



# **Low Profile SMD Type Crystal Units**



This part is a miniature AT cut strip crystal unit packaged for surface mounting.

#### **FEATURES**

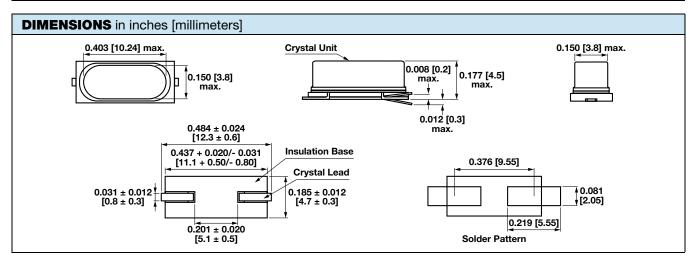
- Low cost
- Industry standard
- Wide frequency range
- · Excellent aging
- Surface mount
- Compliant to RoHS directive 2002/95/EC



ROHS COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	Fo		MHz	3.579545	-	66.000
Frequency tolerance	ΔF/F <sub>O</sub>	at 25 °C	ppm	- 30	-	+ 30
Temperature stability	T <sub>C</sub>	ref. to 25 °C	ppm	- 50	-	+ 50
Operating temperature range	T <sub>OPR</sub>		°C	- 10	-	+ 70
Storage temperature range	T <sub>STG</sub>		°C	- 55	-	+ 125
Shunt capacitance	C <sub>0</sub>		pF	-	-	7
Load capacitance	C <sub>L</sub>	customer specified	pF	10	-	series
Insulation resistance	I <sub>R</sub>	100 V <sub>DC</sub>	MΩ	500	-	-
Drive level	D <sub>L</sub>		μW	-	100	500
Aging	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 ( $\Omega$ )	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 66.999	80	3 <sup>rd</sup> overtone		
6.000 to 9.999	100	fundamental/AT					



Document Number: 35012 Revision: 19-Mar-10 For technical questions, contact: <a href="mailto:frequency@vishay.com">frequency@vishay.com</a>

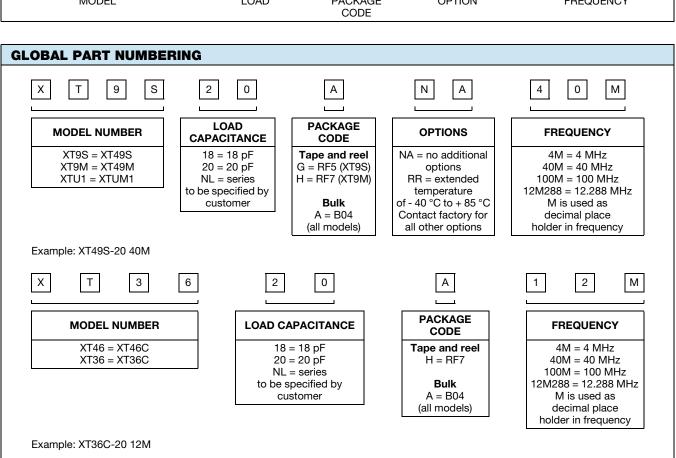
Vishay Dale

### Low Profile SMD Type Crystal Units



ORDERING INFORMATION						
XT49M	R	-20	20M	e2		
MODEL	OTR blank = standard R = - 40 °C to + 85 °C	LOAD blank = series -20 = 20 pF -30 = 30 pF -32 = 32 pF	FREQUENCY/MHz	JEDEC LEAD (Pb)-FREE STANDARD		

GLOBAL PART NUMBER				
X T 9 M	2 0	A PACKAGE	N A OPTION	2 0 M
WOBEL	LOAD	CODE	OI HON	THEQUENCT



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Vishay

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