

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.

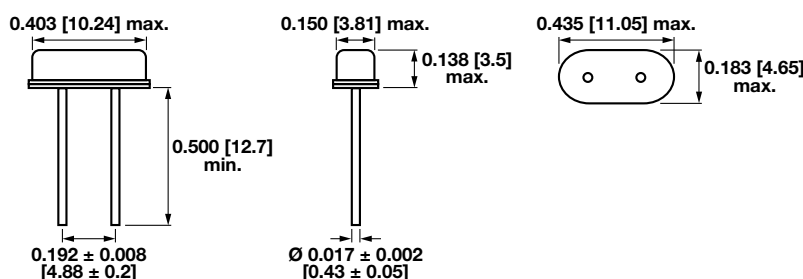
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F _O		MHz	3.579545	-	66.000
Frequency tolerance	ΔF/F _O	At 25 °C	ppm	-	± 10, ± 15, ± 20, ± 25, ± 30	-
Temperature stability	T _C	Ref. to 25 °C	ppm	-	± 20, ± 25, ± 30, ± 35, ± 50, ± 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)	Fa	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]



**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		Load Cap.		Pack Code	Freq. Tolerance	Operating Temp.	Temp. Stability	Options		Frequency				Lead (PB)-free
		9S		20 = std. SE = series		A = bulk	G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm I = ± 15 ppm J = ± 10 ppm	S = -10 °C to +70 °C R = -40 °C to +85 °C	C = ± 100 ppm D = ± 50 ppm F = ± 35 ppm G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm	X = no options Contact factory for available options		Use "M" as decimal place holder Frequency must be five digits - complete with "0" at the end				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				LOAD CAPACITANCE		PACKAGE CODE	OPTIONS		FREQUENCY		
XT9S = XT49S				18 = 18 pF 20 = 20 pF NL = series to be specified by customer		Tape and reel H = RF7 (XT9M) Bulk A = B04 (all models)	NA = no additional options RR = extended temperature of -40 °C to +85 °C Contact factory for all other options		4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency		
XT49S	R	-20	SP	12M		e2					
MODEL	OTR	LOAD	OPTIONS	FREQUENCY/MHz		JEDEC® LEAD (Pb)-FREE STANDARD					
	blank = standard R = -40 °C to +85 °C	blank = series -16 = 16 pF -20 = 20 pF standard -30 = 30 pF -32 = 32 pF	blank = standard SP = spacer SL = sleeve								



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