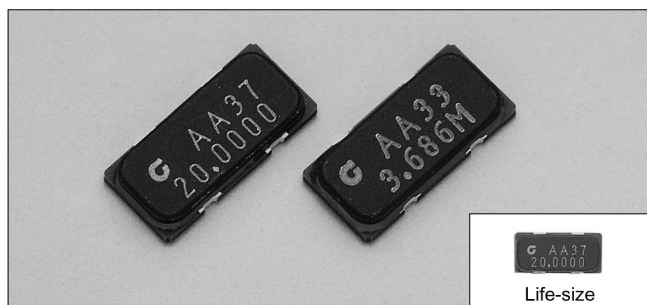


AT-CUT CRYSTAL UNIT (SMD • Ceramic Package)

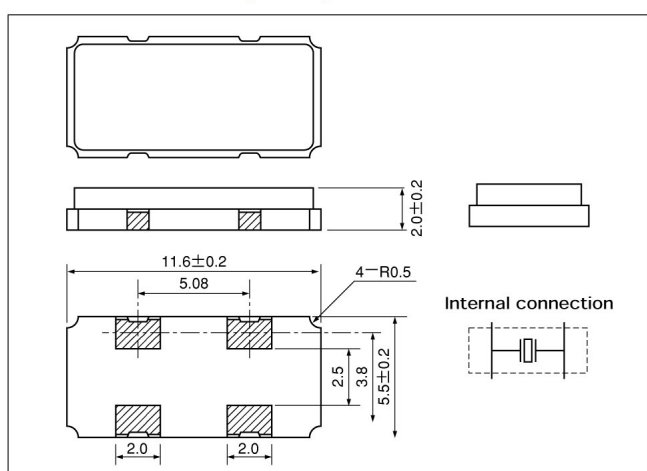
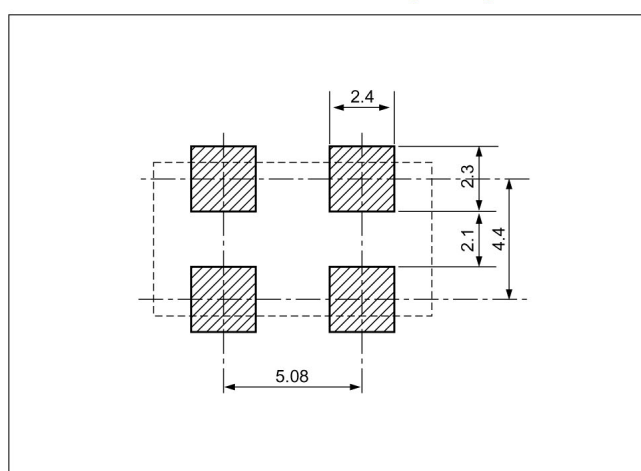
RoHS Compliant Standard

CS20

2000pcs/reel

**FEATURES**

- Reliable ceramic package and excellent environmental characteristics.
- Available for wide range of frequency.
- Suitable for various applications such as communication devices, AV devices, automotive devices and measuring instruments.

DIMENSION [mm]**SOLDER PAD LAYOUT [mm]****STANDARD SPECIFICATIONS**

Item	Model	CS20	Conditions
Nominal Frequency	f_0	3.5MHz~30.0MHz (Fundamental)	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	7.0pF Max.	
Level of drive	D_L	100 μW .	
Insulation Resistance	I_R	500M Ω Min.	DC100V $\pm 15\text{V}$
Aging (first year)	$\Delta f/f_0$	$\pm 5\text{ppm Max.}$	25°C $\pm 3^\circ\text{C}$

MOTIONAL (SERIES) RESISTANCE (R_1)

Frequency Range	$3.5\text{MHz} \leq f_0 < 4.0\text{MHz}$	$4.0\text{MHz} \leq f_0 < 6.0\text{MHz}$	$6.0\text{MHz} \leq f_0 < 10\text{MHz}$	$10\text{MHz} \leq f_0 < 14\text{MHz}$	$14\text{MHz} \leq f_0 \leq 30\text{MHz}$
R_1	200 Ω Max.	150 Ω Max.	100 Ω Max.	80 Ω Max.	50 Ω Max.