



APPROVAL SHEET

承认书

Product Name	Quartz crystal 石英晶体谐振器
P/N	S-F-20.000M-20-3030-4085-50
Customer's Name	曙光信息
Customer's P/N	
LOT NO.	
Specification sheet#	DSS-0992
Date	2019/9/12
Draw	ZL
Check	tang
Customer Confirmation	



南京中电熊猫晶体科技有限公司

NANJING CHINA ELECTRONICS PANDA CRYSTAL TECHNOLOGY CORPORATION

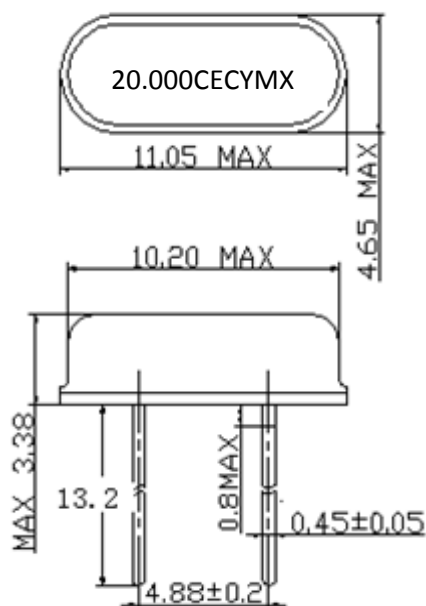
TEL:0086-25-85328328

FAX:0086-25-85315213, 85301856

HTTP: www.cecxtal.com

南京中电熊猫晶体科技有限公司 Nanjing CEC Panda Crystal Tech Corp.	Specification of quartz crystal 石英晶体谐振器规格书	NO: DSS-0992
	HC-49U/S	DATE: 2019/09/12

■ 外形及印字(DIMENSION AND MARKING)



Marking Definitions: (印字说明)

20.000/Frequency (中心频率的前5位数字) 1st 5 significant digits of center frequency

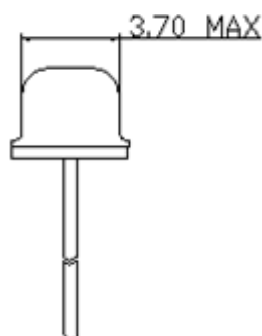
Y/Year (年的最后一位) the last digit of year

(0:2010, 1:2011, 2:2012...)

M/Month (月度代码) A, B, C, D, E, F, G, H, J, K, L, M

UNIT (单位) mm

X/Company Code (S:Shenzhen, N:Nanjing, L:Langfang)

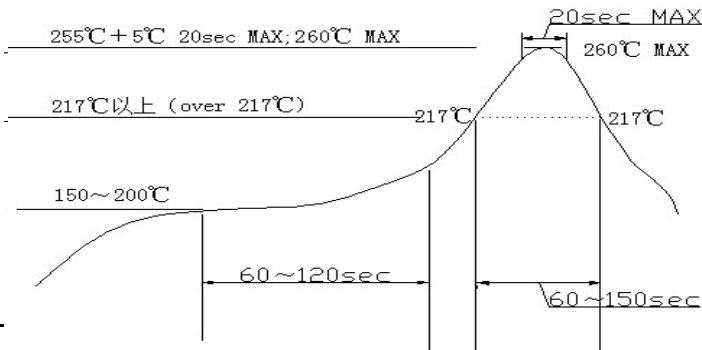


■ 电气参数(ELECTRICAL SPECIFICATION)

Type 型号	: HC-49U/S
Nominal frequency 标称频率	: 20.000000 MHz
Mode of oscillation 振荡模式	: Fundamental
Operating temperature range 工作温度范围	: -40℃ ~ +85℃
Storage temperature range 保存温度范围	: -40℃ ~ +85℃
Test set 测试系统	: 250B
Drive level 激励电平	: 100μW
Loading capacitance 负载电容	: 20pF
Frequency tolerance 调整频差	: ±30ppm. Max.(AT 25℃ ±3℃)
Equivalent resistance 等效阻抗	: 50 ohms Max.
Temperature drift 温度频差	: ±30ppm Max./-40℃ to +85℃
Shunt capacitance 静电容	: 7.0pF Max.
Motional capacitance 动电容	: /
Aging 老化率	: ±5ppm/ year Max.
Insulation resistance 绝缘阻抗	: 500MΩMin / 100V±15V D.C.
Other 其它	: Bulk
Note	:

南京中电熊猫晶体科技有限公司 Nanjing CEC Panda Crystal Tech Corp.	Specification of quartz crystal 石英晶体谐振器规格书	NO: DSS-0992
	HC-49U/S	DATE: 2019/09/12

■ 可靠性测试条件(RELIABILITY TEST)

序号 NO	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
1	跌落 DROP	100cm高处自由跌落到3cm厚木板上, 3次 High:100cm;Thickness:3cm;3tims 50cm高捆包从每一面跌落到实地上 Dropping the units packaged inside a shipping carton box from 50cm height in each planar side of the carton on a concrete floor	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
2	振动 VIBRATION	频率 Frequency:10~60Hz;幅度 Amplitude: $\pm 0.75\text{mm}$ 周期 Cycle time:10-60-10Hz: 1min 振动方向 Direction:X, Y, Z 振动时间 Duration: 每个方向2小时 2 h/direction.	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
3	温度变化 TEMPERATURE SHOCK	30min $-40^{\circ}\text{C} \pm 2^{\circ}\text{C} (30\text{min}) \longleftrightarrow 85^{\circ}\text{C} \pm 2^{\circ}\text{C} (30\text{min})$;循环10次 30min $-40^{\circ}\text{C} \pm 2^{\circ}\text{C} (30\text{min}) \longleftrightarrow 85^{\circ}\text{C} \pm 2^{\circ}\text{C} (30\text{min})$;For 10 cycles	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
4	湿热 HUMIDITY	温度: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$;湿度85%;时间:1000小时 Temp: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$;Humidity:85%;Times:1000h	$\Delta FL \leq 10\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
5	低温 COLD RESISTANCE	温度: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$;时间:1000小时 Temp: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$;Times:1000h	$\Delta FL \leq \pm 10\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
6	高温 HEAT RESISTANCE	温度: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$;时间:1000小时 Temp: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$;Times:1000h	$\Delta FL \leq \pm 10\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)
7	回流焊 REFLOW	 <p>255°C+5°C 20sec MAX; 260°C MAX 217°C以上 (over 217°C) 150~200°C 60~120sec 20sec MAX 260°C MAX 60~150sec</p>	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq 5\Omega$ or $\pm 10\%$ (whichever is largrer)

南京中电熊猫晶体科技有限公司 Nanjing CEC Panda Crystal Tech Corp.		Specification of quartz crystal 石英晶体谐振器规格书	NO: DSS-0992
		HC-49U/S	DATE: 2019/09/12
■ 可靠性测试条件(RELIABILITY TEST)			
序号 NO	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
8	焊接 Solderability	Temp. :250±2℃ Solderdipping Speed:20±5mm/sec Dipping Depth:2-5mm	浸锡率≥95% the solder immersion surface≥95%
9	焊接耐热性 Soldering Heat Resistance (Manual Soldering)	Temperature of soldering tip:390℃ Heating Time:3sec,twice	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq 5\ \Omega$ or $\pm 10\%$ (whichever is largrer)
10	引脚强度 Terminal Strength (leaded)	只要求试验引线型元器件的引线完整性 Test leaded device lead integrity only 条件A: (907克); 沿引线方向1次(10s Condition A: (907g) along the wire direction once(10sec) , 条件B: (454克); 90度弯曲3次 condition B: (454g) 90 degree bend 3 times	晶体无损伤 without distinct damage

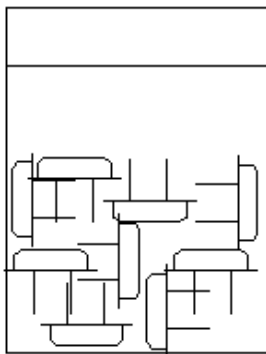
南京中电熊猫晶体科技有限公司 Nanjing CEC Panda Crystal Tech Corp.	Specification of quartz crystal 石英晶体谐振器规格书	NO: DSS-0992
	HC-49U/S	DATE: 2019/09/12

■包装 (PACKAGE)

1. 自封袋

200 只=1 包

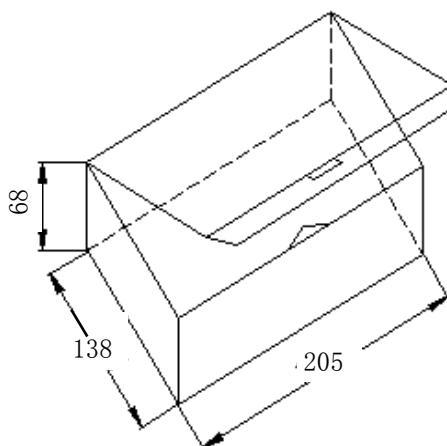
200 pcs=1 Bag



2. 内包装 (Inside package)

10 包=1 盒

10 Bag=1 box



3. 外包装 (outside Package)

12 盒=1 箱

12 box=1 carton

