



Customer	
Customer P/N	
Product Type	Crystal --- 49/US (Dip --- 11.5 * 5.0 * 3.6 mm)
Nominal Frequency	16.000 MHz
Mercury P/N	HUSG-16.000-18-20/30I



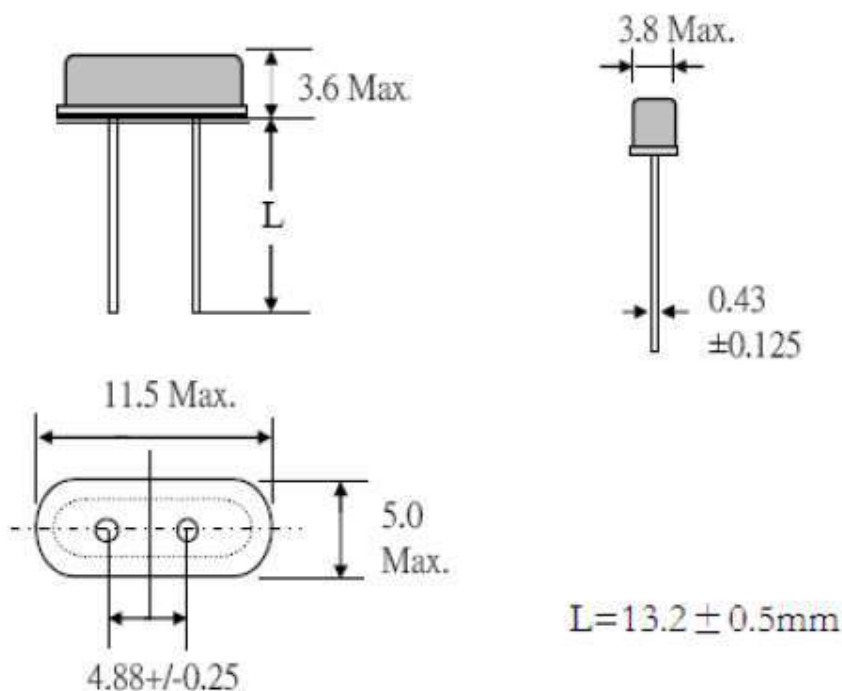
Series No. : F20220802001

Date : 2022/8/2

Electrical Specification

	Parameters	SYM.	Electrical Spec.				Notes
			Min.	Typical	Max.	Unit	
1	Mercury Part No.		-				HUSG-16.000-18-20/30I
2	Nominal Frequency	FL	16.000000			MHz	
3	Holder Type		-				49/US (Dip --- 11.5 * 5.0 * 3.6 mm)
4	Crystal Cut		-				AT-Cut
5	Mode of Oscillation		-				Fundamental Mode
6	Frequency Tolerance	F_use	-20		20	ppm	at 25°C ± 3°C
7	Frequency Stability	F_tem	-30		30	ppm	Refer at 25°C
8	Spurious Attenuation	SPDB		-4		dB	Search Range(+/- 5000ppm)
9	Equivalent Series Resistance	RR			40	Ω	
10	Shunt Capacitance	C0			7.0	pF	
11	Load Capacitance	CL		18		pF	
12	Drive Level	DL		100		uW	
13	MaxR	DLD2		10.0		Ω	0.1 uw ~ 100 uW , 10 points
14	MaxFR-MinFR	FDDL		10.0		ppm	0.1 uw ~ 100 uW , 10 points
15	Operating Temperature	T_opr	-40		85	°C	
16	Storage Temperature	T_stg	-55		125	°C	
17	Aging	F_aging			5	ppm	First year
18	Lead Free Approved Report	SGS Taiwan Ltd. Report No. : CE_2020_50132					

Package Dimension (Unit : mm)



Marking

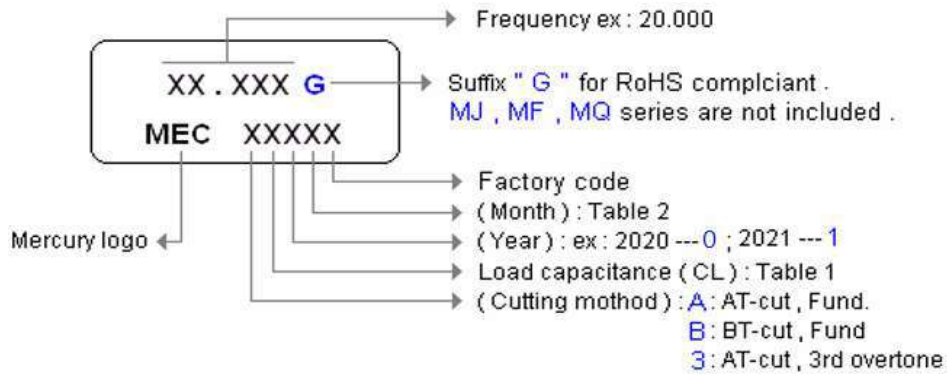


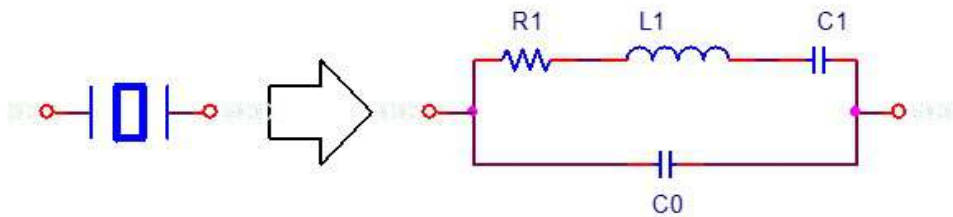
Table 1

CL	<10	10	11	12	13	14	15	16	17	18	19	20
Code	A	B	C	D	E	F	G	H	I	J	K	L
CL	21	22	23	24	25	26	27	28	29	30	31	32
Code	M	N	O	P	Q	R	S	T	U	V	W	X
CL	33	34	>34	Series								
Code	Y	Z	a	b								

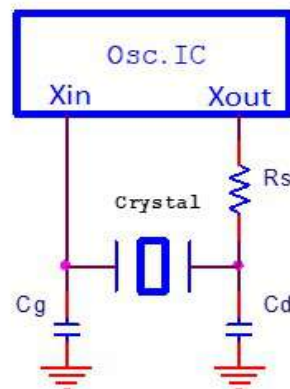
Table 2

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Code	A	B	C	D	E	F	G	H	I	J	K	L

Equivalent Circuit of crystal



Oscillation circuit





Environmental Specification

1. Temperature Test

*Temperature Cycling Test

Conditions:	Steps of cycle	(1)At+55 °C , 30minutes	(3)At+85 °C , 30minutes
		(2)At+25 °C , 10~15minutes	(4)At+25 °C , 10~15minutes
	Number of	3 times	
Results:	Performance form of tested products must remain within specifications.		

*Thermal Shock Test

Conditions:	Temperature T(H)+125 °C ,T(L)-55 °C	Duration of cycle 3 times
	Exposure time at temperature extremes 5minutes	
Results:	Performance form of tested products must remain within specifications.	

*Low Temperature Test

Conditions:	Temperature -20 °C±2 °C	Duration of test 96hours
Results:	There Should be no stain on surface of products	
	Frequency and wave form of tested products must remain within specifications.	

2. Aging Test

Conditions:	Temperature +85 °C±2 °C	Duration of test 96 hours
Results:	Deviation of frequency must be less than±3ppm	(+/-0.0003%)

3. Salt Spray Test

Conditions	Temperature 35 °C±2 °C	Duration of test 48 hours
	NaCl 5%	

4. Humidity Test

Conditions:	Temperature:+40°C+/-2°C	Relative humidity:90~95%	Duration of test:96 hours
Results:	Insulation resistance must be 500Mohm/100 minimum Vdc.		
	Resistance and wave form must remain within specification		

5. Fine Leak Test

Conditions:	Helium
Results:	Less than 2×10-8 Atm cc/sec



Mechanical Specification Sheet

1.Vibration Test

Conditions:	Frequency	10-55 Hz
	Amplitude	0.762 mm
	Sweep	1.0 minute
	Duration	2 hours
Results:	Performance form of tested products must remain within specifications.	

2.Drop Test

Conditions:	Method of drop	Free drop
	Dropping floor	Hard wood board
	Height	75 cm
	Number of drops	3 times
Results:	Frequency and wave form of tested products must remain within specifications.	

Notice :

- 1 Mercury requires the copy of this specification returned with approved.
- 2 Any change to these specification have to be agreed by both parties and new revision of the specification will be issued .