

## CX-05 micro smd crystal (16.0 ~ 80.0)MHz fundamental

- # (2.5 x 2.0)mm ceramic package
- # high reliability
- # 8.0mm tape and reel
- # AT cut fundamental

### Electrical specification

<b>Case style</b>	CX05: height 0.5mm
<b>Frequency range</b>	(16.0 ~ 80.0)MHz, fundamental
<b>Standard frequencies</b>	16.00MHz, 24.00MHz, 25.00MHz, 26.00MHz, 38.839364MHz, 40.00MHz,
<b>Adjustment tolerance</b>	from $\pm 15$ ppm at +25°C, frequency dependent
<b>Temperature tolerance</b>	from $\pm 10$ ppm, frequency and temperature range dependent
<b>Operating temperature</b>	(0 +50)°C ~ (-40 +85)°C
<b>Storage temperature</b>	(-40 +85)°C
<b>Load</b>	8pF, 10pF typical
<b>Shunt capacitance <math>C_0</math></b>	7.0pF max.
<b>Drive level</b>	200 $\mu$ W max.
<b>Q factor</b>	80,000 typical
<b>Ageing</b>	$\pm 5$ ppm max. per year
<b>Insulation resistance</b>	500Meg. ohm min. at 100Vd.c.

### Ordering information

The CX-05 smd crystals may be specified within their available frequency range together with load capacitance, adjustment tolerance, temperature tolerance and temperature range with each parameter coded as follows ....

**Example .... CX-05 crystal, 20.00MHz, load 10pF,  $\pm 20$ ppm at +25°C,  $\pm 10$ ppm(-10 +60)°C**

**TFC PART NUMBER .... CX05X 20.00M C C B I**

'CX05X' .... crystal series: CX05X = CX-05

'20.00M' .... frequency: 20.00M = 20.00MHz, frequency range from (16.0 ~ 80.0)MHz fundamental

'C' .... load capacitance: C = 10pF

'C' .... adjustment tolerance at +25°C: C =  $\pm 20$ ppm

'B' .... temperature tolerance: B =  $\pm 10$ ppm

'I' .... temperature range: I = (-10 +60)°C

**Load capacitance .... A: 8pF, C: 10pF**

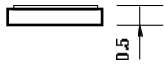
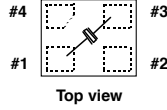
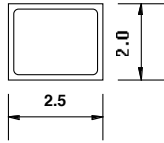
**Adjustment tolerance .... C:  $\pm 20$ ppm, E:  $\pm 30$ ppm, G:  $\pm 50$ ppm, H:  $\pm 100$ ppm, P:  $\pm 15$ ppm**

**Temperature tolerance .... B:  $\pm 10$ ppm, C:  $\pm 20$ ppm, E:  $\pm 30$ ppm, G:  $\pm 50$ ppm, H:  $\pm 100$ ppm, P:  $\pm 15$ ppm**

**Temperature range .... B: (0 +50)°C, I: (-10 +60)°C, C: (-20 +70)°C, L: (-40 +85)°C**

## CX-05 micro smd crystal

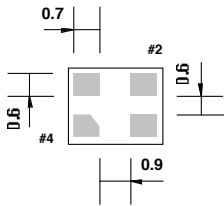
### CX-05 dimensions(mm) shown x5 full size



#### Suggested land pattern

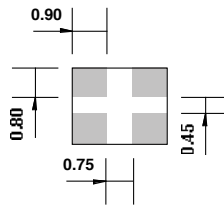
Crystal pads are palladium gold, 0.5 $\mu$ , suitable for vapour phase or reflow soldering, preheat to +150°C for 2 minutes, peak temperature 250°C for 30 seconds max.

Pad size (0.9 x 0.8)mm



Bottom view

Pads #2 and #4 connected to metal top

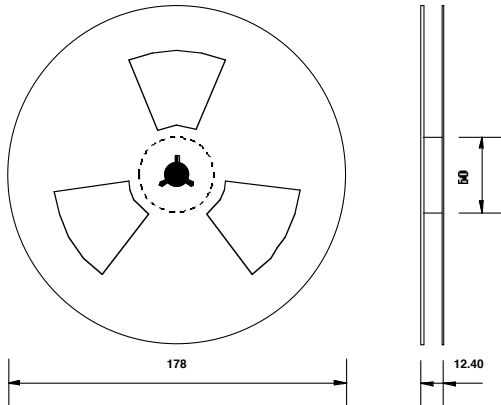


Life size 1:1

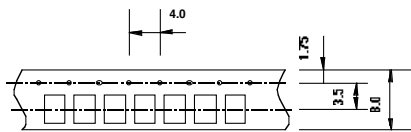
### ESR - equivalent series resistance

frequency range(MHz)	cut/mode	esr( $\Omega$ )
(16.0 ~ 20.0)	AT1	<150
(20.0 ~ 30.0)	AT1	<100
(30.0 ~ 80.0)	AT1	<60

### Tape and reel dimensions(mm)



Centre hole diameter 13.0mm, slot width 2mm spaced at 120°  
Reel quantity 3000 pieces, leader tape 400mm minimum  
Trailer tape: 10 empty compartments minimum



Tape transport hole diameter 1.5mm  
Compartment size 2.75mm x 2.25mm, depth 0.65mm  
Component spacing 4.0mm