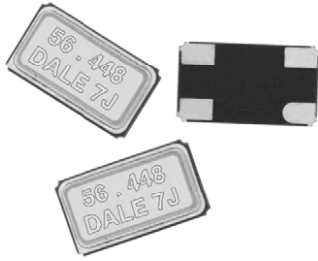


Surface-Mount Crystal



FEATURES

- Ultra-miniature size: 6.0 x 3.5 x 1.0 (mm)
- Seam sealing
- Ceramic package
- Emboss tapping
- Reflow soldering
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

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.

STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_O		MHz	10.000	-	30.000
Frequency tolerance	$\Delta F/F_O$	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}	MΩ	500	-	-
Drive level	D_L		μW	-	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>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>	



PART NUMBER CONFIGURATIONS (to be used on all New Designs)

X	T	4	6	C	2	0	H	J	R	G	X	8	M	1	9	2	E
Crystal	Package / Size	Load Cap.	Pack Code	Freq. Tolerance	Operating Temp.	Temp. Stability	Options	Frequency	Lead (Pb)-free								
	46 C	20 = std. SE = series	A = bulk H = tape and reel	G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm I = ± 15 ppm J = ± 10 ppm	S = -10 °C to +70 °C R = -40 °C to +85 °C	C = ± 100 ppm D = ± 50 ppm F = ± 35 ppm G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm	X = no options Contact factory for available options	Use "M" as decimal place holder Frequency must be five digits - complete with "0" at the end	E = lead (Pb)-free								

Previous / legacy part number information: still valid for existing designs;
all New Designs should use the new part configuration above

PREVIOUS / LEGACY GLOBAL PART NUMBERING

X	T	9	S	2	0	A	N	A	4	0	M
MODEL NUMBER				LOAD CAPACITANCE		PACKAGE CODE		OPTIONS		FREQUENCY	
XT9C = XT49C				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		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	
XT49C MODEL				-20 LOAD blank = series -20 = 20 pF standard -32 = 32 pF				25M FREQUENCY/MHz		e4 JEDEC® LEAD (Pb)-FREE STANDARD	



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