

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:

5715H6-40.000G33HPNO

MODEL

产品型号:

OCXO 15x10mm SMD, CMOS, 3.3V

NOMINAL FREQUENCY

频率:

40.000MHz

ISSUE DATE

日期:

2024 / 05 / 09

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.**J Jiang*

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Revision	Description / ECN	Prepared	Approved	Date
1	Initial release	<i>MB</i>	<i>James Jiang</i>	2024-05-09
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	40.000			MHz	--
2	Operating supply voltage range	V_{CC}	3.135	3.30	3.465	V_{DC}	
3	Output load capacitance	C_L		15		pF	CMOS level
4	Operating temperature range	T_{OP}	-20	+25	+70	°C	
5	Storage Temperature Range	T_{ST}	-40		+90	°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		+00	ppb	Offset from nominal at +25°C
2	Frequency stability over T_{OP}	$\Delta f/F_{OP}$	-20		+20	ppb	Over T_{OP} Note 1
3	Short Term Stability (in still air)				0.05	ppb/s	After power on 1h
4	Warm-up Time				3.0	min	Within ± 100 ppb of final frequency with reference after 1 hour on@+25°C
5	Frequency VS voltage changes	$\Delta f/F_V$	-2.0		+2.0	ppb	$V_{CC} \pm 5\%$ at +25°C
6	Frequency VS load changes	$\Delta f/F_L$	-2.0		+2.0	ppb	$C_L \pm 10\%$ at +25°C
7	Aging per day	$\Delta f/F_{Ad}$	-1.5		+1.5	ppb	Aging after 30 days of operation
8	Aging first year	$\Delta f/F_{A1}$	-200		+200	ppb	
9	Aging 10 years	$\Delta f/F_{A10}$	-1.0		+1.0	ppm	
10	Output voltage level HIGH	V_{OH}	2.4			V_{DC}	CMOS level
12	Output voltage level LOW	V_{OL}			0.4	V_{DC}	CMOS level
13	Output amplitude rise/fall time	$t_{R/F}$			5	ns	At 20~80% V_{CC} / +25°C
14	Output amplitude symmetry	DC	45		55	%	At 50% V_{CC} / 15pF / +25°C
15	Phase noise	L_{RMS}			-90	dBc/Hz	at 10Hz offset / at +25°C
					-120		at 100Hz offset / at +25°C
					-145		at 1kHz offset / at +25°C
					-150		at 10kHz offset / at +25°C
					-150		at 100kHz offset / at +25°C
16	Operating Current	I_{CC}			750	mA	During warm up
					250	mA	At steady state, @25°C
17	Control Voltage Range	V_C				V_{DC}	NA
18	Frequency tuning range	F_{-PULL}				ppm	NA

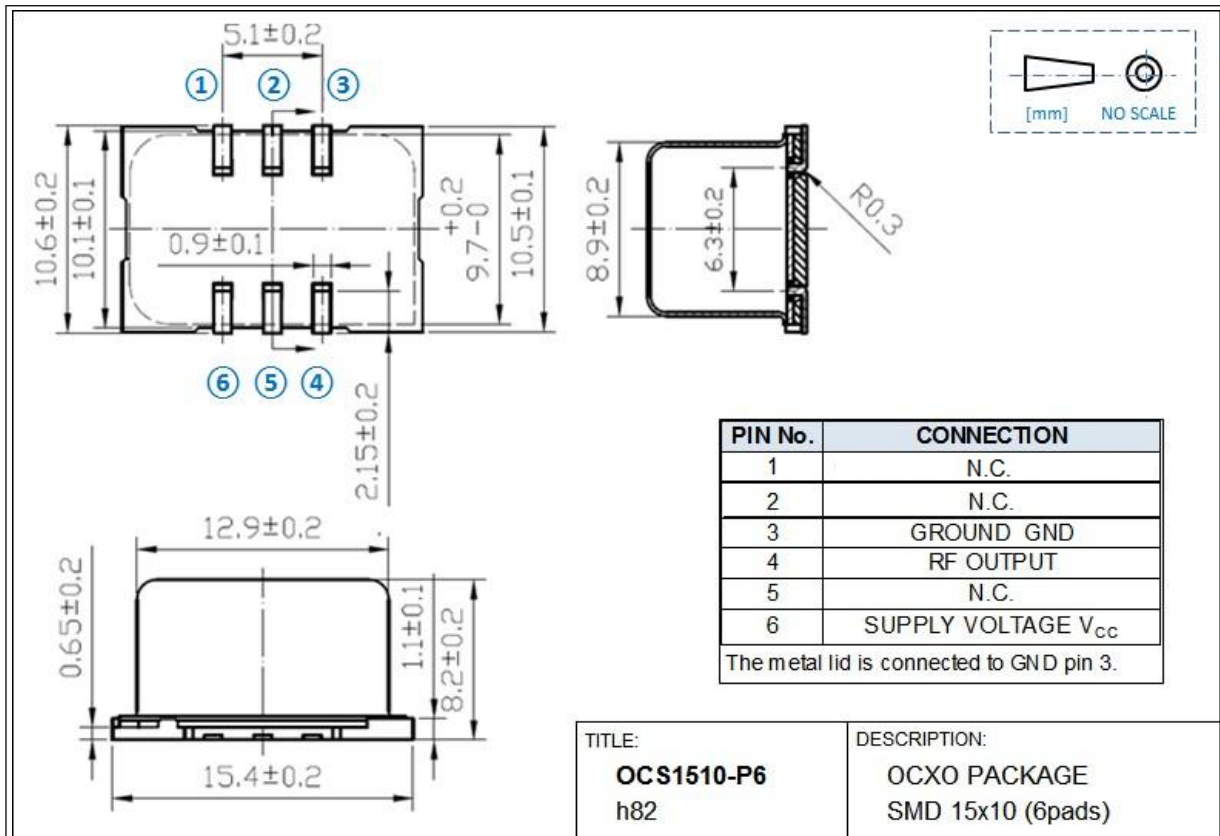
Note 1: Referenced to midpoint between minimum and maximum frequency over specified temperature range.

3. PRODUCT MARKING

1	FF.fff	Nominal frequency in MHz (three digits after decimal point)										HCI YM FF.fff ● H33LDT				
2	HCI	Company logo														
3	Y	Year code of manufacturing (see table below)														
	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025			
	Code	O	P	Q	R	S	T	U	V	W	X	Y	Z			
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			

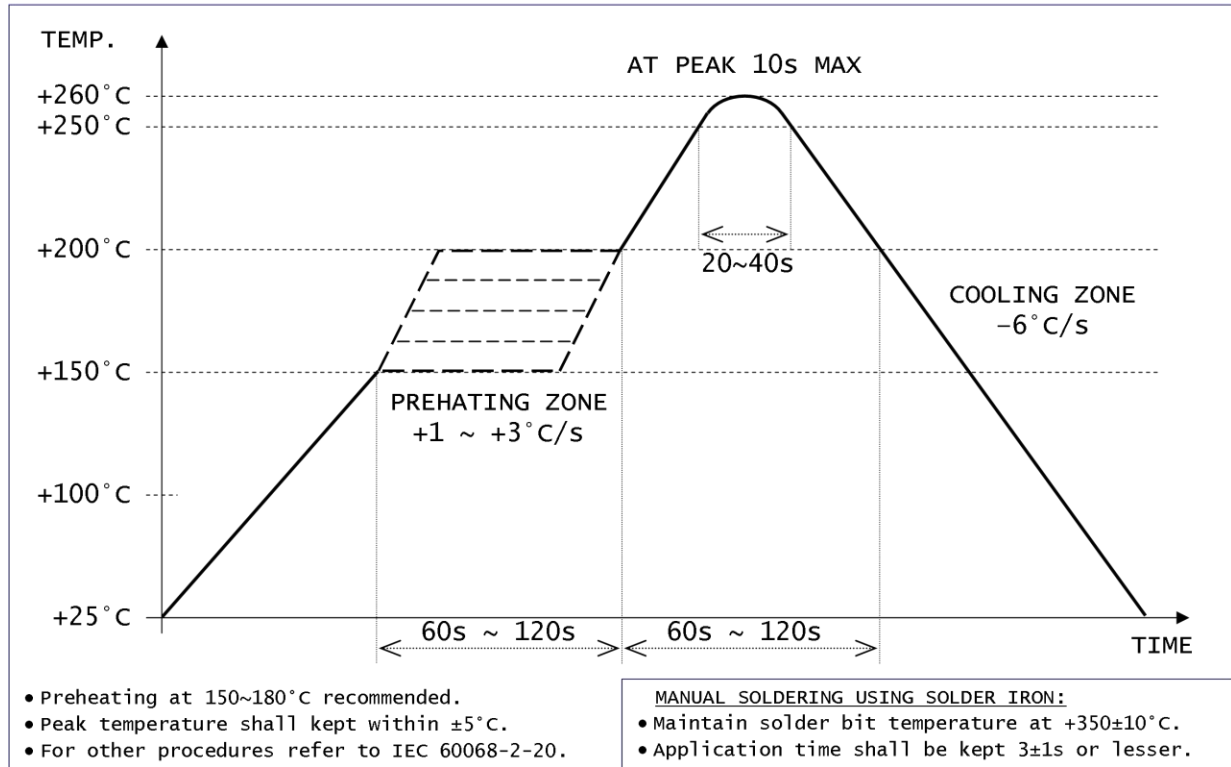
4. OUTLINE DRAWING

	Package description	Package model	Remarks
1	15x10 SMD with 6 pads	OS1510P6h82	--



5. RECOMMENDED SOLDERING INFORMATION

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



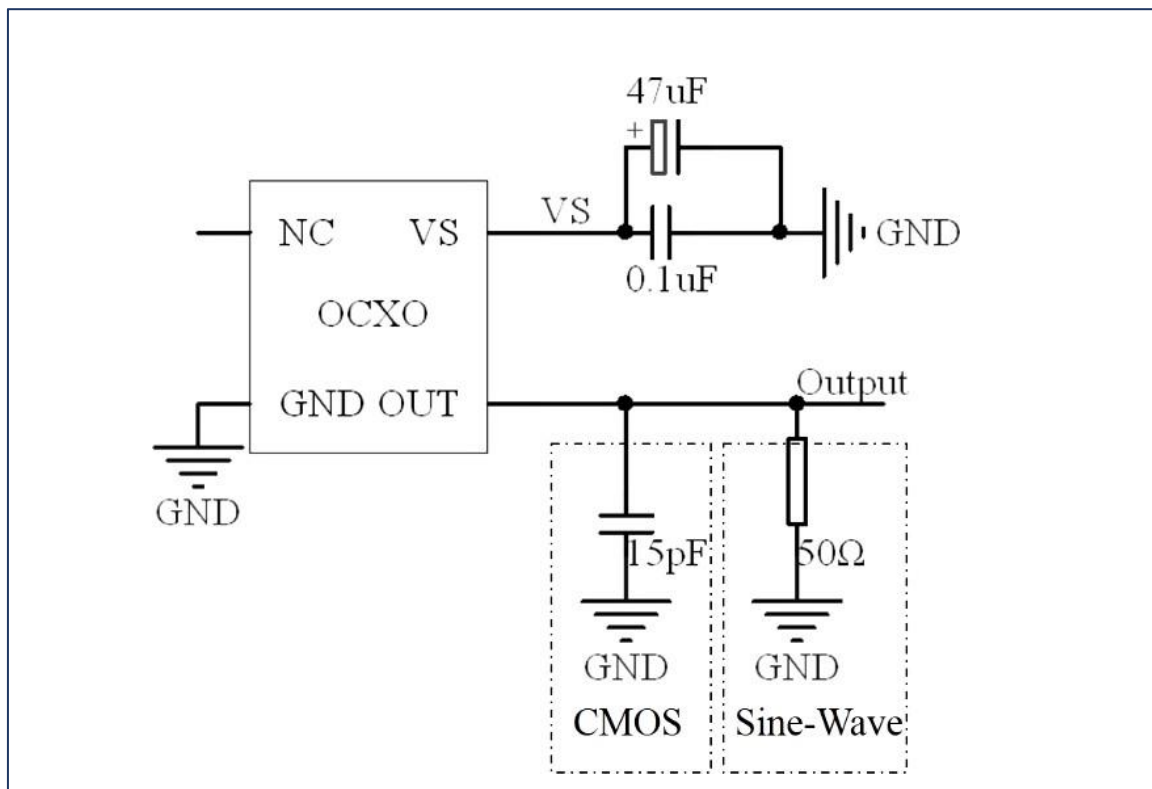
DWG_ReflowProfile_260

HCI QE 2014/10

NO SCALE

Rev.: 1

6. TEST CIRCUIT



7. ENVIRONMENTAL COMPLIANCE INFORMATION

▪ RoHS COMPLIANCE

We can certify herewith that the product is fully RoHS complaint according the “DIRECTIVE 2011/65/EU OF THE EUROPEAN COUNCIL and DIRECTIVE 2015/863 (RoHS 2 or also called RoHS 10) in electrical and electronic equipment (RoHS) and its amendments.

▪ ELECTROSTATIC DISCHARGE (ESD) SENSITIVITY

This product is sensitive to ELECTROSTATIC DISCHARGE (ESD) / HBM 2kV, precautions for handling and storage shall be applied based on suggested internal standards listed below.

(JEITA EIAJ ED-4701 / JSD22 / ANSI-ESD-S20-20 / IEC 61000-4-2)

▪ MOISTURE SENSITIVITY (MSL) CLASSIFICATION [J-STD-020C]

This product in a hermetically sealed package does NOT fall under the classification of moisture sensitivity per above stated standard (standard is for non-hermetically sealed components).

If customer's system requires an entry in this regard we suggest using LEVEL 1.

8. PACKAGING INFORMATION

- T&R packaging in compliance to EIA-481
Reel DIA: 330mm
QTY per reel: 500pcs MAX
- Alternate packaging in antistatic foam trays (may used based on QTY ordered)
Foam tray size: 121x150mm
QTY per tray: 50pcs MAX