

GRENCHEM, February 23rd , 2011

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TO : our valued customers

FAX: ++41 32 655 82 83

FAX Nr :

ATTN :

FROM : Juerg Kasser

SUBJECT: PCN # 18-2011

Change of glass lid to metal lid for CX8V size parts

Customer: to whom it may concern

Crystal Type: all tuning fork crystals in ceramic package, size CX8V

Other:

Date: February 23rd, 2011

Description of Change: Replace the glass lid of the CX8V parts to metal lid

Reason for Change:

History:

Micro Crystal's CX8V type parts have been covered with glass lid.

Driver for the change:

1. Glass lids can only be furnished by one supplier. There is the risk of capacity constraints. Metal lids can be furnished by several suppliers.
2. Metal lids can be laser marked, while this is not possible on glass lids.
3. It has been found that the electrical parameters of the CM8V part (with metal lid) are identical or superior to these of the CX8V part (glass lid part).
4. The mechanical strength of the CM8V part could be improved over the CX8V part, adding safety margin for rough handling processes in customers' lines.

Risk assessment:

1. Reduce bottlenecks of lid supply by introducing multiple sources.
2. Qualification has shown that parameters and behavior of CM8V parts are identical/superior in comparison to CX8V parts with glass lid.
3. Reliability of parts with metal lids has been proven to be superior to parts with glass lids.
4. The CM8V part is a drop-in replacement to the CX8V part. Only the lid has changed, there is no change to either the package or the blank.



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Form

Supplier PCN Requirement
Process Change Notification

Dat/Author 23.02.11 / JK

Nr. FO-2003-e-A

Dok. VA-2000

Change Classification:

Major:
Minor:

Major – A change that may result in an impact to the form, fit, function, or reliability of the end product
Minor – A change that does not result in an impact to the form, fit, function, or reliability of the end product

Planned Implementation Date: February / 2011

Planned Shipment Date: February / 2011 (gradual introduction)

Production Facility (-ies): Switzerland, Thailand, China

Shipment Logistics: through Switzerland

Remarks: change of part number. Part description: CM8V-T1A

Attachments (new spec, drawings etc): Appendix I: Data sheet of CM8V part

Best regards

Juerg Kasser

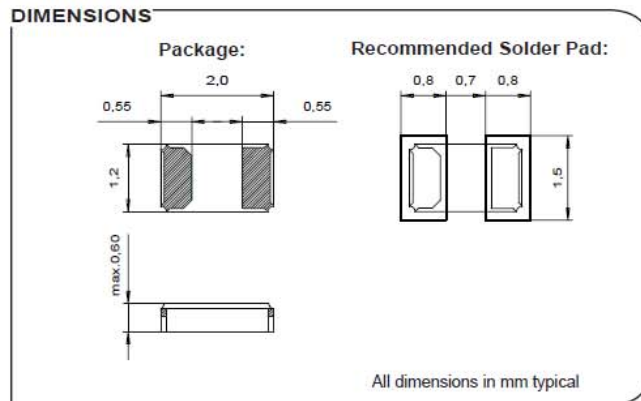
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Appendix I



CM8V-T1A

Tuning Fork Crystal 32.768 kHz



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

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
 13" (330 mm) reel with 14'000 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⁾ ΔF/F	+/-20	ppm
		+/-100	ppm
Series resistance max.	R _S	90	kΩ
Motional capacitance typ.	C ₁	3.5	fF
Static capacitance typ.	C ₀	1.0	pF
Drive level max.	P	0.5	μW
Insulation resistance min.	R _i	500	MΩ
Aging first year max.	ΔF/F	+/-3	ppm
Turnover temperature	T ₀	25 +/-5	°C
Frequency vs. temperature	ΔF/F ₀	-0.035 ppm/°C · (T - T ₀) ² +/-10%	ppm

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



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Nr. FO-2003-e-A

Dok. VA-2000

STANDARD FREQUENCIES:

Frequency kHz
32.768
Other frequencies on request

**ENVIRONMENTAL
 CHARACTERISTICS:**

	Conditions	Max. Dev.
Storage temp. range	-55 to +125°C	
TA Operating temperature range	-40 to +85°C	
Shock resistance	$\Delta F/F$ 5000 g, 0.3 ms, 1/2 sine	+/-5 ppm
Vibration resistance	$\Delta F/F$ 20 g / 10-2000 Hz	+/-5 ppm

**TERMINATIONS AND
 PROCESSING:**

Type	Termination	Processing
CM8V-T1A	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

**PRODUCT DESCRIPTION AND
 ORDERING INFORMATION:**

CM8V-T1A 32.768kHz 12.5pF +/-20ppm TA QC

Frequency F_0 _____

C_L Load Capacitance _____
 7.0 pF
 9.0 pF
 12.5 pF

Frequency tolerance _____
 +/- 20 ppm
 +/- 100 ppm

Temperature Range _____
 TA = -40 to 85°C (Standard)

Optional:
 if not defined,
 „Standard“ will apply

Qualification _____
 QC = Commercial (Standard)

A unique part number will be generated for each product specification, i.e:
 20xxx-MC01 1'000 pcs (in 8mm tape on 7" reel)
 20xxx-MC03 3'000 pcs (in 8mm tape on 7" reel)
 20xxx-PC14 14'000 pcs (in 8mm tape on 13" reel)
 Please contact us.

All specifications subject to change without notice.



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