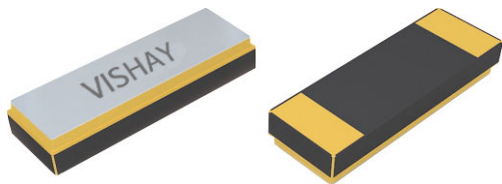


Surface-Mount Crystal



The XT13 series is an ultra miniature package crystal with dimensions 3.2 mm x 1.5 mm x 0.70 mm. It is primarily used in miniature applications such as mobile communications, gaming, bluetooth, wearable health products, portable test equipment, and size limited products.

FEATURES

- Size: 3.2 x 1.5 x 0.8 (mm)
- Ultra small SMD package
- Tuning fork crystal
- Frequency: 32.768 kHz
- Tape and reel packaging
- Material categorization:
for definitions of compliance please see www.vishay.com/doc?99912

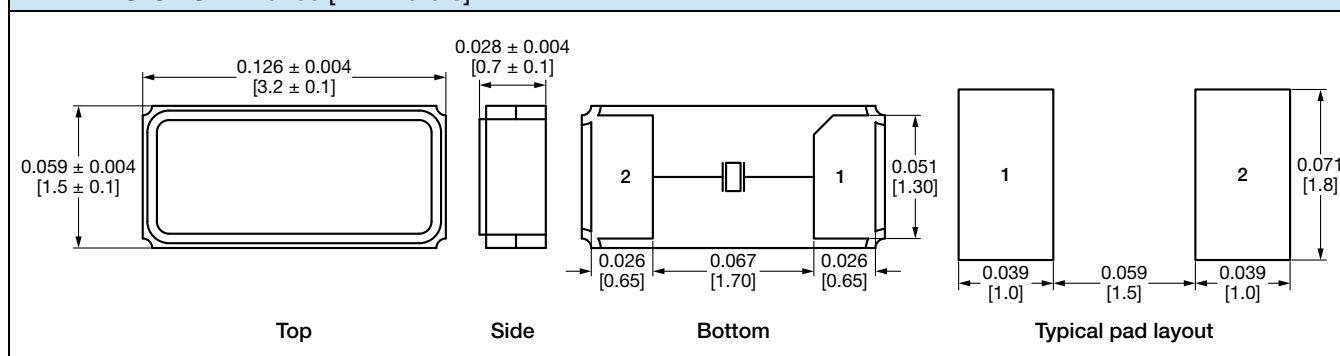


RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	UNIT	MIN.	TYP.	MAX.
Frequency range	F_O		kHz	-	32.768	-
Frequency tolerance	$\Delta F/F_O$	At 25 °C	ppm	-	± 20	-
Turnover temperature			°C	-	25 ± 5	-
Temperature coefficient			ppm/°C ²	-	-0.036 ± 0.005	-
Operating temperature range	T_{OPR}	Standard	°C	0	-	+70
		Optional	°C	-40	-	+85
Storage temperature range	T_{STG}		°C	-55	-	+125
Shunt capacitance	C_0		pF	-	-	1.5
Load capacitance	C_L	Customer specified	pF	-	7, 9, or 12.5	-
Insulation resistance	I_R	100 V _{DC}	MΩ	500	-	-
Equivalent series resistance	ESR		kΩ	-	-	70
Drive level	D_L		μW	-	10	200
Aging	F_a	At 25 °C, per year	ppm	-3	-	+3

DIMENSIONS in inches [millimeters]





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

X	T	1	3	0	9	H	G	R	X	X	3	2	K	7	6	E
Crystal		Package / Size		Load. Cap.		Pack Code	Freq. Tolerance	Operating Temp.		Options	Frequency					Lead (PB)-free
		13		09 = std. SE = series		H = tape and reel	G = ± 30 ppm E = ± 25 ppm H = ± 20 ppm I = ± 15 ppm J = ± 10 ppm	S = -10°C to $+70^{\circ}\text{C}$ R = -40°C to $+85^{\circ}\text{C}$		X = no options Contact factory for available options	Use "K" as decimal place holder Frequency must be five digits - complete with "0" at the end					E = lead (Pb)-free

PART MARKING

Line 1:	V250 (frequency)
Line 2:	YWWA (date code / factory)



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