



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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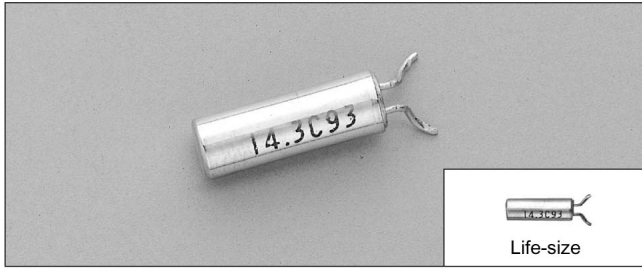
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# AT-CUT CRYSTAL UNITS (SMD • Cylinder Type)

RoHS Compliant Optional **CMR310T • CMR309T**

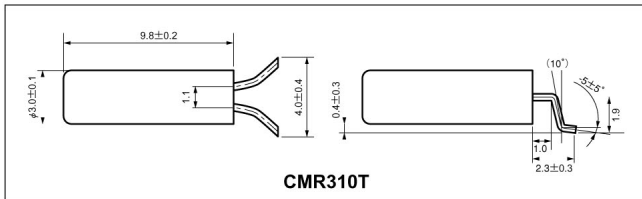
1000pcs/reel



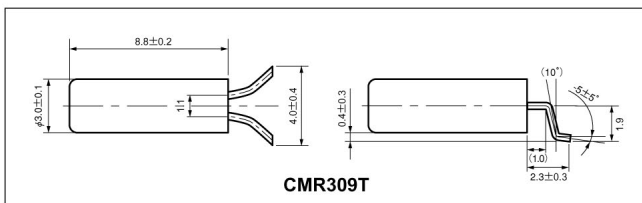
## FEATURES

- High performance miniature crystal units with Citizen's ultra-precise processing technology.
- High-stability assured with tight vacuum sealing.
- Lead forming SMD type with embossed tape. Automatic mounting and reflowable Type.

## DIMENSION [mm]

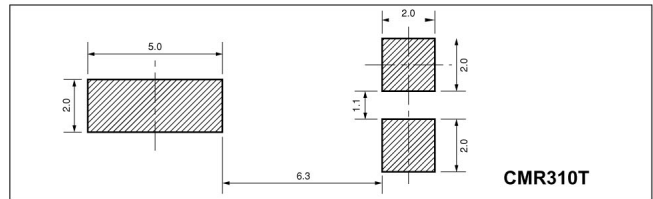


CMR310T

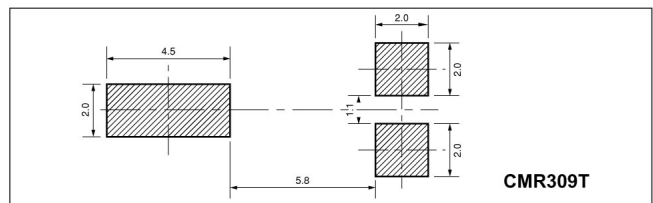


CMR309T

## SOLDER PAD LAYOUT [mm]



CMR310T



CMR309T

## STANDARD SPECIFICATIONS

Item	Model	CMR310T	CMR309T	Conditions
Nominal Frequency	$f_0$	3.5MHz ~ 4.0MHz	4.001MHz ~ 30.0MHz (Fundamental) 30.001MHz ~ 70.0MHz (3rd Overtone)	Need to contact us for the available frequency
Frequency Tolerance	$\Delta f/f_0$	$\pm 30\text{ppm}$		at 25°C
Frequency Tolerance over Operating Temperature Range	$\Delta f/f_0$	$\pm 50\text{ppm}$		-10°C ~ +60°C
Operating Temperature Range	$T_{OPR}$	-40°C ~ +85°C		
Storage Temperature Range	$T_{STR}$	-55°C ~ +125°C		
Motional (series) resistance	$R_1$	Refer to the following table		at 25°C
Load capacitance	$C_L$	18.0pF		Need to specify your requirement
Shunt capacitance	$C_0$	5.0pF Max.		
Level of drive	DL	100 $\mu$ W Max.		
Insulation Resistance	$I_R$	500M $\Omega$ Min.		DC100V $\pm$ 15V
Aging (first year)	$\Delta f/f_0$	$\pm 5\text{ppm}$ Max.		25°C $\pm$ 3°C

## MOTIONAL (SERIES) RESISTANCE ( $R_1$ )

Frequency Range	$3.5\text{MHz} \leq f_0 < 4.0\text{MHz}$	$4.0\text{MHz} \leq f_0 < 6.0\text{MHz}$	$6.0\text{MHz} \leq f_0 < 10\text{MHz}$	$10\text{MHz} \leq f_0 < 27\text{MHz}$	$27\text{MHz} \leq f_0 < 36\text{MHz}$	$36\text{MHz} \leq f_0 \leq 70\text{MHz}$
Mode	Fundamental	Fundamental	Fundamental	Fundamental	Fundamental	3rd Overtone
$R_1$	200 $\Omega$ Max.	150 $\Omega$ Max.	100 $\Omega$ Max.	50 $\Omega$ Max.	50 $\Omega$ Max.	100 $\Omega$ Max.
						80 $\Omega$ Max.