CARDINAL COMPONENTS

Ultra-Miniature Crystals

Cardinal's ultra-miniature crystals are a smaller alternative to the standard HC-49 package where applications require compact board space. They are perfect for applications requiring tight tolerances over wide temperature ranges.

Series

CM1 CM4 CM5

Part Numbering Example: CM1 Z - A1 - B2 - C2 50 - 7.0 D18 - 3

СМ1	Z	A1 *	B2	C ₂	50	7 _: 0	D18	- 3
SERIES	ADDED FEATURES	OPERATING TEMP.	STABILITY	TOLERANCE	RESISTANCE	FREQUENCY	LOAD CAP.	OVERTONE
CM1	BLANK = BULK PACK						D16,18,20,ETC.	BLANK: FUND.
CM4 CM5	Z = TAPE AND REEL	$A1 = -10^{\circ}C \sim +70^{\circ}C$	$B2 = \pm 50$	$C2 = \pm 50$	BELOW		DS = SERIES	-3: 3rd OT
CM5		$A2 = -40^{\circ}C \sim +85^{\circ}C$	$B3 = \pm 30$	$C3 = \pm 30$				-5: 5th OT
		$A3 = -55^{\circ}C \sim +125^{\circ}C$	$B4 = \pm 10$	$C4 = \pm 10$				-7: 7th OT
								-BT: BT Cut

^{*}NOTE: The above ABC combinations cover basic specification options. We tailor our crystal specifications to meet customer requirements. Please contact our sales department if you don't see exactly what you need.

Specifications:

F	40,000 475,000 MH-						
Frequency Range:	10.000 ~ 175.000 MHz						
Operating Temperature	e: -10°C ~ + 70°C Standard						
	-40°C ~ + 85°C						
	-55°C ~ +125°C						
Frequency Stability:	±100 ppm						
	± 50 ppm Standard						
	± 30 ppm						
	± 10 ppm						
Frequency Tolerance:	±100 ppm						
(at 25°C)	± 50 ppm Standard						
	± 30 ppm						
	± 10 ppm						
Load Capacitance: Standard 18 pF or series.							
	Please specify your required load.						

Resistance: Maximum resistance corresponds to frequency.

See chart below.

Standard: Mode: Fundamental, 3rd, 5th, or 7th Overtone

Shunt Capacitance: 7 pF Max

Aging: ± 5 ppm/year Drive Level: 1.0 mW Max

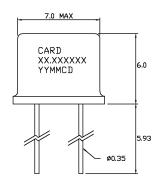
Optional Features: Third lead

Insulator pads

Tape and Reel (1K per Reel)

Note 1: Not all combinations of the above tolerances, stabilities, and temperature ranges are available. Consult the factory if your requirement is not standard.

7.0 MAX 7.0 MA



CM₅

Resistance Chart: All resistances are maximum values.

EQUIVALENT SERIES RESISTANCE (ESR), MODE OF OPERATION (MODE), AND CUT										
CM1			CM4 & CM5							
Frequency MHz	$ESR(\Omega)$	Mode	Frequency MHz	ESR (Ω)	Mode/cut					
7.000~15.999	50 Max	Fund.	10.000~15.999	60 Max	Fundamental					
16.000~40.000	40 Max	Fund.	16.000~40.000	50 Max	Fundamental					
30.000~90.000	70 Max	Third OT	30.000~90.000	80 Max	Third Overtone					
70.000~150.000	100 Max	Fifth OT	70.000~175.000	120 Max	Fifth Overtone					

