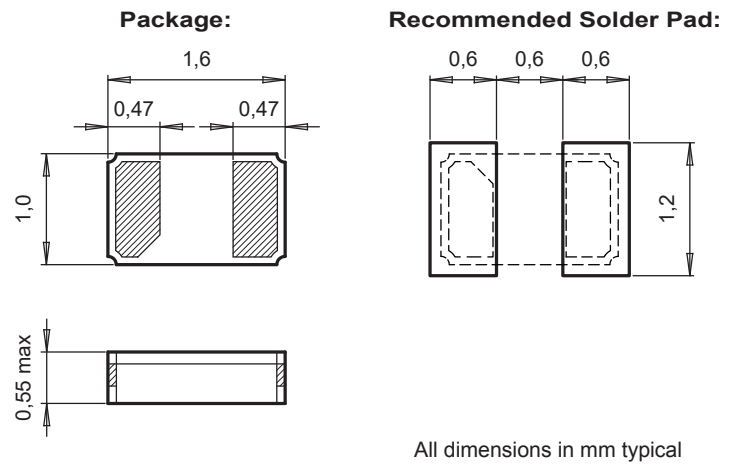


CC9V-T1A Medical

Tuning Fork Crystal 32 kHz – 102.4 kHz



DIMENSIONS



APPLICATIONS

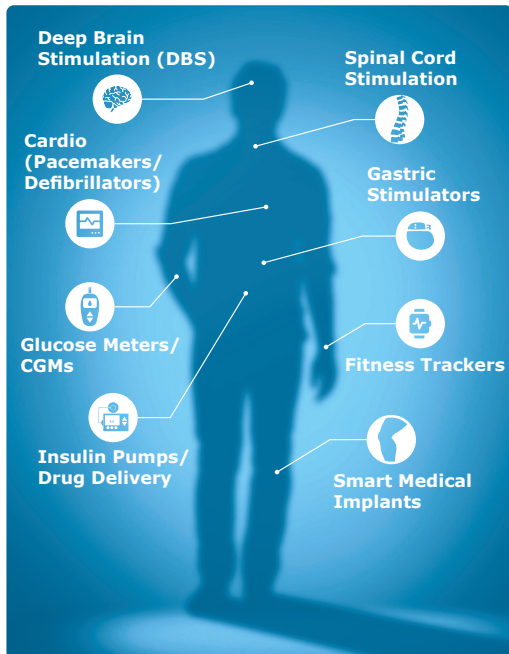
Pacemakers
 Defibrillators
 Neurostimulators
 Cardiac Monitoring Devices
 Implantable Drug Delivery Pumps
 Infusion Pumps
 Cochlear Implants
 Smart Orthopedic Implants

DESCRIPTION

The CC9V-T1A 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 CC9V-T1A 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 small size (1.6 × 1.0 × 0.55 mm), lightweight (2.3 mg)



ELECTRICAL CHARACTERISTICS AT 25°C

Standard Frequencies	¹⁾ F _L	32.000 / 32.768	100.000 / 102.400	kHz
Load capacitance	¹⁾ C _L	4.0 / 6.0 / 7.0 / 9.0 / 12.5		pF
Frequency tolerance	²⁾ ΔF/F	±20		ppm
Series resistance typ./max.	R _S	60 / 75	14 / 20	kΩ
Motional capacitance typ.	C ₁	6.3	2.6	fF
Static capacitance typ.	C ₀	1.4	0.8	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

Frequencies			
32.000 kHz	32.768 kHz	100.000 kHz	102.400 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
CC9V-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s

ORDERING INFORMATION

C C 9 V - T 1 A 32.768 kHz 12.5 pF ±20 ppm TA QM

<p>Ceramic package _____</p> <p>Ceramic lid _____</p> <p>Package size _____ 9 = 1.6 x 1.0 x 0.55 mm</p> <p>Tuning fork _____</p> <p>SMD Package _____</p> <p>Au flashed pads _____</p> <p>2 pads _____</p>	<p>Frequency F_L _____</p> <p>Load capacitance C_L 4.0 pF 6.0 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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