

Quartz Crystals



FEATURES

- Ultra-miniature size: 3.2 x 2.5 x 0.8 (mm)
- Wide frequency range
- Seam sealing
- Emboss taping
- Compliant to RoHS Directive 2002/95/EC


RoHS
COMPLIANT

The XT23 is a miniature SMD crystal with 3.2 x 2.5 (mm) ceramic package and a height of 0.8 mm. 12 MHz to 25 MHz frequency makes it widely applied in PDA, GPS, MP3, PCMCIA, bluetooth, and portable instruments.

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_O		MHz	12.000	-	25.000
Frequency tolerance	$\Delta F/F_O$	at 25 °C	ppm	-	± 30	-
Temperature stability	T_C	ref. to 25 °C	ppm	-	± 50	-
Operating temperature range	T_{OPR}		°C	0	-	+ 70
Storage temperature range	T_{STG}		°C	- 55	-	+ 125
Shunt capacitance	C_0		pF	-	-	3
Load capacitance	C_L	customer specified	pF	10	-	series
Insulation resistance	I_R	100 V _{DC}	MΩ	500	-	-
Drive level	D_L		μW	10	100	300
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
12.000 to 12.999	100	fundamental
13.000 to 19.999	80	fundamental
20.000 to 25.000	70	fundamental

DIMENSIONS in inches [millimeters]	
	<p>Recommended Solder Pattern</p>
<p>Note Pin #2 and pin #4 are connected through cover, in case connected to GND. Frequency might be drifted.</p>	



ORDERING INFORMATION			
XT23 MODEL	-20 LOAD blank = series -20 = 20 pF -32 = 32 pF -16 = 16 pF	25M FREQUENCY/MHz	e4 JEDEC LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER													
<table border="1"> <tr><td>X</td><td>T</td><td>2</td><td>3</td></tr> </table> MODEL	X	T	2	3	<table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD	2	0	<table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE	A	<table border="1"> <tr><td>2</td><td>5</td><td>M</td></tr> </table> FREQUENCY	2	5	M
X	T	2	3										
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GLOBAL PART NUMBERING																
<table border="1"> <tr><td>X</td><td>T</td><td>9</td><td>S</td></tr> </table> MODEL NUMBER XT9S = XT49S XT9M = XT49M XTU1 = XTUM1	X	T	9	S	<table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD CAPACITANCE 18 = 18 pF 20 = 20 pF NL = series to be specified by customer	2	0	<table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE Tape and reel G = RF5 (XT9S) H = RF7 (XT9M) Bulk A = B04 (all models)	A	<table border="1"> <tr><td>N</td><td>A</td></tr> </table> OPTIONS NA = no additional options RR = extended temperature of - 40 °C to + 85 °C Contact factory for all other options	N	A	<table border="1"> <tr><td>4</td><td>0</td><td>M</td></tr> </table> FREQUENCY 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency	4	0	M
X	T	9	S													
2	0															
A																
N	A															
4	0	M														
Example: XT49S-20 40M																
<table border="1"> <tr><td>X</td><td>T</td><td>3</td><td>6</td></tr> </table> MODEL NUMBER XT46 = XT46C XT36 = XT36C XT35 = XT35 XT23 = XT23	X	T	3	6	<table border="1"> <tr><td>2</td><td>0</td></tr> </table> LOAD CAPACITANCE 18 = 18 pF 20 = 20 pF NL = series to be specified by customer	2	0	<table border="1"> <tr><td>A</td></tr> </table> PACKAGE CODE Tape and reel H = RF7 Bulk A = B04 (all models)	A	<table border="1"> <tr><td>1</td><td>2</td><td>M</td></tr> </table> FREQUENCY 4M = 4 MHz 40M = 40 MHz 100M = 100 MHz 12M288 = 12.288 MHz M is used as decimal place holder in frequency	1	2	M			
X	T	3	6													
2	0															
A																
1	2	M														
Example: XT36C-20 12M																



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