



HOSONIC ELECTRONIC CO., LTD.



SMD CRYSTAL OSCILLATOR SPECIFICATIONS

Customer	
Customer P/N	
Product	7050 OSC
Nominal Frequency	4.000000MHz
HOSONIC P/N	D7SX4E000000UE
Version	10C0
Issue Date	2020/12/15

HOSONIC		
Drawn	Checked	Approved
Drawn		
LUCY	Richard	JOHN

Approved By Customer : _____



HOSONIC ELECTRONIC CO., LTD.



Revised Record

Rev.	Rev. Date	Item	Content	Remark
1.0	2020-12-15		Initial released	

I ELECTRICAL PARAMETERS

No.	Item	Symb.	Electrical Specification				Remark	
			Min.	Typ.	Max.	Units		
1	Nominal Frequency	F0	4.000000			MHz		
2	Frequency Stability		-50		50	ppm	All condition*	
3	Operating Temperature Range	TOPR	-40		85	°C		
4	Storage Temperature	TSTG	-55		125	°C		
5	Power supply Voltage	V _{DD}	3.3±10%			V		
6	Aging Per Year	Fa	-3.0		3.0	ppm	First Year	
7	Supply current	I _{DD}			8	mA		
8	Output symmetry	Sym	45		55	%		
9	Rise time	Tr			6.0	ns	10%~90%V _{DD}	
10	Fall time	Tf			6.0	ns	90%~10%V _{DD}	
11	Output voltage	V _{OH}	90%			V _{DD}		
		V _{OL}			10%	V _{DD}		
12	Output load Hcmos Load				15	pF		
13	Start-up time				10	mS		
14	Pin 1, E/D function	pin 1=H or open.....output active at pin 3 pin 1=L.....high impedance at pin 3						
15	Package type	D7SX						

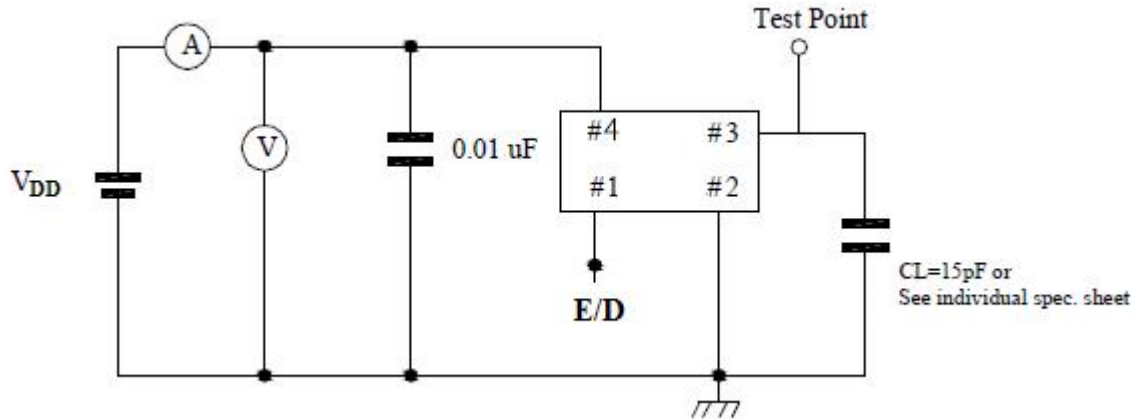
NOTE: Storage Temperature is only for the product itself,the temperature for the packing material is -4~40°C.

All condition*: Include 25°C tolerance, operating temperature range , input voltage change, aging, load change.

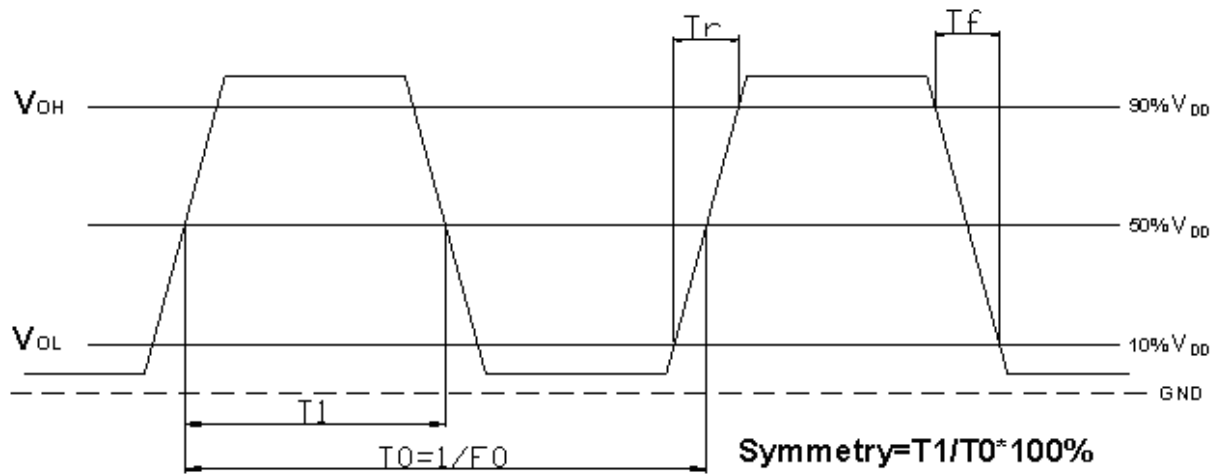
I STORAGE REQUIRMENT

Storage environmental conditions: -4~40°C, 70%RH max.

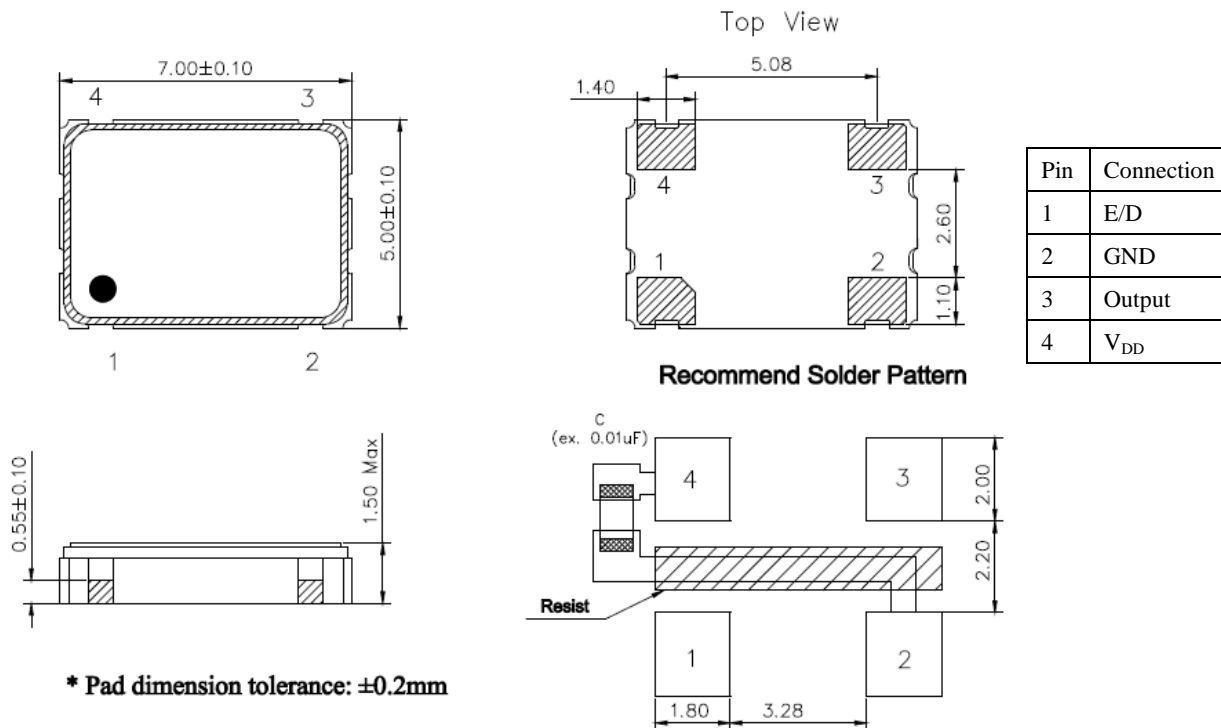
Maximum storage time: 24 Months from date of manufacture.

I HCMOS TEST CIRCUIT


Enable/Disable Function	
Input (pin 1)	Output (pin 3)
Open	Enable
$V_{IH} \geq 0.7V_{DD}$	Enable
$V_{IL} \leq 0.3V_{DD}$	Disable

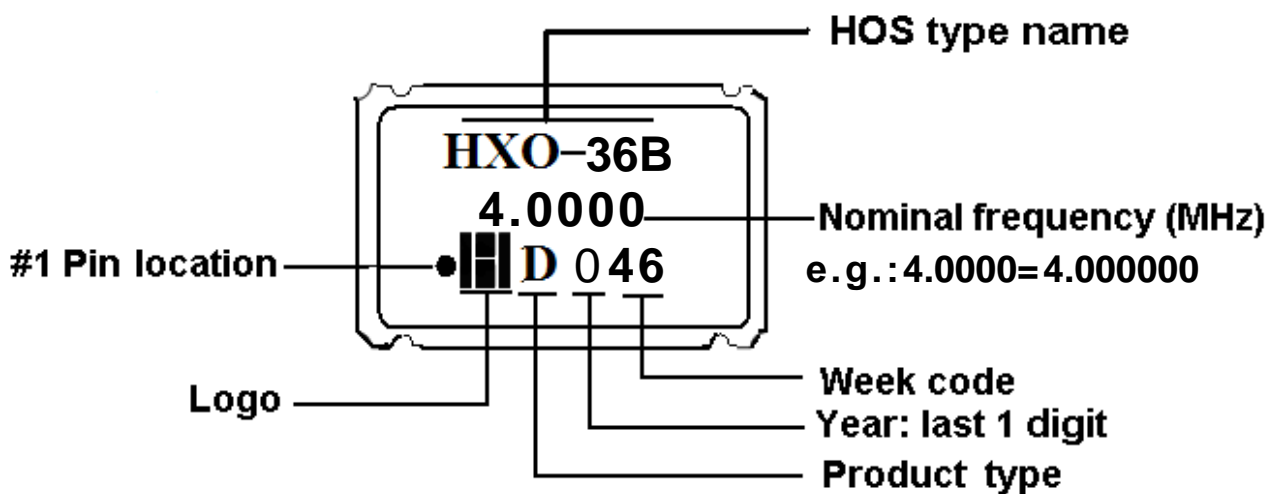
I HCMOS OUTPUT WAVEFORM


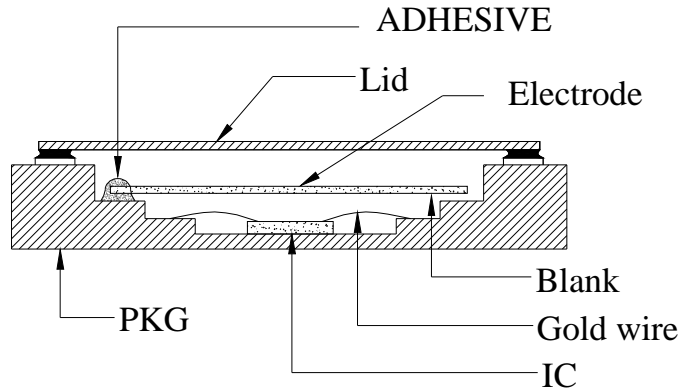
I OUTLINE DIMENSIONS (unit: mm)



- Note:
- 0.01uF bypass capacitor should be placed between V_{DD} (pin 4) and GND (pin 2) to minimize power supply line noise;
 - Line shouldn't be layed under the oscillator in the PCB to minimize signal interference.
 - The Load we advise is only 15pF (that means drive only 1 CMOS/TTL gate).

I MARKING

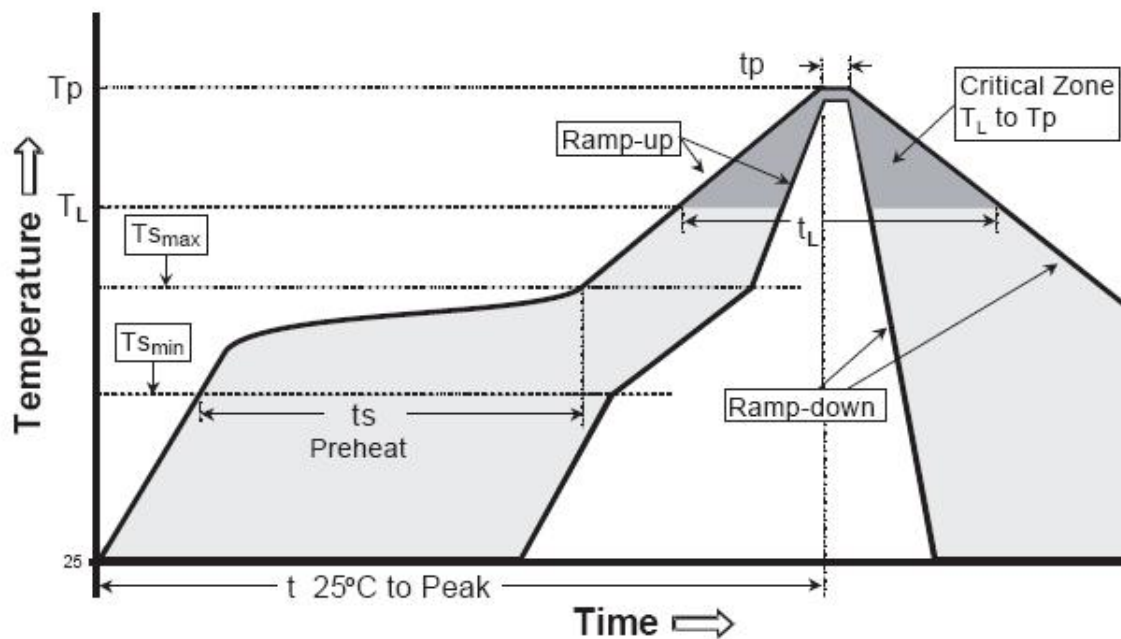


I PRODUCT LAYOUT


NO.	PART	MATERIAL	REMARK
1	LID	KOVAR(Fe+Co+Ni alloy)	
2	PKG	Al ₂ O ₃	Base
3	BLANK	SiO ₂	Quartz
4	ADHESIVE	Ag/Silicon	Support
5	Electrode	Noble metal	
6	IC	Si	
7	Gold wire	Au	Connect

I REFLOW PROFILES

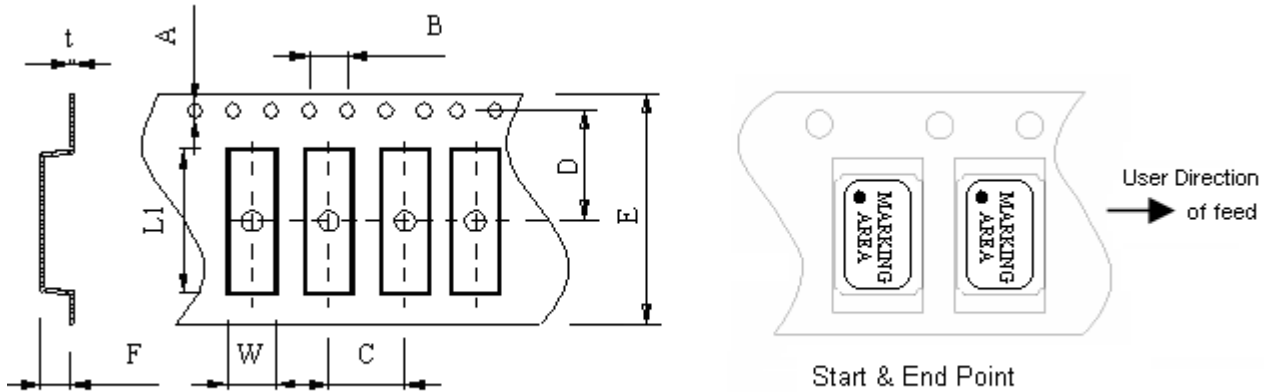
Profiles Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts max to Tp)	3°C/second max.
Preheat	
■ Temperature Min (Ts min)	125°C
■ Temperature Max (Ts max)	200°C
■ Time (ts min to ts max)	60~180 seconds
Time maintained above	
■ Temperature (T _L)	217°C
■ Time (t _L)	60~150 seconds
Peak/Classification Temperature (Tp)	260°C
Time within 5°C of actual Peak Temperature (t _p)	20~40 seconds
Ramp-down rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.
Suggest reflow times	3 Times max



Remark: To reference JEDEC J-STD-020

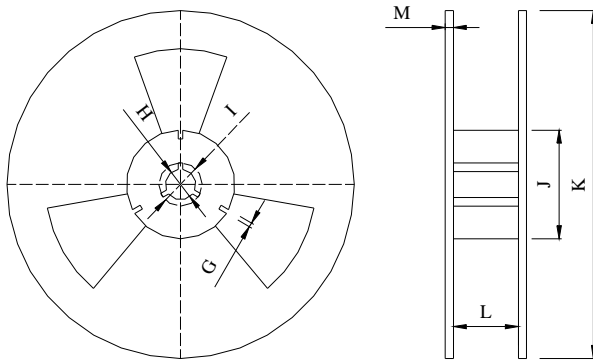
I PACKAGE(reference to EIA-481)

Tape Dimensions(unit : mm)



A	B	C	D	E	F	L1	W	t
1.50±0.2	4.0±0.2	8.0±0.1	7.5±0.2	16.0±0.2	2.0	7.4±0.1	5.4±0.1	0.3

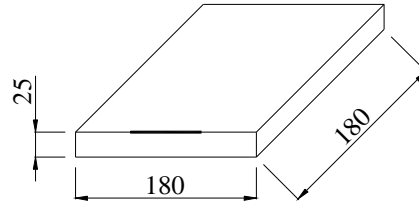
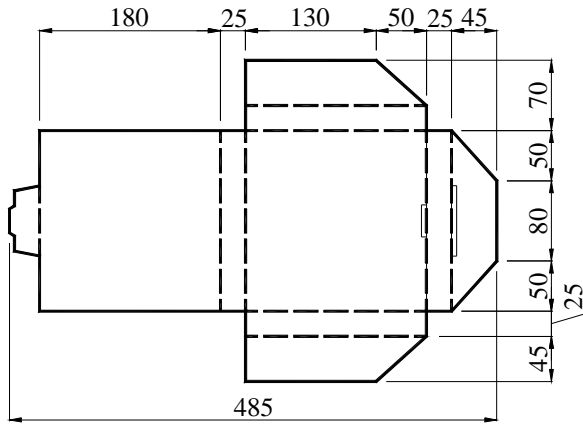
Reel Dimensions(unit: mm)



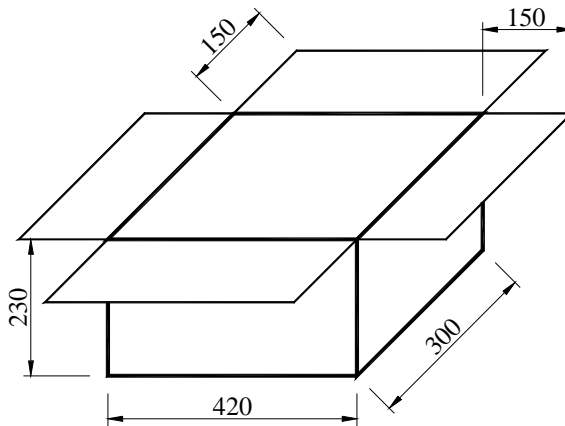
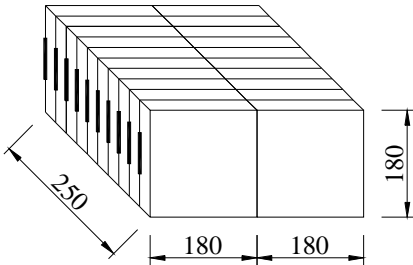
G	H	I	J	K	L	M
2.5	13.5	21.6	60.0	178	17.5	1.6

*1000pcs/Reel

Carton Dimension (unit : mm)



1 reel = 1 Inner box



20 Inner boxes = 1 Carton

20kpcs = 1 Carton

I RELIABILITY SPECIFICATIONS

No.	Test Item	Test Conditions	Reference
1	High Temperature Storage	Temperature: $125^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Time: 1000 ± 12 Hours	MIL-STD-202 Method 108
2	Temperature Cycle	Temperature 1: $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Temperature 2: $125^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Temperature change between T1 and T2 at soonest Run 1000 cycles, maintain T1 and T2 5minutes each in one cycle	JESD22 Method JA-104
3	Solder Heat Resistance	Pre-heat: 125°C 60~120 Seconds Solder Temperature: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 30 Seconds	MIL-STD-202 Method 210
4	Drop Test	3 Times Free Fall from 150cm height to concrete floor.	IEC 68-2-32
5	High Temperature, High Humidity Storage	Temperature: $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Relative Humidity: 80%--85% Time: 250Hours ± 12 Hours	MIL-STD-202 Method 103
6	Steam Aging	Temperature: $97^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Time: 24 Hours 260°C solder pot to check solderability	J-STD-002
7	Solderability	Dip in flux 5~10 seconds Temperature: $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 10 Seconds	J-STD-002
8	Aging	Temperature: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Time: 250 ± 12 Hours	MIL-STD-202 Method 108
9	Thermal Shock	Temperature 1: $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Temperature 2: $125^{\circ}\text{C} \pm 3^{\circ}\text{C}$ Temperature change between T1 and T2: 5 seconds 100 cycles, maintain T1 and T2 for 30 minutes each in one cycle	MIL-STD-202 Method 107
10	Vibration	Frequency Range: 10Hz~2000Hz Amplitude: 1.5mm or 20G 4Hours in each direction, total 12Hours	MIL-STD-202 Method 204

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Standard Clock Oscillators](#) category:

Click to view products by [Hosonic](#) manufacturer:

Other Similar products are found below :

[601252](#) [F335-25](#) [F535L-33.333](#) [F535L-50](#) [ASV-20.000MHZ-LR-T](#) [MXO45HS-2C-66.6666MHZ](#) [NBXDBB017LN1TAG](#) [SiT1602BI-22-33E-50.000000E](#) [SiT8209AI-32-33E-125.000000](#) [SIT8918AA-11-33S-50.000000G](#) [SM4420TEV-40.0M-T1K](#) [SMA4306-TL-H](#) [F335-24](#) [F335-40](#) [F535L-10](#) [F535L-12](#) [F535L-16](#) [F535L-24](#) [F535L-27](#) [F535L-48](#) [PE7744DW-100.0M](#) [ASF1-3.686MHZ-N-K-S](#) [ASV-4.000MHZ-LCS-T](#) [XLH735025.000JU4I8](#) [XLP725125.000JU6I8](#) [XO57CTECNA3M6864](#) [ECS-2100A-147.4](#) [601251](#) [EP16E7E2H26.000MTR](#) [SiT8503AI-18-33E-0.200000X](#) [SIT8918AA-11-33S-16.000000G](#) [SIT9122AI2C233E300.000000X](#) [XO37CTECNA20M](#) [XO3003](#) [9120AC-2D2-33E212.500000](#) [9102AI-243N25E100.00000](#) [8208AC-82-18E-25.00000](#) [ASDK2-32.768KHZ-LR-T3](#) [8008AI-72-XXE-24.545454E](#) [8004AC-13-33E-133.33000X](#) [AS-4.9152-16-SMD-TR](#) [ASFL1-48.000MHZ-LC-T](#) [632L3I004M00000](#) [SIT8920AM-31-33E-25.0000](#) [DSC1028DI2-019.2000](#) [9121AC-2C3-25E100.00000](#) [9102AI-233N33E100.00000X](#) [9102AI-233N25E200.00000](#) [9102AI-232H25S125.00000](#) [9102AI-133N25E200.00000](#)