

# 产 品 规 格 书



# Product Specification

CUSTOMER	客户:	
CUSTOMER PN	客户 PN:	
HANG CRYSTAL P/N	杭晶物料编码:	<b>XC53G2-8.000-F20LJDT</b>
MODEL	产品型号:	<b>Crystal SMD 5.0x3.2 glass seal, 2 pads</b>
NOMINAL FREQUENCY	频率:	<b>8.000MHZ</b>
ISSUE DATE	日期:	<b>2017 / 10 / 23</b>

**CUSTOMER'S APPROVAL**

客户确认

(PLEASE RETURN A COPY WITH APPROVAL)  
 (请将确认的复印件返回我司)

<b>APPROVED</b>	<b>QA</b>
	

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Revision	Description / ECN	Prepared	Approved	Date
1	Initial release	<i>MB</i>	<i>S. Shen</i>	2017-10-23
2	Not issued			
3	Not issued			
4	Not issued			

**1. NOMINAL AND MAXIMUM RATINGS, OPERATING AND STORAGE CONDITIONS**

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Nominal frequency	$F_N$	<b>8.000</b>			MHz	--
2	Vibration mode	---	FUNDAMENTAL				--
3	Load capacitance	CL		20.0		pF	--
4	Drive level	DL		100	300	$\mu$ W	--
5	Operating temperature range	$T_{OP}$	-40	+25	+85	$^{\circ}$ C	Note 1
6	Storage Temperature Range	$T_{ST}$	-25		+125	$^{\circ}$ C	--

Note 1: Unit stays within all relevant parameter limits as specified under point 2 below.

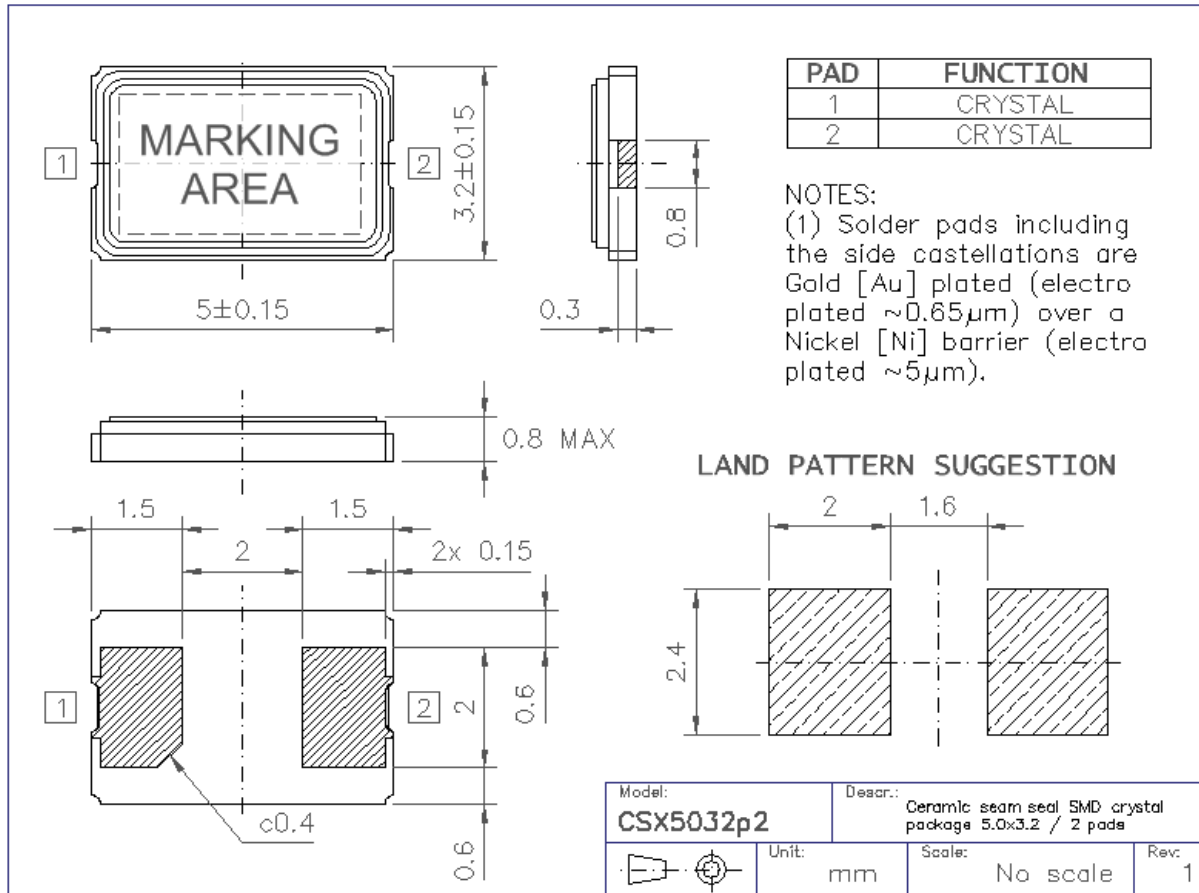
**2. ELECTRICAL PARAMETER LIMITS**

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Frequency tolerance	$\Delta f/F_N$	-20		+20	ppm	Offset from $F_N$ at +25 $^{\circ}$ C
2	Frequency stability	$\Delta f/f$	-30		+30	ppm/ $^{\circ}$ C <sup>2</sup>	Note 1
3	Aging first year	$(\Delta f/f)_{A1}$	-3.0		+3.0	ppm	at +25 $^{\circ}$ C and 100 $\mu$ W
4	Shunt capacitance	C0			5.0	pF	at +25 $^{\circ}$ C and 100 $\mu$ W
5	Equivalent series resistance	ESR			100	$\Omega$	at +25 $^{\circ}$ C / 100 $\mu$ W / @Series
6	Insulation resistance	IR	500			M $\Omega$	at 100 $\pm$ 15V <sub>DC</sub>

Note 1: Frequency stability is the frequency deviation over operating temperature range  $T_{OP}$  in reference to the frequency reading at +25 $^{\circ}$ C..

**3. OUTLINE DRAWING**

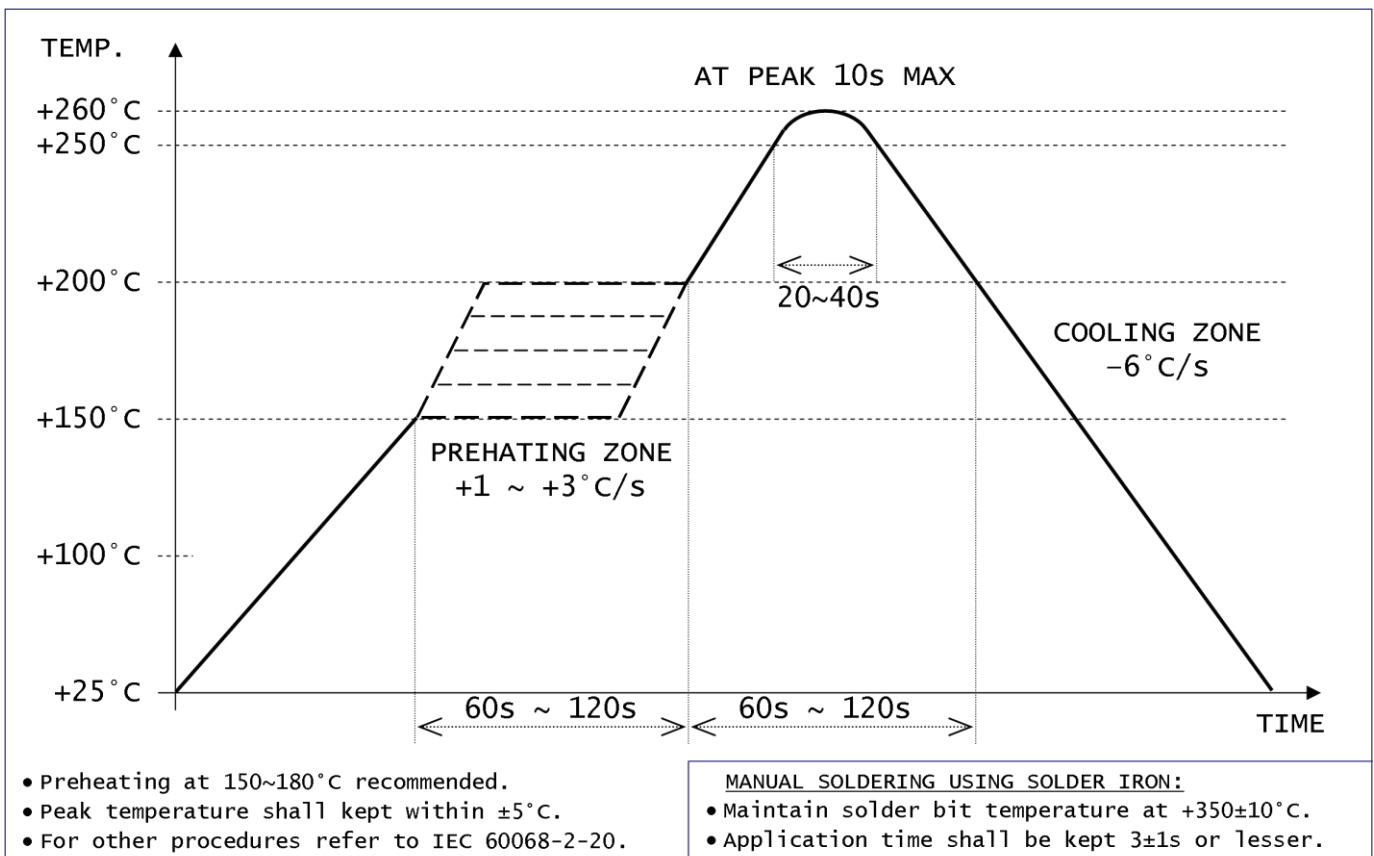
	Package description	Package model	Remarks
1	Seam seal SMD package 5.0x3.2mm with 2 pads	CSX5032p2	--


**4. RELIABILITY TEST INFORMATION**

	Test item	Test method	Criteria
1	Temperature Cycle (GB/T2423.22-2002, Method Nb)	10 cycles from -55°C to +125°C. Tested after 24±2h at room temperature.	±5.0ppm
2	Low Temperature Storage (GB/T 2423.1-2001, Method Aa)	72h at -55°C±3°C constant temperature. Tested after 24±2h at room temperature.	±5.0ppm
3	High Temperature Storage(GB/T 2423.2-2001, Method Ba)	72h at +125°C±3°C constant temperature. Tested after 24±2h at room temperature.	±5.0ppm
4	Humidity (GB/T 2423.3-2006, Method Cab)	96h at +40 °C ± 3 °C, with 90± 3% RH. Tested after 24±2h at room temperature.	±5.0ppm
5	Vibration (GB/T 2423.10-1995, Method Fc)	Apply 0.75mm vibration at frequency 10~500 Hz, for 2h. 10 cycles in each direction of 3 axis, test after 1h.	±5.0ppm
6	Shock (GB/T 2423.5-1995,Method Ea)	Peak 1000m/s <sup>2</sup> , with 6ms half sine wave, 3.7m/s, in 3 perpendicular axis, 3 cycles /direction, test after 1h.	±5.0ppm
7	Drop (GB/T 2423.8-1995, M. Ed)	Free drop onto wooden plate from 1.0 m height for 3times.	±5.0ppm
8	Solderability (GB/T2423.28-2005, Method Tc)	Dip into 245 ± 5°C solder bath for 2 ± 0.5 seconds. Inspection under 8-12X magnifier.	>95% cover.
9	Terminal Strength (JIS-C-6429 Method 1 & 2 )	Mount on a glass-epoxy board (100x50x1.6mm), then bend to 2mm displacement (velocity 1mm/sec) and keep for 5 seconds. or pulling force 0.5 kg for at least 60seconds	No damage
10	Resistance to Solder Heat (GB/T 2423.28-2005,Test Tb Meth. 1B)	Reflow at Preheat to 150°C±5°C for 60 to 120sec,and peak 265°C±5°C for 10s±3sec, Tested after 24±2h at room temp.	±5.0ppm

**5. ENVIRONMENTAL COMPLIANCE INFORMATION**

		Compliance information
1	RoHS	This product is fully RoHS compliant, 6/6 compliant per DIRECTIVE 2011/65/EU. The product is considered LEAD-FREE, Pb contamination guaranteed <100ppm.
2	RoHS 2	This product is RoHS compliant per DIRECTIVE 2015/863 (also called RoHS10). In regards of RoHS 2, CE marking directive for finished products, we can provide RoHS test reports and MDS to show compliance, but since our product is not a final application we have no CE mark.
3	Halogen-Free	This product is compliant to IEC 61249-2-21:2003 (Br<800ppm / Cl<800ppm).
4	REACH (SVHC)	This product does not contain substances (SVHC) listed by REACH, we continuously monitor updates of the list of SVHC's
5	PFOS / PFOA Free	This product is free of any PFOS / PFOA.
6	Electrostatic Discharge (ESD) sensitivity	This product is not ESD sensitive and does therefore not require precautions for handling and storage. Follow JEITA EIAJ ED-4701 or JSD22 or ANSI-ESD-S20-20 or IEC 61000-4-2.
7	Moisture Sensitivity	This product is hermetically sealed and does NOT fall under the classification of moisture sensitivity per J-STD-020C (Standard is for non-hermetically sealed components). If required we suggest to use LEVEL 1

**6. RECOMMENDED SOLDERING INFORMATION**
**RECOMMENDED REFLOW SOLDER PROFILE – PEAK TEMPERATURE UP TO +260°C**


DWG\_ReflowProfile\_260

HCI QE 2014/10

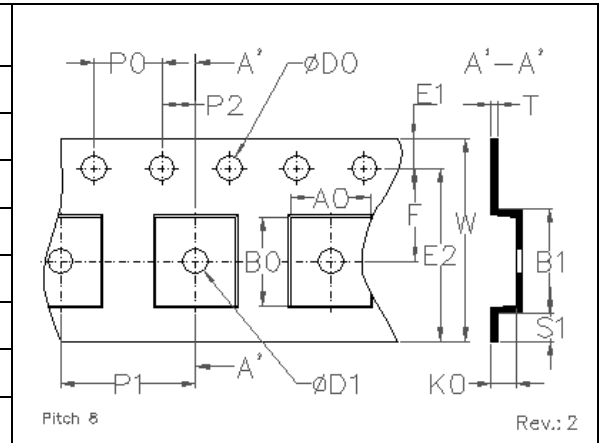
NO SCALE

Rev.: 1

7. PACKAGING

Carrier

Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING
1 A0	3.6±0.1	
2 B0	5.4±0.1	
3 K0	1.5±0.1	
4 B1	6.0±0.1	
5 P0	4.0±0.1	
6 P1	8.0±0.1	
7 T	0.3±0.05	
8 W	12.0±0.2	

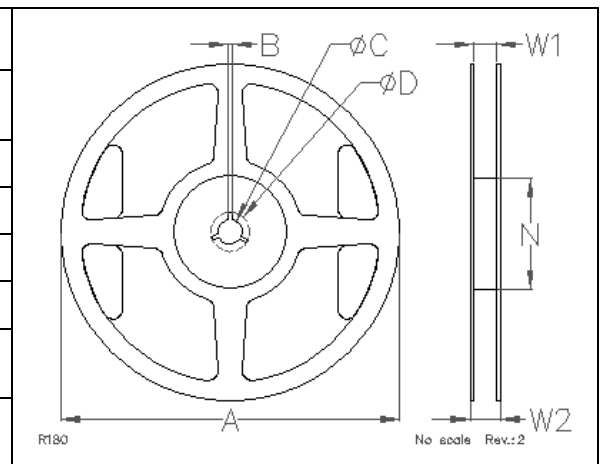


Note 1: All dimensions in [mm].  
 Note 2: All dimensions not specified or not being shown follow EIA-481 standard.

Reel

QTY per reel: 1,000pcs MAX

Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING
9 A	178 <sup>+0</sup> <sub>-1.5</sub>	
10 B	2.0±0.5	
11 ØC	13.2±0.2	
12 ØD	21±0.8	
13 N	60.2±0.5	
14 W1	12.4 <sup>+2.0</sup> <sub>-0</sub>	
15 W2	16.4 <sup>+2.0</sup> <sub>-0</sub>	



Note 1: All dimensions in [mm]. Dimension W1 is measured near the Hub (N).  
 Note 2: All dimensions not specified or not being shown follow EIA-481 standard.

Unreeling information

**Product's orientation in carrier tape**

16	This product is a non-polarized component and does not require a certain orientation. This product can be used in reverse orientation and has therefore no pin identification and no specific orientation in the carrier.
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