

Low Profile SMD Type Crystal Units



FEATURES

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


RoHS
COMPLIANT

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

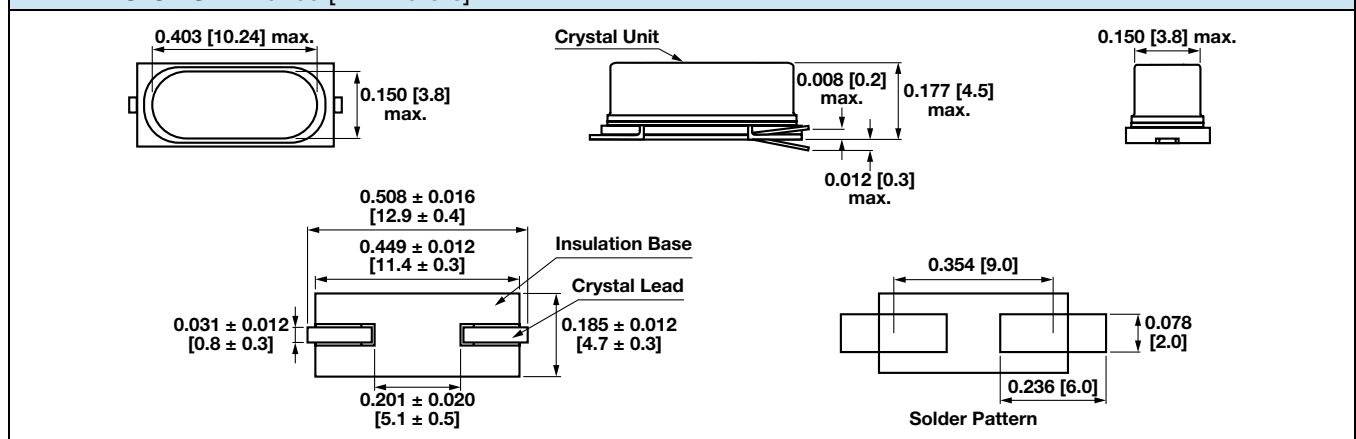
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	3.200	-	66.000
Frequency tolerance	$\Delta F/F_0$	at 25 °C	ppm	± 10	± 30	± 50
Temperature stability	T_C	ref. to 25 °C	ppm	± 10	± 30	± 50
Operating temperature range	T_{OPR}		°C	- 20	-	+ 70
Storage temperature range	T_{STG}		°C	- 40	-	+ 85
Shunt capacitance	C_0		pF	-	-	7
Load capacitance	C_L	customer specified	pF	10	-	series
Insulation resistance	I_R	100 V _{DC}	M Ω	500	-	-
Drive level	D_L		μ W	-	100	500
Aging	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
3.200 to 4.499	150	fundamental/AT	9.000 to 9.999	60	fundamental/AT
4.500 to 5.999	120	fundamental/AT	10.000 to 12.999	50	fundamental/AT
6.000 to 6.999	100	fundamental/AT	13.000 to 29.999	40	fundamental/AT
7.000 to 7.999	90	fundamental/AT	30.000 to 66.000	80	3 rd overtone
8.000 to 8.999	80	fundamental/AT			

DIMENSIONS in inches [millimeters]





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			
MODEL				2	0	
				LOAD		
				A		
				PACKAGE CODE		
				N	A	
				OPTION		
				2	0	M
				FREQUENCY		

GLOBAL PART NUMBERING									
X	T	9	S						
MODEL NUMBER				2	0				
XT9U = XT49U XT9S = XT49S XT9SL = XT49SL XT9M = XT49M XT9ML = XT49ML XTU1 = XTUM1				LOAD CAPACITANCE					
				18 = 18 pF 20 = 20 pF NL = series to be specified by customer					
				A					
				PACKAGE CODE					
				Tape and reel G = RF5 (XT9U, XT9S, XT9SL) H = RF7 (XT9M, XT9ML) 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	2	6	T					
MODEL NUMBER									
XT26T = XT26T XT38T = XT38T									
T									
OPERATING TEMPERATURE (OTR)									
T = - 10 °C to + 60 °C									
A									
PACKAGE CODE									
Bulk A = B04 (all models)									
3					2	K	7	6	8
					FREQUENCY				
					32K768 = 32.768 kHz K is used as decimal place holder in frequency				
Example: XT26T 32.768K									
X	T	5	7						
MODEL NUMBER				2	0				
XT57 = XT57C XT46 = XT46C XT36 = XT36C				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)					
				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: XT57C-20 40M									



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