

## 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](http://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.

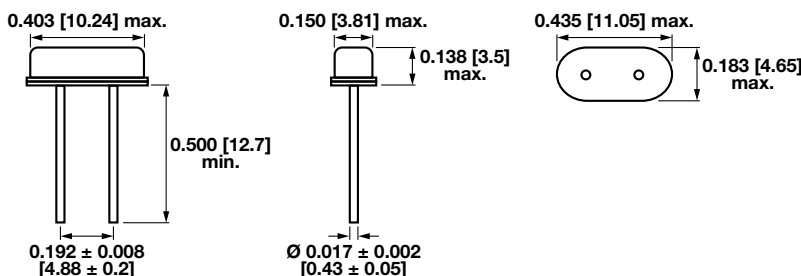
### STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	$F_O$		MHz	3.579545	-	66.000
Frequency tolerance	$\Delta F/F_O$	at 25 °C	ppm	-30	-	+30
Temperature stability	$T_C$	ref. to 25 °C	ppm	-50	-	+50
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 <sub>DC</sub>	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 <sup>rd</sup> overtone
6.000 to 9.999	100	fundamental/AT			

### DIMENSIONS in inches [millimeters]



**ORDERING INFORMATION****XT49S****R****-20****SP****12M****e2**

MODEL

OTR

LOAD

OPTIONS

FREQUENCY/MHz

JEDEC® LEAD (Pb)-FREE  
STANDARDblank = standard  
R = -40 °C to +85 °Cblank = series  
-16 = 16 pF  
-20 = 20 pF standard  
-30 = 30 pF  
-32 = 32 pFblank = standard  
SP = spacer  
SL = sleeve**GLOBAL PART NUMBER**

X

T

9

S

MODEL

2

0

LOAD

A

PACKAGE  
CODE

N

A

OPTION

1

2

M

FREQUENCY

**GLOBAL PART NUMBERING**

X

T

9

S

**MODEL NUMBER**XT9S = XT49S  
XT9M = XT49M  
XTU1 = XTUM1

2

0

**LOAD  
CAPACITANCE**18 = 18 pF  
20 = 20 pF  
NL = series  
to be specified by  
customer

A

**PACKAGE  
CODE****Tape and reel**  
H = RF7 (XT9M)**Bulk**  
A = B04  
(all models)

N

A

**OPTIONS**NA = no additional  
options  
RR = extended  
temperature  
of -40 °C to +85 °C  
Contact factory for  
all other options

4

0

M

**FREQUENCY**4M = 4 MHz  
40M = 40 MHz  
100M = 100 MHz  
12M288 = 12.288 MHz  
M is used as  
decimal place  
holder in frequency

Example: XT49S-20 40M

X

T

3

6

**MODEL NUMBER**XT46 = XT46C  
XT36 = XT36C

2

0

**LOAD CAPACITANCE**18 = 18 pF  
20 = 20 pF  
NL = series  
to be specified by  
customer

A

**PACKAGE  
CODE****Tape and reel**  
H = RF7**Bulk**  
A = B04  
(all models)

1

2

M

**FREQUENCY**4M = 4 MHz  
40M = 40 MHz  
100M = 100 MHz  
12M288 = 12.288 MHz  
M is used as  
decimal place  
holder in frequency

Example: XT36C-20 12M



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