to RoHS Directive 2002/95/EC


RoHS
COMPLIANT

The XT35 is a miniature SMD crystal with 5.0 x 3.2 (mm) ceramic package and a height of 0.8 mm. 12 MHz to 25 MHz frequency makes it widely applied in PDA, GPS, MP3, and portable instruments.

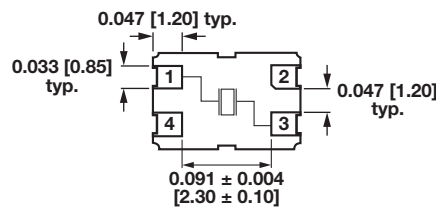
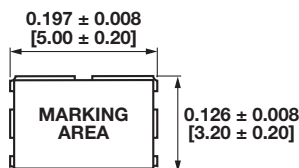
STANDARD ELECTRICAL SPECIFICATIONS

| PARAMETER | SYMBOL | CONDITION | UNIT | MIN. | TYP. | MAX. |
|-----------------------------|----------------|---------------------|------|--------|------|--------|
| Frequency range | F_0 | | MHz | 12.000 | - | 25.000 |
| Frequency tolerance | $\Delta F/F_0$ | at 25 °C | ppm | - | ± 30 | - |
| Temperature stability | T_C | ref. to 25 °C | ppm | - | ± 50 | - |
| Operating temperature range | T_{OPR} | | °C | 0 | - | + 70 |
| Storage temperature range | T_{STG} | | °C | - 55 | - | + 125 |
| Shunt capacitance | C_0 | | pF | - | - | 7 |
| Load capacitance | C_L | customer specified | pF | 10 | - | series |
| Insulation resistance | I_R | 100 V _{DC} | MΩ | 500 | - | - |
| Drive level | D_L | | μW | 10 | 50 | 100 |
| Aging | F_a | at 25 °C, per year | ppm | - 5 | - | + 5 |

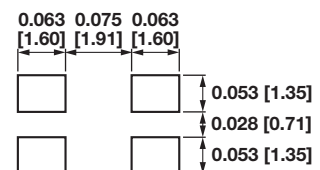
EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)

| FREQUENCY RANGE (MHz) | MAX. ESR (Ω) | MODE |
|-----------------------|--------------|-------------|
| 12.000 to 19.999 | 80 | fundamental |
| 20.000 to 25.000 | 70 | fundamental |

DIMENSIONS in inches [millimeters]



Recommended Solder Pattern



Note
Pin #2 and pin #4 are connected through cover, in case connected to GND. Frequency might be drifted.



| ORDERING INFORMATION | | | |
|----------------------|---|-----------------------------|---|
| XT35 MODEL | -20 LOAD blank = series -20 = 20 pF -32 = 32 pF -16 = 16 pF | 25M FREQUENCY/MHz | e4 JEDEC LEAD (Pb)-FREE STANDARD |

| GLOBAL PART NUMBER | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|--|---|--|---|---|---|
| <table border="1"> <tr><td>X</td><td>T</td><td>3</td><td>5</td></tr> </table> MODEL | X | T | 3 | 5 | <table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD | 2 | 0 | <table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE | A | <table border="1"> <tr><td>2</td><td>5</td><td>M</td></tr> </table> FREQUENCY | 2 | 5 | M |
| X | T | 3 | 5 | | | | | | | | | | |
| 2 | 0 | | | | | | | | | | | | |
| A | | | | | | | | | | | | | |
| 2 | 5 | M | | | | | | | | | | | |

| GLOBAL PART NUMBERING | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|
| <table border="1"> <tr><td>X</td><td>T</td><td>9</td><td>S</td></tr> </table> MODEL NUMBER XT9S = XT49S XT9M = XT49M XTU1 = XTUM1 | X | T | 9 | S | <table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD CAPACITANCE 18 = 18 pF 20 = 20 pF NL = series to be specified by customer | 2 | 0 | <table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE Tape and reel G = RF5 (XT9S) H = RF7 (XT9M) Bulk A = B04 (all models) | A | <table border="1"> <tr><td>N</td><td>A</td></tr> </table> OPTIONS NA = no additional options RR = extended temperature of - 40 °C to + 85 °C Contact factory for all other options | N | A | <table border="1"> <tr><td>4</td><td>0</td><td>M</td></tr> </table> FREQUENCY 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency | 4 | 0 | M |
| X | T | 9 | S | | | | | | | | | | | | | |
| 2 | 0 | | | | | | | | | | | | | | | |
| A | | | | | | | | | | | | | | | | |
| N | A | | | | | | | | | | | | | | | |
| 4 | 0 | M | | | | | | | | | | | | | | |
| Example: XT49S-20 40M | | | | | | | | | | | | | | | | |
| <table border="1"> <tr><td>X</td><td>T</td><td>3</td><td>6</td></tr> </table> MODEL NUMBER XT46 = XT46C XT36 = XT36C XT35 = XT35 XT23 = XT23 | X | T | 3 | 6 | <table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD CAPACITANCE 18 = 18 pF 20 = 20 pF NL = series to be specified by customer | 2 | 0 | <table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE Tape and reel H = RF7 Bulk A = B04 (all models) | A | <table border="1"> <tr><td>1</td><td>2</td><td>M</td></tr> </table> FREQUENCY 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency | 1 | 2 | M | | | |
| X | T | 3 | 6 | | | | | | | | | | | | | |
| 2 | 0 | | | | | | | | | | | | | | | |
| A | | | | | | | | | | | | | | | | |
| 1 | 2 | M | | | | | | | | | | | | | | |
| Example: XT36C-20 12M | | | | | | | | | | | | | | | | |



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