



## DIP CRYSTAL UNITS

## MC-146 Seam Sealing Crystal

- . Very corthpact and thin(7.0\*1.5\*1.4mm MAX)
- . Frequency range of 32.768KHz
- . Low cost ,KHz Frequency ,Miniature package,Tight tolerance

Item	Symbol	MIN	TYP	MAX	Unit	Condition
Operating Temperature Range	Topt	-40		85	°C	
Storage Temperature Range	Tstg	-55		125	°C	
Load Capacitance	CL		12.5		pF	
Drive Level	DL		0.1	1	μw	

## Frequency Stability:

Item	Symbol	MIN	TYP	MAX	Unit	Condition
Tolerance	dF/Fo	-20		20	ppm	Refer to Center Frequency @25±3°C DL = 0.1 μW
Freq. vs Temp. Coefficient	dF/dT	-0.025	-0.035	-0.045	ppm/°C <sup>2</sup>	Values are calculated by frequencies at 10 °C , 25 °C , and 40 °C
Turnover Temperature	TT	20	25	30	°C	
Aging	dF/F25	-3		3	ppm	Per Year

## Electrical Performance:

Item	Symbol	MIN	TYP	MAX	Unit	Condition
Equivalent Series Resistance	ESR			70	KΩ	@Series
Shunt Capacitance	C0	0.6	0.9	1.2	pF	
Motional Capacitance	C1	3	3.7	4.4	fF	
Quality Factor	Q	13000				
Insulation Resistance	IR	500			MΩ	@DC 100 Volt



HUBEI JINGMAO ELECTRONICS CO., LTD.

湖北晶茂电子科技有限公司

## CRYSTAL CERAMIC DIP MC-146 DIMENSION

PACKAGE DIMENSIONS: Unit: mm

