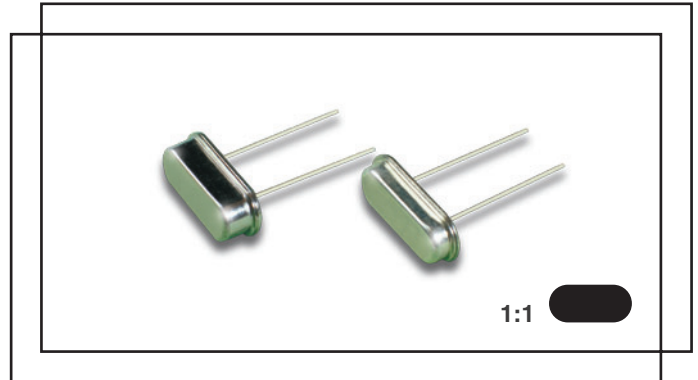


U3/U4 low profile crystal (3.50 ~ 90)MHz

- # low profile package
- # AT and BT cut
- # low cost
- # standard and custom frequencies



Electrical specification

Case style
Frequency range
Adjustment tolerance
Temperature tolerance
Operating temperature
Storage temperature
Load
Shunt capacitance C_0
Drive level
Q factor
Ageing
Insulation resistance

U3: height 2.50mm, U4: height 3.51mm
 (3.50 ~ 90.0)MHz, fundamental to 32.0MHz
 from ± 5 ppm at $+25^\circ\text{C}$, frequency dependent
 from ± 5 ppm, frequency and temperature range dependent
 $(-10 +60)^\circ\text{C} \sim (-40 +85)^\circ\text{C}$
 $(-40 +85)^\circ\text{C}$
 customer specified
 7.0pF max.
 $10\mu\text{W} \sim 5\text{milli.W}$
 80,000 typical
 ± 5 ppm first year max.
 500Meg. ohm min. at $+100\text{Vd.c.}$

Ordering information

The U3 and U4 type of 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 U3 crystal, 10.00MHz, load 20pF, ± 20 ppm at $+25^\circ\text{C}$, ± 50 ppm $(-10 +60)^\circ\text{C}$

TFC PART NUMBER XO 10.00M H C G I

'XO' crystal series: XO = U3, XI = U4

'10.00M' frequency: 10.00M = 10.00MHz, frequency range from (3.50 ~ 90)MHz

'H' load capacitance: H = 20pF

'C' adjustment tolerance at $+25^\circ\text{C}$: C = ± 20 ppm

'G' temperature tolerance: G = ± 50 ppm

'I' temperature range: I = $(-10 +60)^\circ\text{C}$

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

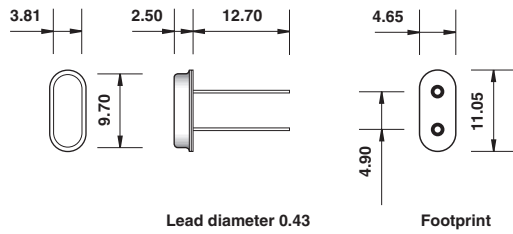
Adjustment tolerance A: ± 5 ppm, B: ± 10 ppm, C: ± 20 ppm, E: ± 30 ppm, G: ± 50 ppm, H: ± 100 ppm, P: ± 15 ppm

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

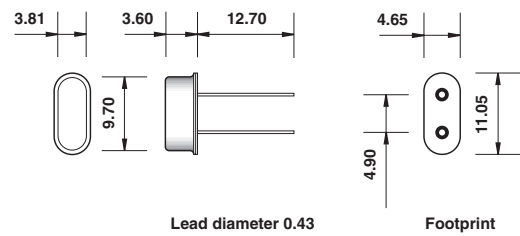
Temperature range B: $(0 +55)^\circ\text{C}$, I: $(-10 +60)^\circ\text{C}$, C: $(-20 +70)^\circ\text{C}$, L: $(-40 +85)^\circ\text{C}$

U3/U4 low profile crystal

U3 dimensions(mm)



U4 dimensions(mm)



ESR - equivalent series resistance

frequency range(MHz)	cut/mode	esr(Ω)
(3.50 ~ 4.0)	AT1	<140
(4.0 ~ 5.0)	AT1	<120
(5.0 ~ 6.0)	AT1	<80
(6.0 ~ 7.0)	AT1	<70
(7.0 ~ 9.0)	AT1	<45
(9.0 ~ 13.0)	AT1	<40
(13.0 ~ 16.0)	AT1	<35
(16.0 ~ 20.0)	AT1	<30
(20.0 ~ 24.0)	AT1	<25
(24.0 ~ 32.0)	AT3	<120
(32.0 ~ 80.0)	AT3	<80
(24.0 ~ 40.0)	BT1	<30