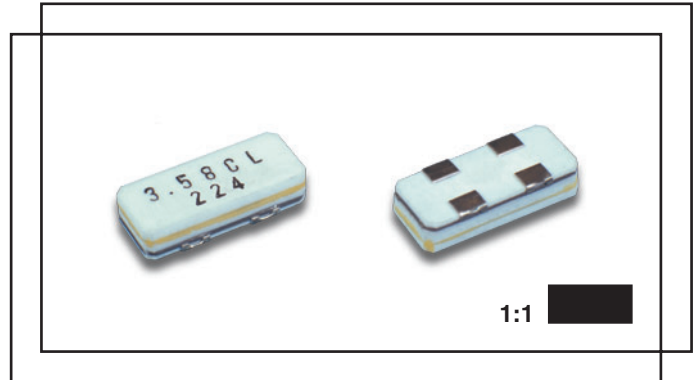


## CX-01 smd crystal (3.20 ~ 60.0)MHz

- # (11.90 x 5.3)mm ceramic package
- # 24mm tape and reel
- # Standard and custom frequencies
- # Low profile



### Electrical specification

<b>Case style</b>	CX-01: height 2.50mm
<b>Frequency range</b>	(3.20 ~ 60.0)MHz, fundamental and third overtone
<b>Adjustment tolerance</b>	from $\pm 10$ ppm at +25°C, frequency dependent
<b>Temperature tolerance</b>	from $\pm 10$ ppm, frequency and temperature range dependent
<b>Operating temperature</b>	(-10 +60)°C
<b>Storage temperature</b>	(-40 +85)°C
<b>Load</b>	customer specified
<b>Shunt capacitance <math>C_0</math></b>	7.0pF max.
<b>Drive level</b>	(0.1 ~ 0.5)mW
<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-01 smd crystals may be specified within their available frequency range together with load capacitance, adjustment tolerance and temperature tolerance with each parameter coded as follows ....

**Example .... CX-01 crystal, 13.00MHz, load 20pF,  $\pm 10$ ppm at +25°C,  $\pm 10$ ppm(-10 +60)°C**

**TFC PART NUMBER .... CX1 13.00M H B B**

'CX1' .... crystal series: CX = CX-01

'13.00M' .... frequency: 13.00M = 13.00MHz, frequency range from (3.2 ~ 60.0)MHz

'H' .... load capacitance: H = 20pF

'B' .... adjustment tolerance at +25°C: B =  $\pm 10$ ppm

'B' .... temperature tolerance: B =  $\pm 10$ ppm(-10 +60)°C

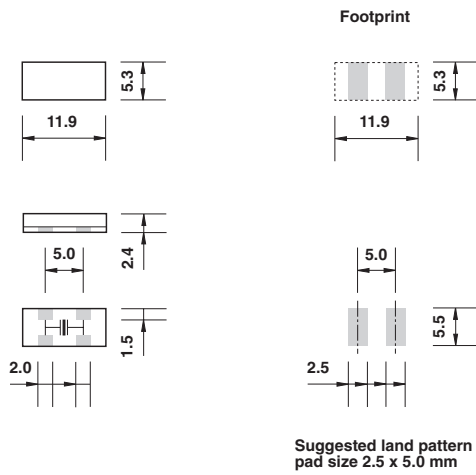
**Load capacitance .... C: 10pF, D: 12pF, E: 15pF, G: 18pF, H: 20pF, I: 30pF, J: 32pF, S: series**

**Adjustment tolerance .... B:  $\pm 10$ ppm, E:  $\pm 30$ ppm, G:  $\pm 50$ ppm, H:  $\pm 100$ ppm**

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

## CX-01 smd crystal

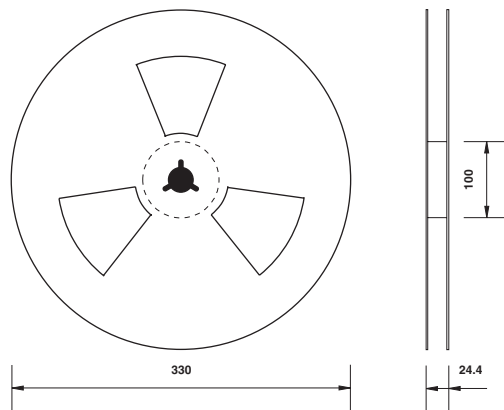
### CX-01 dimensions(mm)



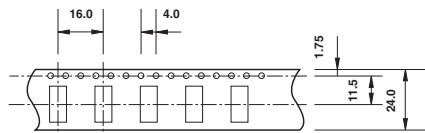
### ESR - equivalent series resistance

frequency range(MHz)	cut/mode	esr( $\Omega$ )
(3.2 ~ 3.5)	AT1	<250
(3.5 ~ 4.0)	AT1	<200
(4.0 ~ 4.5)	AT1	<150
(4.5 ~ 4.7)	AT1	<100
(7.0 ~ 14.0)	AT1	<70
(14.0 ~ 20.0)	AT1	<60
(20.0 ~ 60.0)	AT3	<100

### Tape and reel dimensions(mm)



Centre hole diameter 13.0mm, slot width 2mm spaced at 120°  
 Reel quantity 500 pieces, leader tape 400mm minimum  
 Trailer tape: 10 empty compartments minimum



Tape transport hole diameter 1.5mm  
 Compartment size 12.7mm x 6.0mm, depth 3.0mm  
 Component spacing is 12.0mm