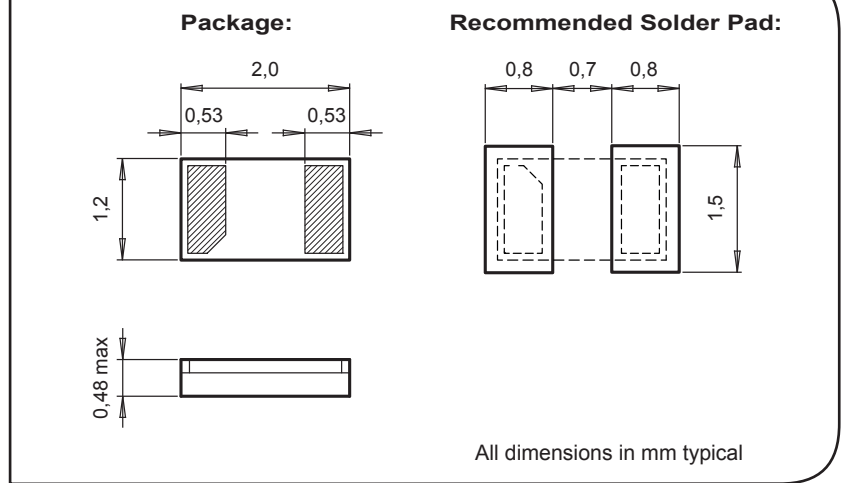


CC8V-T1A Thin Medical Tuning Fork Crystal 32.768 kHz



DIMENSIONS



APPLICATIONS

Pacemakers
Defibrillators
Neurostimulators
Cardiac Monitoring Devices
Implantable Drug Delivery Pumps
Infusion Pumps
Cochlear Implants
Smart Orthopedic Implants

DESCRIPTION

The CC8V-T1A Thin Medical Tuning Fork Crystal is manufactured specifically for use in implantable medical devices. Micro Crystal's long history in supplying medical grade timing devices ensures that the CC8V-T1A Thin Medical is produced in accordance with the highest quality production technologies. Long-term reliability is of utmost importance (Class III Implantable) and a hallmark of Micro Crystal's entire medical implantable grade portfolio.

MEDICAL IMPLANTABLE KEY FEATURES

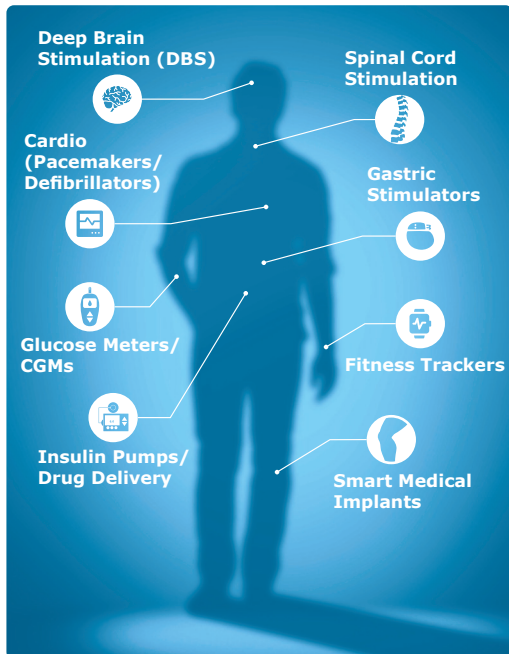
- Safe for Helium environment: Ceramic lid with gold-tin preform-seal for best long-term hermeticity and stability
- Proprietary manufacturing and testing processes
- Long-term aging stability
- Extended operating temperature range: -55°C to +125°C
- Customer specific testing/screening on request
- Components and manufacturing traceability records retained
- Ultra low profile (maximum height 0.48 mm), lightweight (3.5 mg)

ELECTRICAL CHARACTERISTICS AT 25°C

Standard Frequencies	¹⁾ F _L	32.768	kHz
Load capacitance	¹⁾ C _L	4.0 / 7.0 / 9.0 / 12.5	pF
Frequency tolerance	²⁾ ΔF/F	±20	ppm
Series resistance typ./max.	R _S	70 / 90	kΩ
Motional capacitance typ.	C ₁	4.7	fF
Static capacitance typ.	C ₀	1.2	pF
Drive level max.	P	0.5	μW
Insulation resistance min.	R _i	500	MΩ
Aging first year max.	ΔF/F	±2	ppm
Turnover temperature	T ₀	25 ±5	°C
Frequency vs. temperature	ΔF/F ₀	-0.035 ppm/°C ² (T - T ₀) ² ±10%	ppm

1) Other frequencies and load capacitances on request.

2) Other frequency tolerances on request.



STANDARD FREQUENCIES

Frequency
32.768 kHz
Other frequencies on request

ENVIRONMENTAL CHARACTERISTICS

		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C	
TB Extended oper. temp. range		-40 to +125°C	
TC Extended oper. 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
CC8V-T1A Thin	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC8V-T2A Thin	SnPb plated pads available only on request	
CC8V-T5A Thin	ENEPIG plated pads	

ORDERING INFORMATION

CC8V - T1A Thin 32.768 kHz 12.5 pF ±20 ppm TA QM

<p>Ceramic package _____</p> <p>Ceramic lid _____</p> <p>Package size _____ 8 = 2.0 x 1.2 x 0.48 mm</p> <p>Tuning fork _____</p> <p>SMT Package _____</p> <p>Pads _____ 1 = Au flashed pads 2 = SnPb plated pads on request 5 = ENEPIG plated pads</p> <p>Pads on both ends _____</p> <p>Special feature _____ Thin = Ultra low profile, 0.48 mm</p>	<p>Frequency F_L _____</p> <p>Load capacitance C_L _____ 4.0 pF 7.0 pF 9.0 pF 12.5 pF Other C_L on request</p> <p>Frequency tolerance _____ ±20 ppm Other freq. tolerances on request</p> <p>Temperature range _____ TA = -40 to +85°C TB = -40 to +125°C TC = -55 to +125°C</p> <p>Qualification _____ QM = Medical Grade</p>
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A unique part number will be generated for each product specification, i.e:	
20xxxx-MC00	yyy pcs (in 8 mm tape on 7" reel)
20xxxx-MC01	1'000 pcs (in 8 mm tape on 7" reel)
20xxxx-MC03	3'000 pcs (in 8 mm tape on 7" reel)

All specifications subject to change without notice.



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