

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: CO32H4-50.000-33KDTST

MODEL 产品型号: Oscillator SMD 3.2x2.5, HCMOS, 3.3V

NOMINAL FREQUENCY 频率: 50.000MHZ

ISSUE DATE 日期: 2022 / 08 / 18

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)

APPROVED

QA

Peter Y.

James J

SUZHOU HANGJING ELEC&TECH CO.,LTD

苏州杭晶电子科技有限公司

No. 207, Blk. B, Chenlei Science & Technology Park, No. 1, First Qunxing Road, Suzhou Industrial Park, Jiangsu, China
TEL. 86 (0)512 65916689
FAX 86 (0)512 65918005

Revision	Description / ECN	Prepared	Approved	Date
1	Initial release	Peter Y.	James Jiang	2022-08-18
2	Not issued			
3	Not issued			
4	Not issued			

1. MAXIMUM RATINGS, OPERATING AND STORAGE CONDITIONS

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Maximum voltage range	V _{MAX}	-0.5		+4.5	V _{DC}	Between V _{CC} and GND
2	Nominal supply voltage	V _{CC}	2.97	3.30	3.63	V _{DC}	--
3	Output load capacitance	CL		15		pF	HCMOS
4	Operating temperature range	T _{OP}	-40	+25	+85	°C	--
5	Storage temperature range	T _{ST}	-55		125	°C	--
6	Enable / Disable function (→ Output TRISTATE)	E/D	Pin 1 = HIGH		→	Output pin 3 is enabled	
		Note 1	Pin 1 = LOW		→	Output pin 3 is disabled (high impedance)	


Note 1: Output pin 3 is enabled when E/D input pin 1 is left open (floating).

2. ELECTRICAL PARAMETER LIMITS

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Nominal frequency	F _N	50.000			MHz	--
2	Frequency tolerance	Δf/F _N	-10		+10	ppm	Offset from F _N at +25°C
3	Frequency stability	Δf/F _N	-15		+15	ppm	Note 1
4	Aging first year	Δf/F _{A1}	-3.0		+3.0	ppm	at +25°C
5	Output voltage level HIGH	V _{OH}	2.97			V _{DC}	HCMOS level 90%V _{CC} MIN
6	Output voltage level LOW	V _{OL}			0.33	V _{DC}	HCMOS level 10%V _{CC} MAX
7	Output amplitude rise time	t _R			5.0	ns	At 20~80%V _{CC} / 15pF / +25°C
8	Output amplitude fall time	t _F			5.0	ns	At 80~20%V _{CC} / 15pF / +25°C
9	Output amplitude symmetry	DC	45		55	%	At 50%V _{CC} / 15pF / +25°C
10	Current consumption	I _{CC}			10	mA	With output load CL ±10%
11	Standby current	I _{STB}			10	μA	Output disabled (pin 1 = LOW)
12	Startup time	t _{STRT}			5	ms	V _{P-P} reach >90% of amplitude

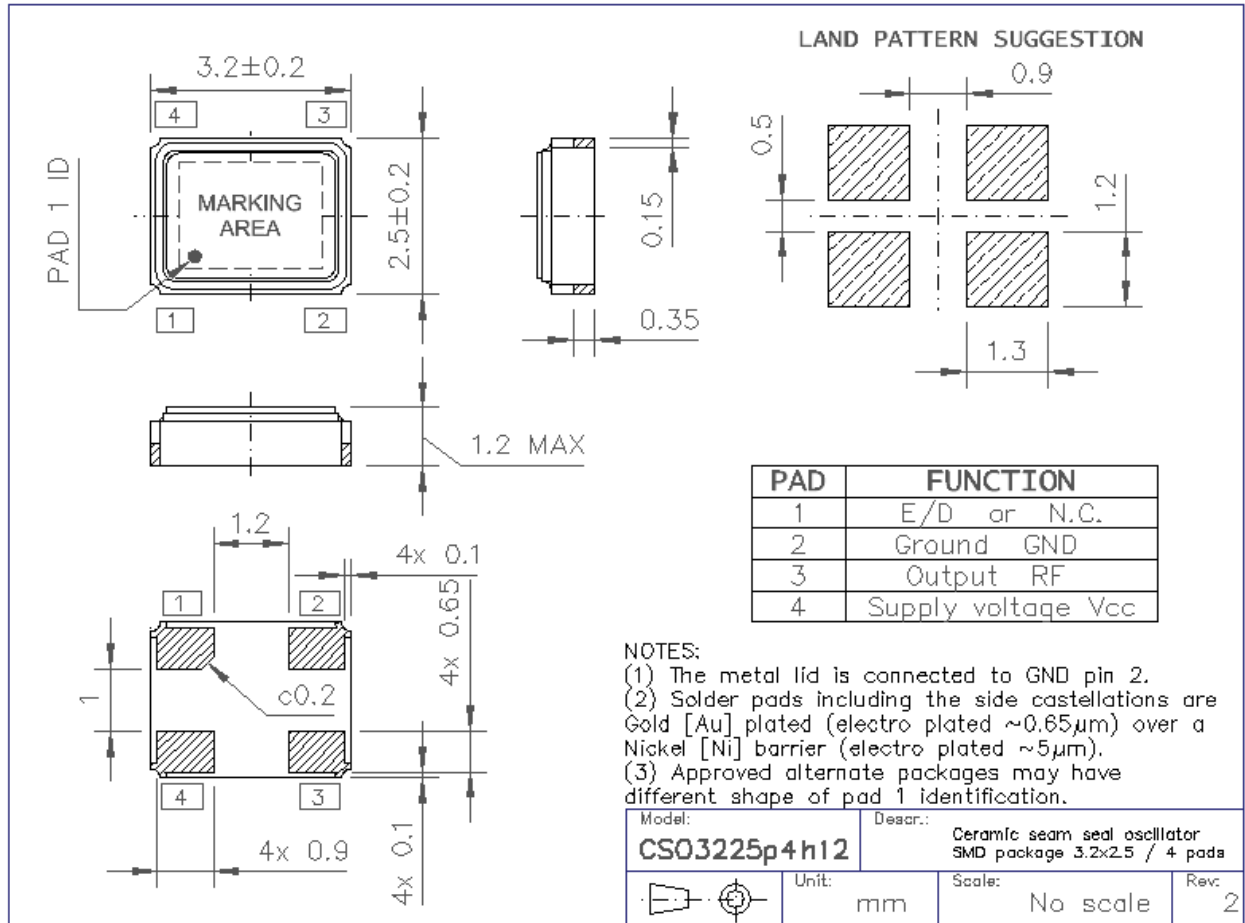
Note 1: Frequency stability is the frequency deviation over operating temperature range T_{OP} in reference to the frequency reading at +25°C..

3. PRODUCT MARKING

1	FF.fff	Nominal frequency in MHz (three digits after decimal point)											
2	HCI	Company logo											
3	Y	Year code of manufacturing (see table below)											
	Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	Code	V	W	X	Y	Z	A	B	C	D	E	F	G
4	M	Month code of manufacturing (see table below)											
	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Code	A	B	C	D	E	F	G	H	J	K	L	M

OUTLINE DRAWING

	Package descriptions	Package model	Remarks
1	Ceramic seam seal SMD package 3.2x2.5mm with 4 pads for Oscillator	3225p4 h12	With E/D function on pin 1



4. RELIABILITY TEST INFORMATION

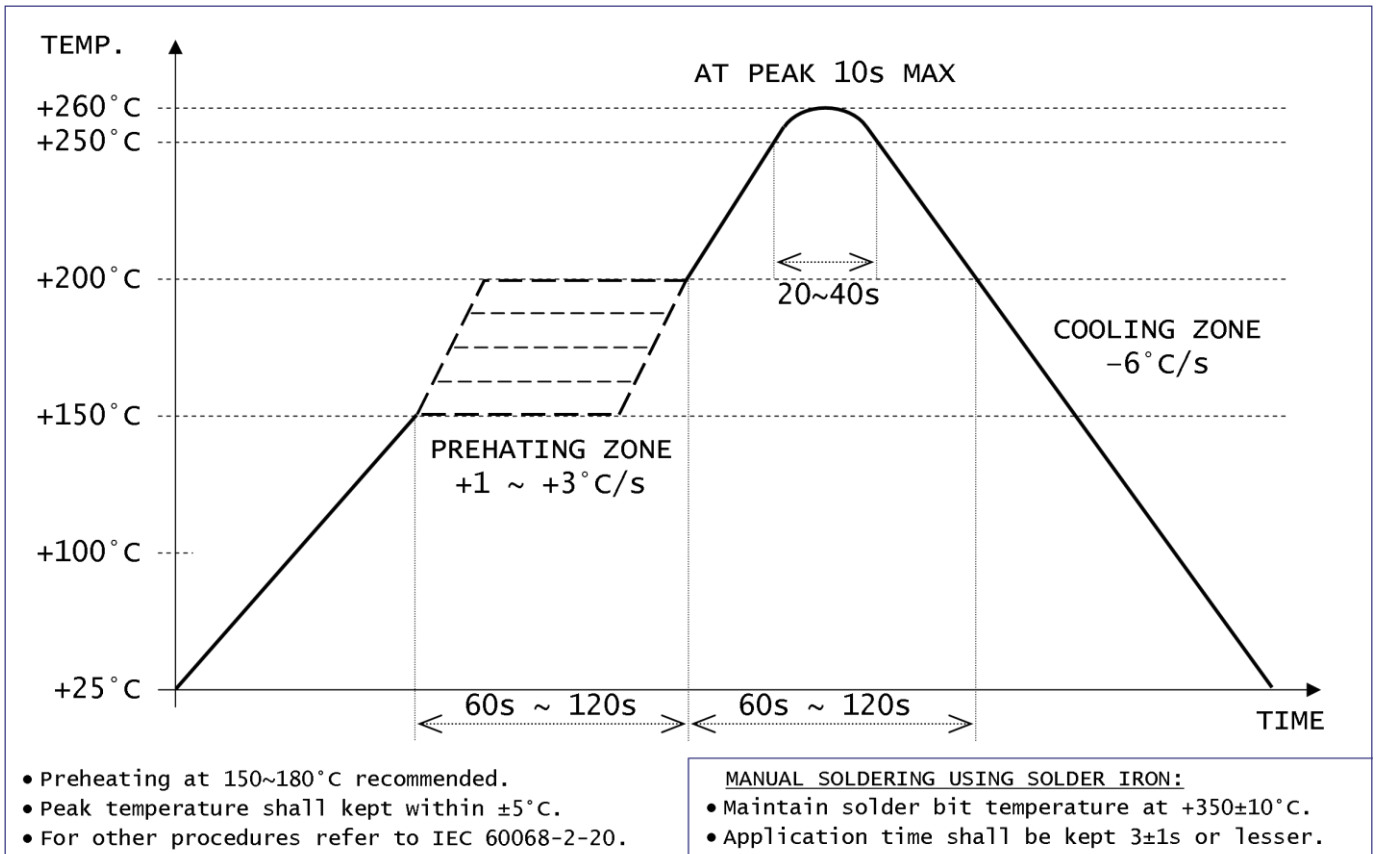
Test item	Test method	Criteria
1 Temperature Cycle (GB/T2423.22-2002, Method Nb)	10 cycles from -55°C to +125°C. Tested after 24±2h at room temperature.	±5.0ppm
2 Low Temperature Storage (GB/T 2423.1-2001, Method Aa)	72h at -55°C±3°C constant temperature. Tested after 24±2h at room temperature.	±5.0ppm
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 ² , 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 EU legislation.
2	RoHS 2	This product is RoHS compliant per DIRECTIVE 2015/863 (also called RoHS10). In regards of 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	Lead-Free	This product is considered Lead-Free, Lead (Pb) contamination is controlled to be below 200ppm.
4	Halogen-Free	This product is compliant to IEC 61249-2-21:2003 (Br<800ppm / Cl<800ppm).
5	REACH (SVHC)	This product does not contain substances (SVHC) listed by REACH, we continuously monitor updates of the list of SVHC's
6	PFOS / PFOA Free	This product is free of any PFOS / PFOA.
7	Electrostatic Discharge (ESD) sensitivity	This product is ESD sensitive and requires precautions for handling and storage. Follow JEITA EIAJ ED-4701 or JSD22 or ANSI-ESD-S20-20 or IEC 61000-4-2.
8	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

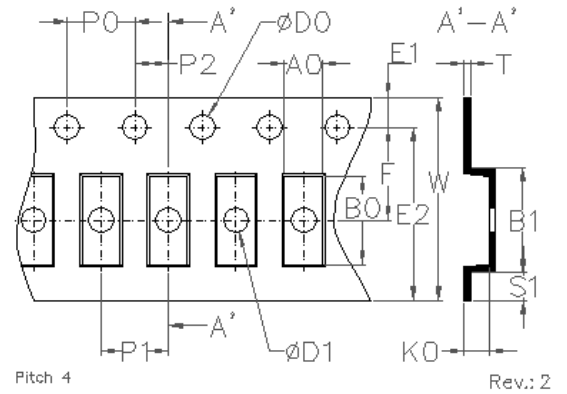
RECOMMENDED REFLOW SOLDER PROFILE – PEAK TEMPERATURE UP TO +260°C



7. PACKAGING

Carrier

Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING
1 A0	2.8±0.1	
2 B0	3.6±0.1	
3 K0	1.25±0.1	
4 B1	4.2±0.1	
5 P0	4.0±0.1	
6 P1	4.0±0.1	
7 T	0.3±0.05	
8 W	8.0±0.2	

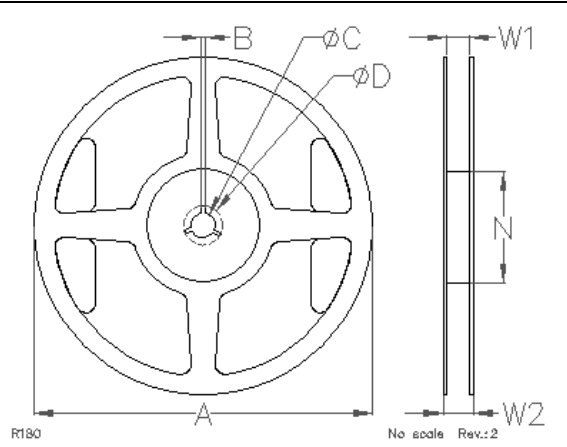


Note 1: All dimensions in [mm].
 Note 2: All dimensions not specified or not being shown follow EIA-481 standard.

Reel

QTY per reel: 3,000pcs MAX

Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING
9 A	178 ⁺⁰ _{-1.5}	180 ⁺⁰ _{-1.5}
10 B	2.0±0.5	2.0±0.5
11 ØC	13.2±0.2	13.2±0.2
12 ØD	21±0.8	21±0.8
13 N	62±2	62±2
14 W1	8.0 ^{+2.0} ₋₀	8.0 ^{+2.0} ₋₀
15 W2	11.4 ^{+2.0} ₋₀	11.4 ^{+2.0} ₋₀



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

Oscillator product's orientation

16 This product is a polarized component which requires a certain orientation; Pin 1 is identified on top side marking with a DOT. In the carrier tape is the component oriented with pin 1 towards the sprocket holes. (per EIA-481)

