

Low Profile Holder Type Crystal Units



FEATURES

- Low cost
- Industry standard
- Wide frequency range
- Excellent aging
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

This part is a miniature AT cut strip crystal unit with a low profile package. It is with resistance weld.

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	3.579545	-	66.000
Frequency tolerance	$\Delta F/F_0$	At 25 °C	ppm	-	$\pm 10, \pm 15, \pm 20, \pm 25, \pm 30$	-
Temperature stability	T_C	Ref. to 25 °C	ppm	-	$\pm 20, \pm 25, \pm 30, \pm 35, \pm 50, \pm 100$	-
Operating temperature range	T_{OPR}		°C	-10	-	+70
Storage temperature range	T_{STG}		°C	-55	-	+125
Shunt capacitance	C_0		pF	-	-	7
Load capacitance	C_L	Customer specified	pF	10	-	Series
Insulation resistance	I_R	100 V _{DC}	MΩ	500	-	-
Drive level	D_L		μW	-	100	500
Aging (first year)	F_a	At 25 °C, per year	ppm	-5	-	+5

EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)					
FREQUENCY RANGE (MHz)	MAX. ESR (Ω)	MODE	FREQUENCY RANGE (MHz)	MAX. ESR (Ω)	MODE
3.579 to 3.999	200	Fundamental / AT	10.000 to 13.999	80	Fundamental / AT
4.000 to 4.999	150	Fundamental / AT	14.000 to 39.999	50	Fundamental / AT
5.000 to 5.999	120	Fundamental / AT	40.000 to 66.000	80	3 rd overtone
6.000 to 9.999	100	Fundamental / AT	-	-	-

DIMENSIONS in inches [millimeters]	
<p>0.403 [10.24] max. 0.500 [12.7] min. 0.192 ± 0.008 [4.88 ± 0.2]</p>	<p>0.150 [3.81] max. 0.138 [3.5] max. Ø 0.017 ± 0.002 [0.43 ± 0.05]</p>
<p>0.435 [11.05] max. 0.183 [4.65] max.</p>	



PART NUMBER CONFIGURATIONS (to be used on all New Designs)

X T	9 S	2 0	A	J	R	G	X	8 M 1 9 2	E
Crystal	Package / Size 9S	Load Cap. 20 = std. SE = series	Pack Code A = bulk	Freq. Tolerance G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm I = ± 15 ppm J = ± 10 ppm	Operating Temp. S = -10 °C to +70 °C R = -40 °C to +85 °C	Temp. Stability C = ± 100 ppm D = ± 50 ppm F = ± 35 ppm G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm	Options X = no options Contact factory for available options	Frequency Use "M" as decimal place holder Frequency must be five digits - complete with "0" at the end	Lead (Pb)-free E = lead (Pb)-free

Previous / legacy part number information: still valid for existing designs;
all New Designs should use the new part configuration above

PREVIOUS / LEGACY GLOBAL PART NUMBERING

X T 9 S	2 0	A	N A	4 0 M	
MODEL NUMBER XT9S = XT49S	LOAD CAPACITANCE 18 = 18 pF 20 = 20 pF NL = series to be specified by customer	PACKAGE CODE Tape and reel H = RF7 (XT9M) Bulk A = B04 (all models)	OPTIONS NA = no additional options RR = extended temperature of -40 °C to +85 °C Contact factory for all other options	FREQUENCY 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency	
XT49S MODEL	R OTR blank = standard R = -40 °C to +85 °C	-20 LOAD blank = series -16 = 16 pF -20 = 20 pF standard -30 = 30 pF -32 = 32 pF	SP OPTIONS blank = standard SP = spacer SL = sleeve	12M FREQUENCY/MHz	e2 JEDEC® LEAD (Pb)-FREE STANDARD



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