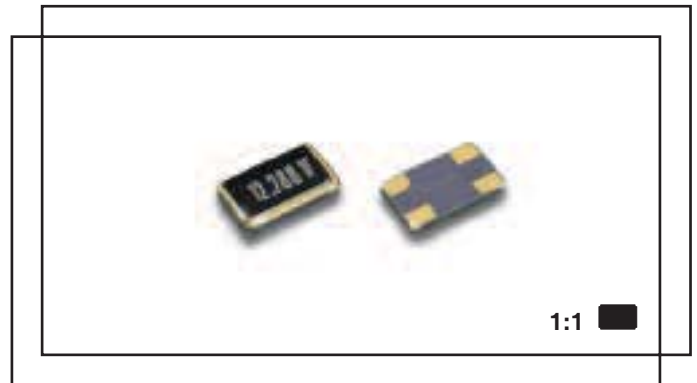


XV miniature smd crystal (11.0 ~ 80.0)MHz

- # (5.0 x 3.2)mm ceramic case
- # 12mm tape and reel
- # standard and custom frequencies
- # AT cut quartz
- # RoHS compliant



Electrical specification

Case style	XV: height 0.9mm
Frequency range	(11.0 ~ 80.0)MHz, fundamental
standard frequencies	12.00MHz, 12.80MHz, 13.00MHz, 14.40MHz, 15.36MHz, 16.00MHz, 16.80MHz, 19.20MHz, 19.50MHz, 19.68MHz, 24.00MHz, 26.00MHz, 32.00MHz
Adjustment tolerance	from ± 5 ppm at +25°C, frequency dependent
Temperature tolerance	from ± 5 ppm, frequency and temperature range dependent
Operating temperature	(-10 +60)°C ~ (-40 +85)°C
Storage temperature	(-40 +85)°C min. ~ (-55 +125)°C max.
Load	customer specified
Shunt capacitance C_0	7.0pF max.
Drive level	10 μ W typical, 100 μ W max.
Q factor	80,000 typical
Ageing	± 1 ppm max. per year
Insulation resistance	500Meg. ohm min. at 100Vd.c.

Ordering information

The XV 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 XV crystal, 13.00MHz, load 20pF, ± 10 ppm at +25°C, ± 10 ppm(-10 +60)°C

TFC PART NUMBER XV 13.00M H B B I

'XV' crystal series: XV

'13.00M' frequency: 13.00M = 13.00MHz, frequency range from (11.0 ~ 80.0)MHz

'H' load capacitance: H = 20pF

'B' adjustment tolerance at +25°C: B = ± 10 ppm

'B' temperature tolerance: B = ± 10 ppm

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

Load capacitance A: 8pF, B: 9pF, C: 10pF, D: 12pF, E: 15pF, G: 18pF, H: 20pF, I: 30pF, J: 32pF, S: series

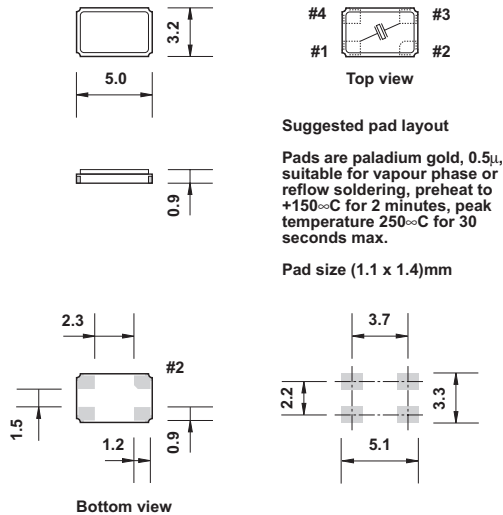
Adjustment tolerance A: ± 5 ppm, B: ± 10 ppm, P: ± 15 ppm, C: ± 20 ppm, E: ± 30 ppm, G: ± 50 ppm, H: ± 100 ppm

Temperature tolerance A: ± 5 ppm, B: ± 10 ppm, P: ± 15 ppm, C: ± 20 ppm, E: ± 30 ppm, G: ± 50 ppm, H: ± 100 ppm

Temperature range I: (-10 +60)°C, C: (-20 +70)°C, L: (-40 +85)°C

XV miniature smd crystal

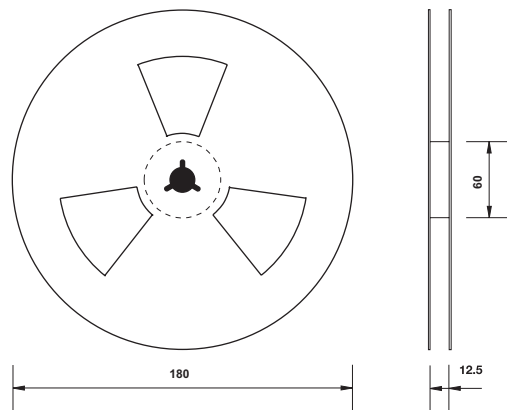
XV dimensions(mm) shown twice full size



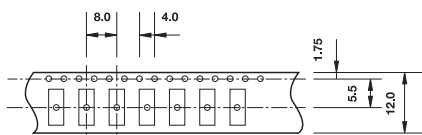
ESR - equivalent series resistance

frequency range(MHz)	cut/mode	esr(Ω)
(11.0 ~ 12.0)	AT1	<65
(12.0 ~ 13.0)	AT1	<60
(13.0 ~ 16.0)	AT1	<55
(16.0 ~ 24.0)	AT1	<50
(24.0 ~ 48.0)	AT1	<40
(48 ~ 53.125)	AT1	<45
(80.0)	AT3	<60

Standard tape and reel dimensions(mm)



Centre hole diameter 13.5mm, slot width 2mm spaced at 120°
Standard reel quantity 1k pieces, leader tape 400mm minimum
Trailer tape: 10 empty compartments minimum



Tape transport hole diameter 1.5mm
Compartment size 4.0mm x 2.9mm, depth 1.0mm
Component spacing is 12.0mm

Product marking

Marking includes frequency and date / spec code:

- XX.XXX Frequency in MHz
 YWW Y = last digit of year
 WW = week number
- XX.XXX Frequency in MHz
 SSSS Specification code