

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:

CO75P8-224.000-25JDTST-ED2G

MODEL

产品型号:

Oscillator SMD 7x5, LVPECL, 2.5V

NOMINAL FREQUENCY

频率:

224.000MHz

ISSUE DATE

日期:

2023 / 12 / 01

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

MB.

James J

苏州杭晶电子科技有限公司

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Revision	Description / ECN	Prepared	Approved	Date
1	Initial release	MB.	James Jiang	2023-12-01
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		+5.0	V_{DC}	Between V_{CC} and GND
2	Nominal supply voltage	V_{CC}	2.25	2.50	2.75	V_{DC}	--
3	Output load impedance	R_L		50		Ω	Into -2V or Thevenin equivalent
4	Operating temperature range	T_{OP}	-40	+25	+85	$^{\circ}C$	--
5	Storage temperature range	T_{ST}	-55		125	$^{\circ}C$	--
6	Enable / Disable function ($\rightarrow$ Output TRISTATE)	E/D	Pin 2 = HIGH $\rightarrow$ Outputs pin 4 and 5 enabled				
		Note 1	Pin 2 = LOW $\rightarrow$ Outputs are disabled (high impedance)				

Note 1: The E/D input must be connected to either High or LOW, it is prohibited to leave it open (floating).

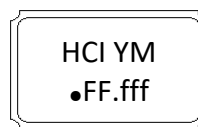
2. ELECTRICAL PARAMETER LIMITS

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Nominal frequency	F_N	224.000			MHz	--
2	Frequency stability (overall)	$\Delta f/F_N$	-30		+30	ppm	Note 1
3	Aging first year	$\Delta f/F_{A1}$	-3.0		+3.0	ppm	at +25 $^{\circ}C$
4	Output voltage level HIGH	V_{OH}	1.47		1.90	V_{DC}	V_{DD} -1.03 min., V_{DD} -0.6 max
5	Output voltage level LOW	V_{OL}	0.65		0.90	V_{DC}	V_{DD} -1.85 min., V_{DD} -1.6 max
6	Output voltage swing	V_{OS}	595	750	930	mV	At $R_L=50\Omega$ / +25 $^{\circ}C$
7	Output amplitude rise time	t_R			0.5	ns	At 20~80% V_{CC} / 50 Ω / +25 $^{\circ}C$
8	Output amplitude fall time	t_F			0.5	ns	At 80~20% V_{CC} / 50 Ω / +25 $^{\circ}C$
9	Output amplitude symmetry	DC	45		55	%	At 50% V_O / 50 Ω / +25 $^{\circ}C$
10	Phase Jitter RMS	j_{RMS}		0.16	0.3	ps	At 12kHz~20MHz integrated
12	Current consumption	I_{CC}		100	120	mA	With output load R_L
13	Standby current	I_{STB}		99		μA	Output disabled (pin 1 = LOW)
14	Startup time	t_{STRT}			10	ms	V_{P-P} reach >90% of amplitude

Note 1: Including tolerance at +25 $^{\circ}C$, deviations over operating temperature range, input voltage changes, output load changes, shock and vibration.

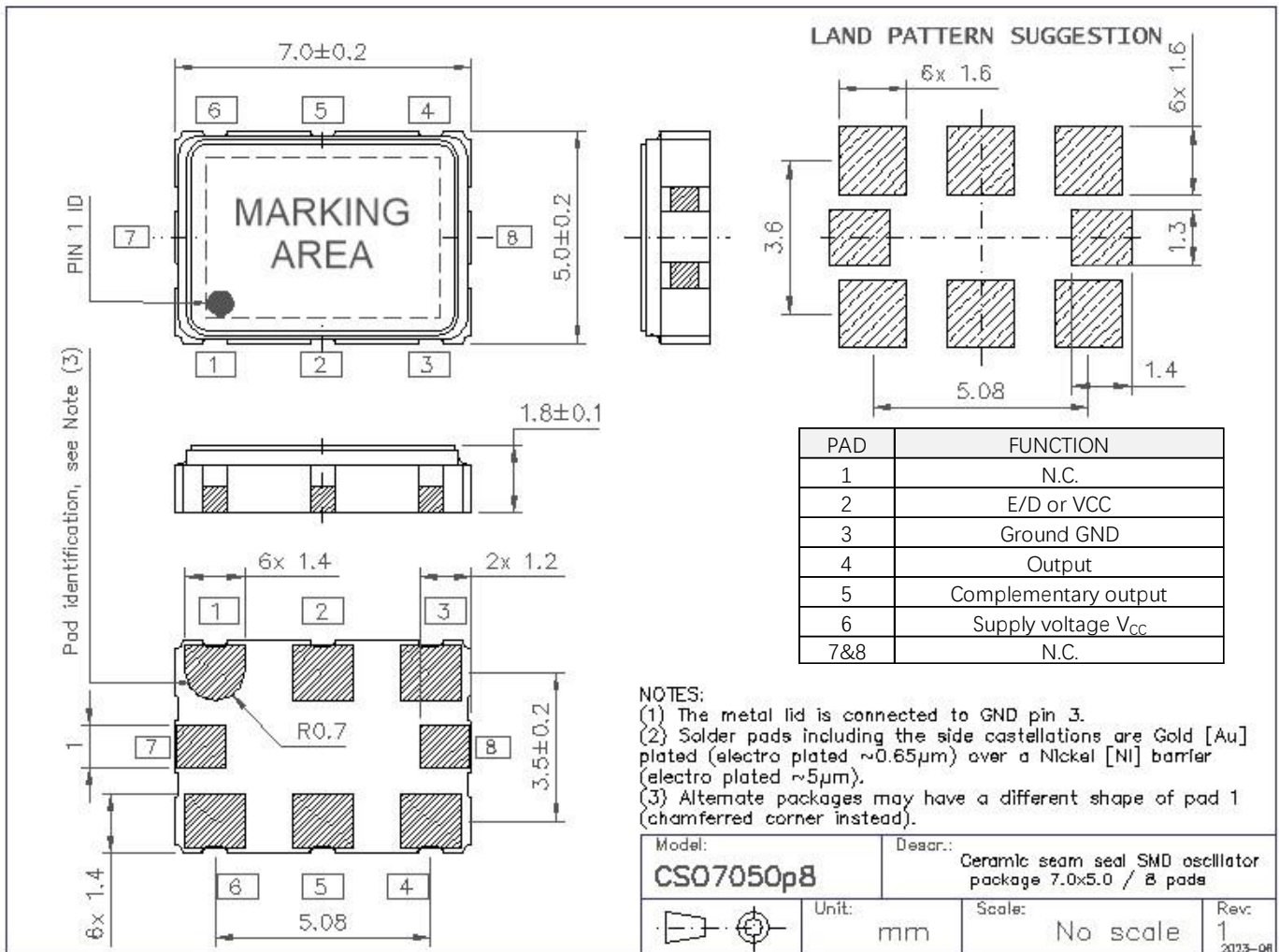
3. PRODUCT MARKING

1	FF.fff	Nominal frequency in MHz (three digits after decimal point)										HCI YM ●FF.fff			
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		



4. OUTLINE DRAWING

	Package descriptions	Package model	Remarks
1	Ceramic seam seal SMD package 7x5mm with 8 pads	CSO7050p8D h18	With E/D function on pin 2



5. 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	No damage

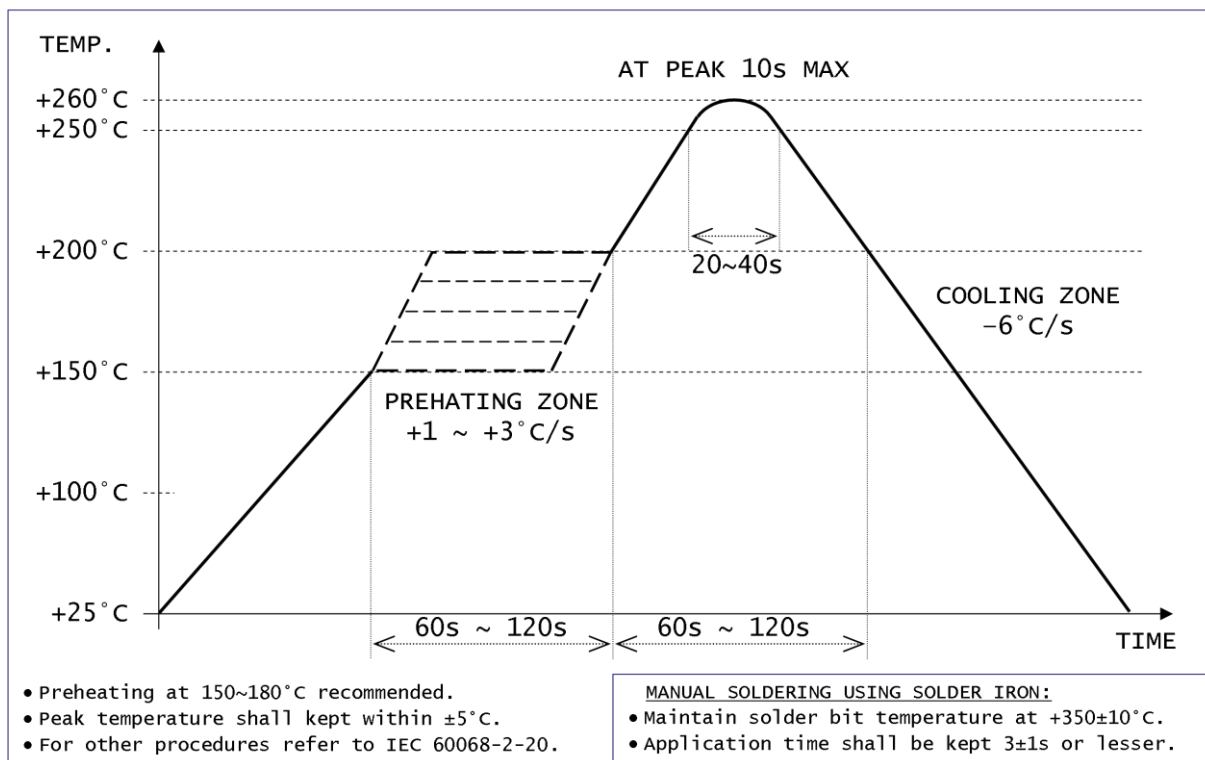
		0.5 kg for at least 60seconds	
10	Resistance to Solder Heat (GB/T 2423.28-2005, Test Tb Meth. 1B)	Reflow at Preheat to 150°C±5°C for 60 to 120sec, and peak 265°C±5°C for 10s±3sec, Tested after 24±2h at room temp.	±5.0ppm

6. ENVIRONMENTAL COMPLIANCE INFORMATION

		Compliance information
1	RoHS	This product is fully RoHS compliant, 6/6 compliant per EU legislation.
2	RoHS 2 / 3	This product is RoHS compliant per DIRECTIVE 2015/863 (also called RoHS10).
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.

7. RECOMMENDED SOLDERING INFORMATION

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



DWG_ReflowProfile_260

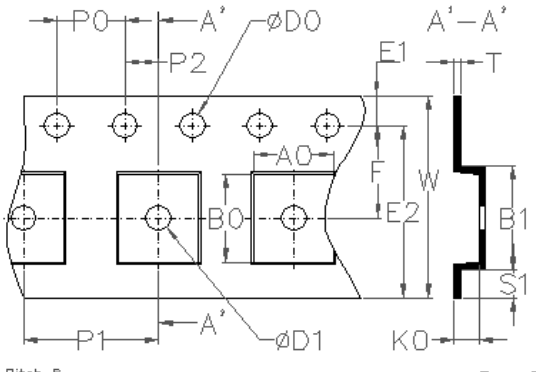
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NO SCALE

Rev.: 1

8. PACKAGING

Carrier

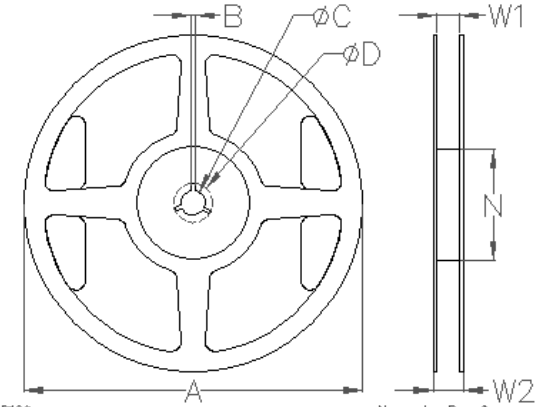
	Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING	
1	A0	5.4±0.1		
2	B0	7.2±0.1		
3	K0	2.0±0.1		
4	B1	8.1±0.1		
5	P0	4.0±0.1		
6	P1	8.0±0.1		
7	T	0.3±0.05		
8	W	16.0±0.2		

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

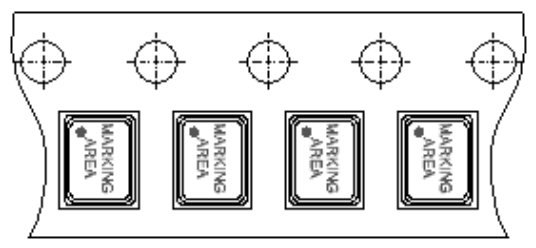
	Parameter	STANDARD PACKAGING	ALTERNATE PACKAGING	
9	A	180 ⁺⁰ _{-1.5}		
10	B	2.0±0.5		
11	ØC	13.2±0.2		
12	ØD	21±0.8		
13	N	62±2		
14	W1	16.8 ^{+2.0} ₋₀		
15	W2	19.2 ^{+2.0} ₋₀		

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)	
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