

CX8V-T1A

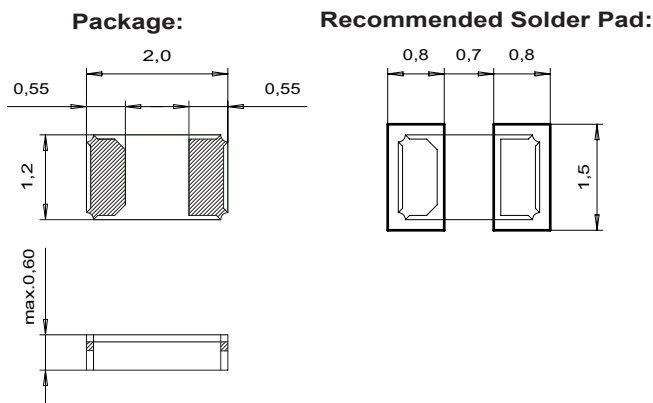
Tuning Fork Crystal 32.768 kHz



100% leadfree, RoHS - compliant

Smallest SMT ceramic package
Ultra low profile: 0.60 mm height
SMD-package in Tape and Reel
Ind. and Ext. temperature ranges
High stability
Low aging
Low power consumption
High shock and vibration resistance

DIMENSIONS



All dimensions in mm typical

DESCRIPTION:

This SMD ceramic package has been specially designed for miniature telecom and portable applications. The Ultra Miniature Tuning Fork (UMTF) in this product is achieved by a special manufacturing process, this technology leads to improved electrical characteristics.

For pick-and-place equipment, the parts are available in 8 mm tape:

- 7" (178 mm) reel with 1'000 crystals
- 7" (178 mm) reel with 3'000 crystals

ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency	¹⁾ F_L	32.768	kHz
Load capacitance	²⁾ C_L	7.0 / 9.0 / 12.5	pF
Frequency tolerance	³⁾ $\Delta F/F$	+/-20	ppm
	$\Delta F/F$	+/-100	ppm
Series resistance max.	R_s	90	k Ω
Motional capacitance typ.	C_1	3.5	fF
Static capacitance typ.	C_0	1.1	pF
Drive level max.	P	0.5	μ W
Insulation resistance min.	R_i	500	M Ω
Aging first year max.	$\Delta F/F$	+/-3	ppm
Turnover temperature	T_0	25 +/-5	°C
Frequency vs. temperature	$\Delta F/F_0$	$-0.035 \text{ ppm}/^\circ\text{C}^2 (T - T_0)^2 \text{ +/-10\%}$	ppm

- 1) Other frequencies on request.
- 2) Other load capacitances on request.
- 3) Tighter and wider frequency tolerances on request.

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies on request

ENVIRONMENTAL
CHARACTERISTICS:

		Conditions	Max. Dev.
Storage temp. range		−55 to +125°C	
Industrial operating temp. range		−40 to +85°C	
Extended operating temp. range		−55 to +125°C	
Shock resistance	ΔF/F	5000 g, 0.3 ms, ½ sine	+/-5 ppm
Vibration resistance	ΔF/F	20 g / 10–2000 Hz	+/-5 ppm

TERMINATIONS AND
PROCESSING:

Type	Termination	Processing
CX8V-T1A	For SMD mounting Au flashed pads	Reflow soldering 260°C / 20 s max.

PART NUMBER/
ORDERING INFORMATION
EXAMPLE:

<u>Crystal package</u> C = Crystal in ceramic package	<u>Package lid</u> X = Glas lid	<u>Package size</u> 8 = 2.0 x 1.2 x 0.60 mm	<u>Blank</u> V = Tuning fork	<u>Package pad form</u> A = Pads on both ends	<u>Pad plating</u> 1 = Au flashed pads	<u>Package type</u> T = For SMD mounting	<u>Frequency F_L</u> 32.768 kHz	<u>Load capacitance C_L</u> 9.0 pF	<u>Frequency tolerance</u> +/-20 ppm
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All specifications subject to change without notice. 10.09



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