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：	**OD20S5-50.000-50GDTABL**
MODEL	产品型号：	**OCXO 20*20, Sine wave, 5.0V**
NOMINAL FREQUENCY	频率：	**50.000MHz**
ISSUE DATE	日期：	**2022 / 02 / 25**

CUSTOMER'S APPROVAL

客户确认

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

APPROVED	QA
MB.	J Jiang

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	MB	James Jiang	2022-02-25
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		**50.000**		MHz	--
2	Operating supply voltage range	V_{CC}	4.75	5.0	5.25	V_{DC}	
3	Output load resistance	RL		50		Ω	Sine wave output
4	Operating temperature range	T_{OP}	–40	+25	+85	°C	
5	Storage Temperature Range	T_{ST}	–55		105	°C	--

Note 1: over the whole range, the unit stays within all relevant parameter limits as specified under point 2.

2. ELECTRICAL PARAMETER LIMITS

	PARAMETER	SYMB.	MIN	TYP	MAX	Unit	Conditions / Remarks
1	Initial Frequency Accuracy	$\Delta f/F_N$	–100		+100	ppb	Offset from nominal at +25°C
2	Frequency stability over T_{OP}	$\Delta f/F_{OP}$	–50		+50	ppb	Over T_{OP} Note 1
3	Short Term Stability (in still air)				0.05	ppb/s	Max. 2 times reflow, after 24h
4	Warm-up Time				3.0	min	Within ±100 ppb of final frequency with reference after 1 hour on@+25℃
5	Frequency VS voltage changes	$\Delta f/F_V$	–10		+10	ppb	Vcc ±5% at +25°C
6	Frequency VS load changes	$\Delta f/F_L$	–10		+10	ppb	RL//CL ±10% at +25°C
7	Aging per day	$\Delta f/F_{Ad}$	-2		+2	ppb	Aging after 30 days of operation
8	Aging first year	$\Delta f/F_{A1}$	–200		+200	ppb	
9	Aging over 10 years	$\Delta f/F_{A10}$	–1.0		+1.0	ppm	
10	Output level	V_{P-P}	6.0	8.0	10.0	dBm	Sine wave
11	Harmonic level				-40	dBc	
12	Spurious				-80	dBc	
13	Phase noise	L_{RMS}			–95	dBc/Hz	at 10Hz offset / at +25°C
					–125		at 10Hz offset / at +25°C
					–155		at 1kHz offset / at +25°C
					–165		at 10kHz offset / at +25°C
					–165		at 100kHz offset / at +25°C
14	Operating Current	I_{CC}			800	mA	During warm up
					300	mA	At steady state,@25℃
15	Control Voltage Range	V_C	0	1.5	3.0	V_{DC}	1.5V±1.5V
16	Input Impedance		100			KΩ	
17	Frequency tuning range	F-PULL	-1.0	0.1	+1.0	ppm	Positive Slope
18	Linearity				10	%	

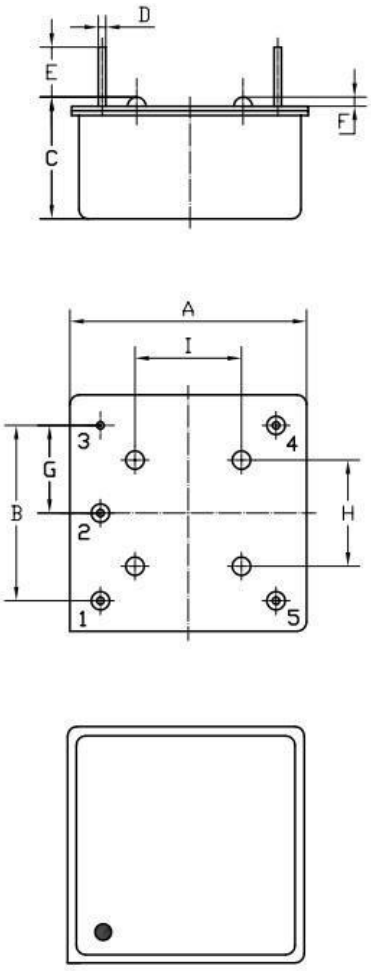
Note 1: Referenced to midpoint between minimum and maximum frequency over specified temperature range.
Note 2: Until frequency is within ±0.5ppm in reference to nominal frequency.

3. PRODUCT MARKING

To be defined.

4. OUTLINE DRAWING

	Package description	Package model	Remarks
1	20x20 DIP type with 5 pins	DIP2020P5	--



Pin No.	Pin Function
1	Vc
2	NC
3	GND
4	Output
5	VS

	Dimension (mm)	
Symbol	Min	Max
A		21.6
B	14.74	15.74
C		12
D	0.6	0.8
E	4.0	5.0
F	0.5	0.7
G	7.52	7.72
H	10.1 nominal	
I	10.1 nominal	

5. TEST CIRCUIT