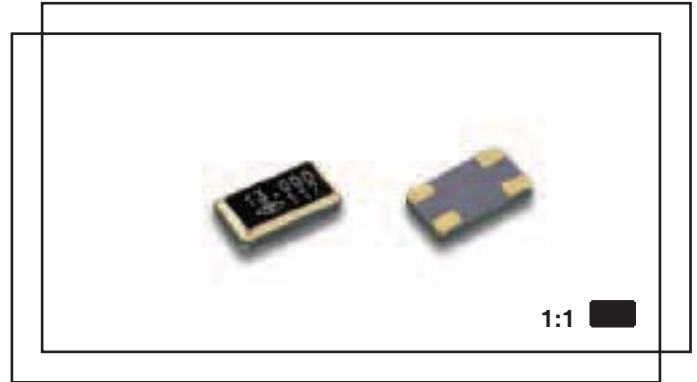


XR miniature smd crystal (9.60 ~ 125)MHz

- # (6.0 x 3.5)mm ceramic case
- # 16mm tape and reel
- # standard and custom frequencies
- # AT cut quartz
- # RoHS compliant



Electrical specification

Case style	XR: height 1.0mm
Frequency range	(9.60 ~ 49.0)MHz fundamental, (30.0 ~ 125)MHz 3rd OT
Adjustment tolerance	from ± 5 ppm at +25°C, frequency dependant
Temperature tolerance	from ± 5 ppm, frequency and temperature range dependant
Operating temperature	(-10 +60)°C ~ (-40 +85)°C
Storage temperature	(-40 +85)°C min. ~ (-55 +125)°C max.
Load	customer specified
Shunt capacitance	7.0pF max.
Drive level	10 μ W typical, 100 μ W max.
Ageing	± 1 ppm ~ ± 3 ppm max. per year
Insulation resistance	500M Ω min. at 100Vd.c.

Ordering information

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

TFC PART NUMBER XR 13.00M H B B I

'XR' crystal series: XR

'13.00M' frequency: 13.00M = 13.00MHz, frequency range from (9.60 ~ 125)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, F: 16pF,
G: 18pF, H: 20pF, I: 30pF, J: 32pF, S: series

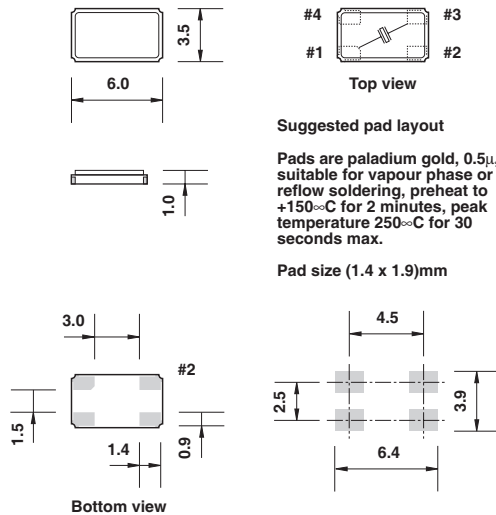
Adjustment tolerance A: ± 5 ppm, B: ± 10 ppm, P: ± 15 ppm, C: ± 20 ppm, E: ± 30 ppm, G: ± 50 ppm, H: ± 100 ppm

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

XR miniature smd crystal

XR dimensions(mm) shown twice full size



Suggested pad layout

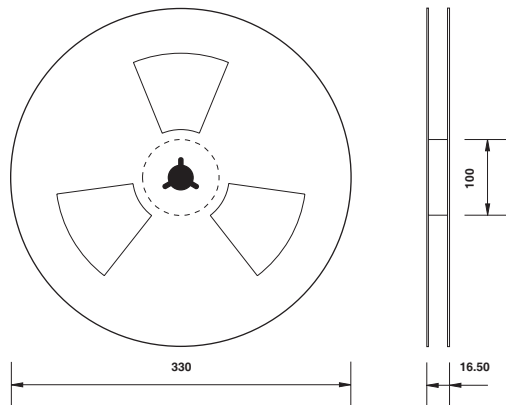
Pads are palladium gold, 0.5 μ m, suitable for vapour phase or reflow soldering, preheat to +150 \pm C for 2 minutes, peak temperature 250 \pm C for 30 seconds max.

Pad size (1.4 x 1.9)mm

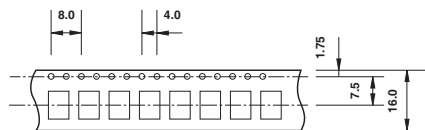
ESR - equivalent series resistance

frequency range(MHz)	cut/mode	esr(Ω)
9.60 ~ <12.0	AT1	<80
12.0 ~ <13.0	AT1	<60
13.0 ~ <19.0	AT1	<60
19.0 ~ <20.0	AT1	<40
20.0 ~ <30.0	AT1	<40
30.0 ~ 49.0	AT1	<40
30.0 ~ <40.0	AT3	<100
40.0 ~ <50.0	AT3	<80
50.0 ~ 125.0	AT3	<40

Standard tape and reel dimensions



Centre hole diameter 13.0mm, slot width 2mm spaced at 120 \pm
Reel quantity 5000 pieces, leader tape 400mm minimum
Trailer tape: 10 empty compartments minimum



Tape transport hole diameter 1.5mm, 4.0mm pitch
Compartment size 3.95mm x 6.5mm, depth 1.35mm
Component spacing on 8.0mm pitch

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 S = specification code