

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	

Low Profile SMD Type Crystal Units



FEATURES

- Low cost
- Industry standard
- Wide frequency range
- Excellent aging
- Surface-mount


RoHS
COMPLIANT

Note

- Not compatible with vapor phase reflow mounting
- This part is a miniature AT cut strip crystal unit packaged for surface mounting.

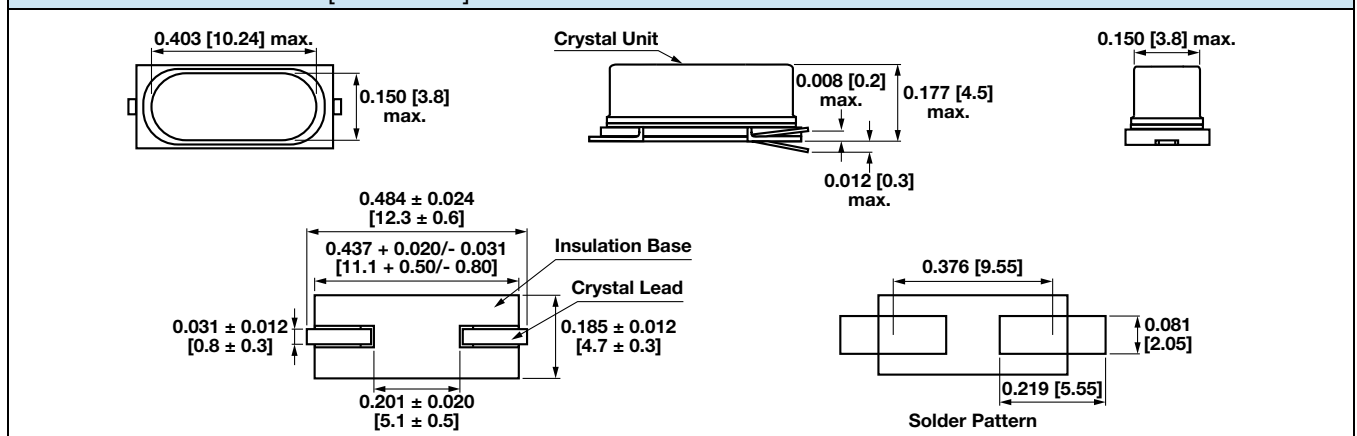
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	3.579545	-	66.000
Frequency tolerance	$\Delta F/F_0$	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 _{DC}	MΩ	500	-	-
Drive level	D_L		μW	-	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
3.579 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 rd overtone
6.000 to 9.999	100	Fundamental/AT			

DIMENSIONS in inches [millimeters]

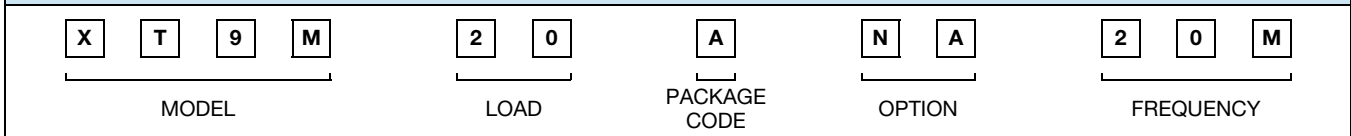




ORDERING INFORMATION

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

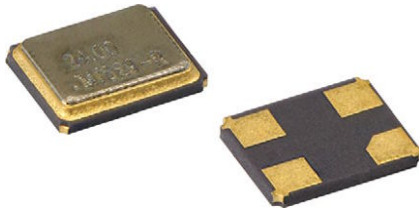
GLOBAL PART NUMBER



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 XT9M = XT49M XTU1 = XTUM1						18 = 18 pF 20 = 20 pF NL = series to be specified by customer		Tape and reel G = RF5 (XT9S) 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		
Example: XT49S-20 40M													
X	T	3	6			2	0	A			1	2	M
MODEL NUMBER						LOAD CAPACITANCE		PACKAGE CODE			FREQUENCY		
XT46 = XT46C XT36 = XT36C						18 = 18 pF 20 = 20 pF NL = series to be specified by customer		Tape and reel H = RF7 Bulk A = B04 (all models)			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													

Quartz Crystals



FEATURES

- Ultra-miniature size: 3.2 x 2.5 x 0.8 (mm)
- Wide frequency range
- Seam sealing
- Emboss tapping


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 54 MHz frequency makes it widely applied in PDA, GPS, MP3, PCMCIA, bluetooth, and portable instruments.

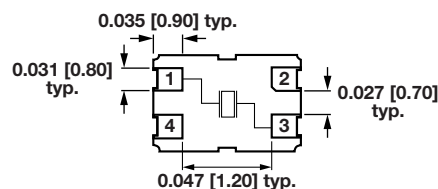
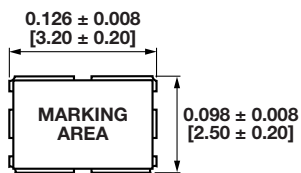
STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	12 000	-	54 000
Frequency tolerance	$\Delta F/F_0$	at 25 °C	ppm	-	± 30	-
Temperature stability	T_C	ref. to 25 °C	ppm	-	± 50	-
Operating temperature range	T_{OPR}		°C	-10	-	+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}	M Ω	500	-	-
Drive level	D_L		μ W	10	100	300
Aging	F_a	at 25 °C, per year	ppm	-5	-	+5

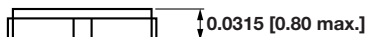
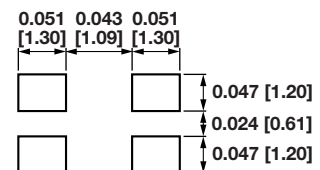
EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)

FREQUENCY RANGE (MHz)	MAX. ESR (Ω)	MODE
12.000 to 12.999	100	fundamental
13.000 to 19.999	80	fundamental
20.000 to 29.999	70	fundamental
30.000 to 54.000	50	fundamental

DIMENSIONS in inches [millimeters]



Recommended Solder Pattern



Note
Pin #2 and pin #4 are connected through cover, in case connected to GND. Frequency might be drifted.



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										
2	0												
A													
2	5	M											

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																

Quartz Crystals



FEATURES

- Ultra-miniature size: 5.0 x 3.2 x 0.8 (mm)
- Wide frequency range
- Seam sealing
- Emboss taping
- Compliant to RoHS Directive 2002/95/EC


RoHS
COMPLIANT

The XT35 is a miniature SMD crystal with 5.0 x 3.2 (mm) ceramic package and a height of 0.8 mm. 12 MHz to 25 MHz frequency makes it widely applied in PDA, GPS, MP3, and portable instruments.

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	12.000	-	25.000
Frequency tolerance	$\Delta F/F_0$	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	-	-	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	10	50	100
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 19.999	80	fundamental
20.000 to 25.000	70	fundamental

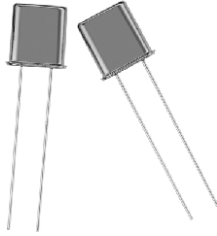
DIMENSIONS in inches [millimeters]	
	<p>Note Pin #2 and pin #4 are connected through cover, in case connected to GND. Frequency might be drifted.</p>

ORDERING INFORMATION			
XT35 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>3</td><td>5</td></tr> </table> MODEL	X	T	3	5	<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	3	5										
2	0												
A													
2	5	M											

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																

Resistance Welded Miniature Crystal Units



The XTUM-1 crystal unit is a miniature resistance welded package that provides excellent hermetic seal and frequency aging. The frequency range till 125 MHz and miniature size is ideal for communication equipment.

FEATURES

- Low cost
- Industry standard
- Small compact size
- Wide frequency range
- High stability
- “AT” cut crystal
- Compliant to RoHS directive 2002/95/EC



RoHS
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_O		MHz	10.000	-	125.000
Frequency tolerance	$\Delta F/F_O$	at 25 °C	ppm	-	± 10	± 50
Temperature stability	T_C	see Frequency Stability vs. Temperature Range	ppm	-	± 10	± 50
Operating temperature range	T_{OPR}		°C	-	-	-
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}	$M\Omega$	500	-	-
Drive level	D_L		μW	-	100	500
Aging	F_a	at 25 °C, per year	ppm	- 5	-	+ 5

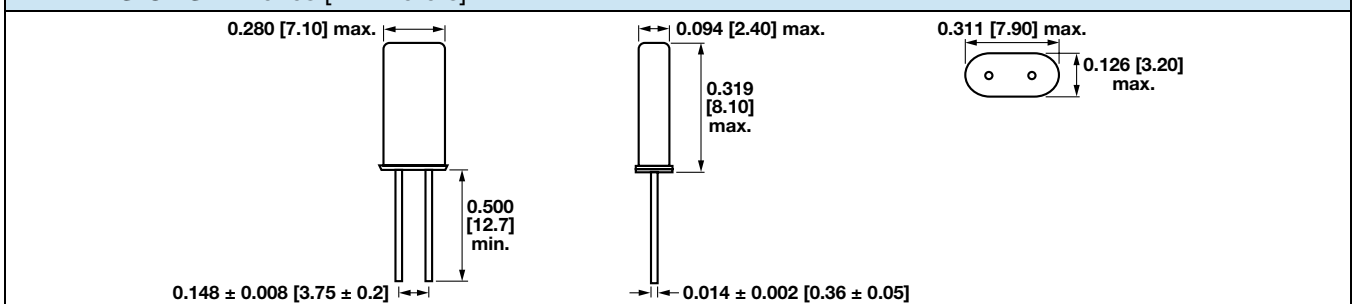
EQUIVALENT SERIES RESISTANCE (ESR) AND MODE OF VIBRATION (MODE)

FREQUENCY RANGE (MHz)	MAX. ESR (Ω)	MODE	FREQUENCY RANGE (MHz)	MAX. ESR (Ω)	MODE
10.000 to 12.999	60	fundamental	40.000 to 59.999	50	fundamental
13.000 to 19.999	40	fundamental	60.000 to 79.999	50	3 rd overtone
20.000 to 29.999	30	fundamental	80.000 to 125.000	100	5 th overtone
30.000 to 39.999	60	fundamental			

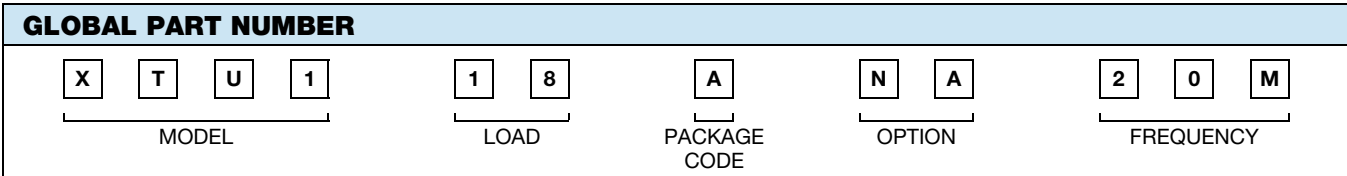
FREQUENCY STABILITY VS. TEMPERATURE RANGE (25 °C \pm 3 °C)

TEMPERATURE RANGE (°C)	FREQUENCY STABILITY (ppm)					
	± 5	± 10	± 15	± 20	± 30	± 50
0 to 50	x	x	x	x	x	x
- 10 to 60	x	x	x	x	x	x
- 20 to 70		x	x	x	x	x
- 40 to + 85				x	x	x

DIMENSIONS in inches [millimeters]



ORDERING INFORMATION			
XTUM1 MODEL	-18 LOAD blank = series -32 = 32 pF -18 = 18 pF standard	20M FREQUENCY/MHz	e2 JEDEC LEAD (Pb)-FREE STANDARD



GLOBAL PART NUMBERING

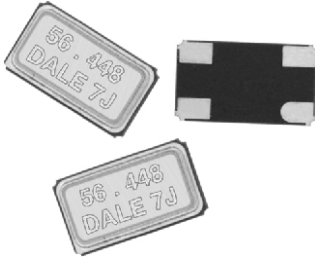
X	T	9	S	2	0	A	N	A	4	0	M
MODEL NUMBER				LOAD CAPACITANCE		PACKAGE CODE	OPTIONS		FREQUENCY		
XT9S = XT49S XT9M = XT49M XTU1 = XTUM1				18 = 18 pF 20 = 20 pF NL = series to be specified by customer		Tape and reel G = RF5 (XT9S) H = RF7 (XT9M) Bulk A = B04 (all models)	NA = no additional options RR = extended 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		

Example: XT49S-20 40M

X	T	3	6	2	0	A	1	2	M
MODEL NUMBER				LOAD CAPACITANCE		PACKAGE CODE	FREQUENCY		
XT46 = XT46C XT36 = XT36C				18 = 18 pF 20 = 20 pF NL = series to be specified by customer		Tape and reel H = RF7 Bulk A = B04 (all models)	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

Surface Mount Crystal



This part is an ultra miniature package with size of 6.0 mm x 3.5 mm x 1.0 mm. With its ceramic base and metal cover it provides the durability and reliability necessary for strenuous process like infrared and vapor phase reflow.

FEATURES

- Ultra-miniature size: 6.0 x 3.5 x 1.0 (mm)
- Seam sealing
- Ceramic package
- Emboss taping
- Reflow soldering
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_0		MHz	10.000	-	30.000
Frequency tolerance	$\Delta F/F_0$	at 25 °C	ppm	-	± 30	-
Temperature stability	T_C	ref. to 25 °C	ppm	-	± 30	-
Operating temperature range	T_{OPR}		°C	- 10	-	+ 60
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	-	10	100
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
10.000 to 11.999	60	fundamental	19.000 to 19.999	40	fundamental
12.000 to 12.099	50	fundamental	20.000 to 29.999	35	fundamental
13.000 to 18.999	45	fundamental	30.000	30	fundamental

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

ORDERING INFORMATION			
XT46C MODEL	-20 LOAD blank = series -20 = 20 pF standard -32 = 32 pF	25M FREQUENCY/MHz	e4 JEDEC LEAD (Pb)-FREE STANDARD

GLOBAL PART NUMBER													
<table border="1"> <tr><td>X</td><td>T</td><td>4</td><td>6</td></tr> </table> MODEL	X	T	4	6	<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	4	6										
2	0												
A													
2	5	M											

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	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																

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Казань (843)206-01-48	Новокузнецк (3843)20-46-81	Смоленск (4812)29-41-54
Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астрахань (8512)99-46-04	Калуга (4842)92-23-67	Омск (3812)21-46-40	Ставрополь (8652)20-65-13
Барнаул (3852)73-04-60	Кемерово (3842)65-04-62	Орел (4862)44-53-42	Сургут (3462)77-98-35
Белгород (4722)40-23-64	Киров (8332)68-02-04	Оренбург (3532)37-68-04	Тверь (4822)63-31-35
Брянск (4832)59-03-52	Краснодар (861)203-40-90	Пенза (8412)22-31-16	Томск (3822)98-41-53
Владивосток (423)249-28-31	Красноярск (391)204-63-61	Пермь (342)205-81-47	Тула (4872)74-02-29
Волгоград (844)278-03-48	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Вологда (8172)26-41-59	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Воронеж (473)204-51-73	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
Иваново (4932)77-34-06	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
Ижевск (3412)26-03-58	Набережные Челны (8552)20-53-41	Севастополь (8692)22-31-93	Череповец (8202)49-02-64
Иркутск (395)279-98-46	Нижний Новгород (831)429-08-12	Симферополь (3652)67-13-56	Ярославль (4852)69-52-93
Россия (495)268-04-70	Киргизия (996)312-96-26-47	Казахстан (7172)727-132	