

SMD CRYSTAL UNIT SPECIFICATIONS

Customer	FOXCONN
Customer P/N	
Product	2016 Seam Sealing Crystal
Nominal Frequency	40.000000MHz
HOSONIC P/N	E1SB40E00000ZE
Version	10C0
Issue Date	2020/9/21

HOSONIC		
Drawn	Checked	Approved
LUCY	ZOE	JOHN

Approved By Customer : _____



HOSONIC ELECTRONIC CO., LTD.



Revised Record

Rev.	Rev. Date	Item	Content	Remark
1.0	2020-09-21		Initial released	

I ELECTRICAL PARAMETERS

Electrical characteristics measured by S&A250B or equivalent.

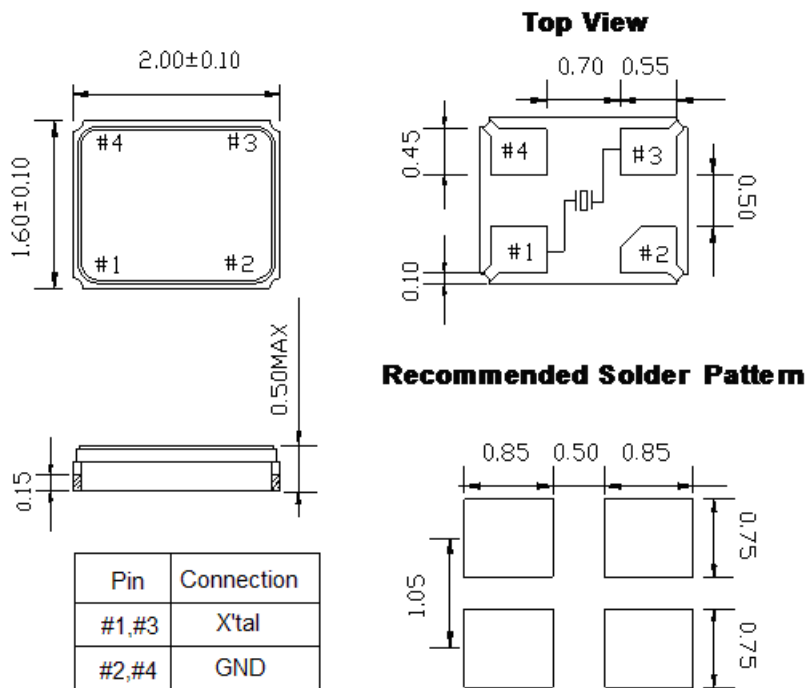
No.	Item	Symb.	Electrical Specification				Remark
			Min.	Typ.	Max.	Units	
1	Nominal Frequency	F0	40.000000			MHz	
2	Crystal cutting type		AT cut				
3	Mode of Vibration		Fundamental				
4	Frequency Tolerance	$\Delta F/F0$	-10	-	10	ppm	At 25°C±3°C
5	Operating Temperature Range	T _{OPR}	-40	-	85	°C	
6	Frequency Stability (over operating temperature)	TC	-15	-	15	ppm	Ref. to 25°C
7	Storage Temperature	T _{STG}	-55	-	125	°C	
8	Load capacitance	CL	-	8	-	pF	S&A 250B
9	Equivalent Series Resistance	ESR	-	-	60	Ω	
10	Drive Level	DL	-	50	100	μW	
11	Insulation Resistance	IR	500	-	-	MΩ	At 100V _{DC}
12	Shunt Capacitance	C0	-	0.78	2	pF	
13	C0/C1		-	290	-		± 30%
14	Pulling Sensitivity	TS	-	17	-	ppm/pF	
15	RLD2		-	-	60	Ω	
16	DLD2		-	-	18	Ω	
17	SPDB		-	-	-3	dB	±5000ppm
18	Aging Per Year	Fa	-2	-	2	ppm	First Year
19	Unit weight		-	0.006	-	g/pcs	± 15%
20	Package type	E1SB					

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

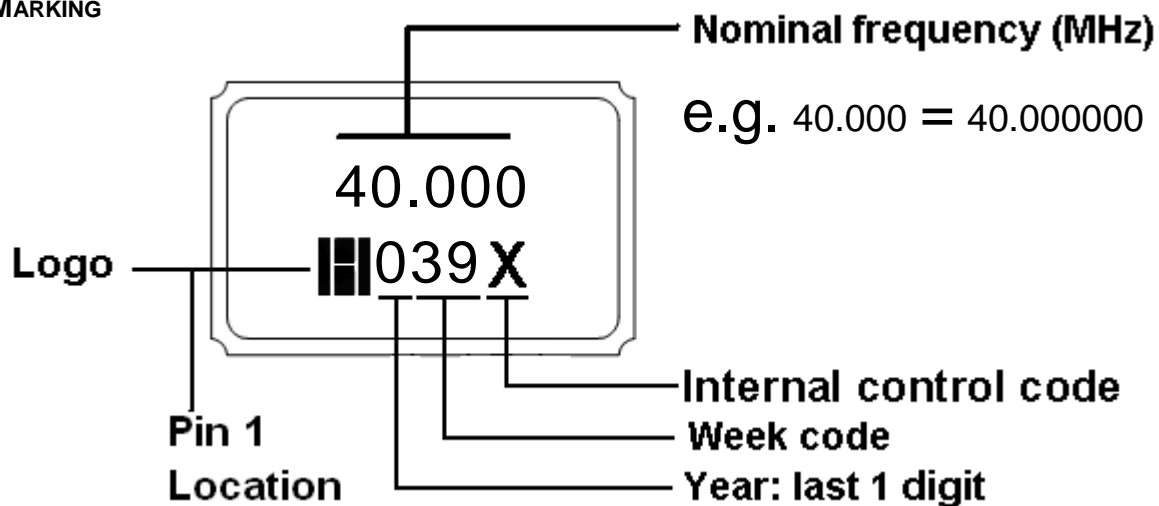
I STORAGE REQUIRMENT

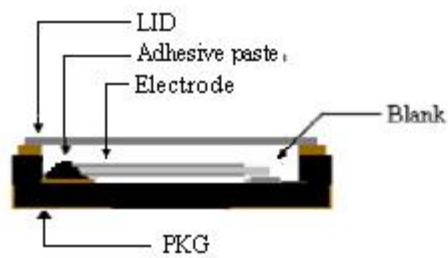
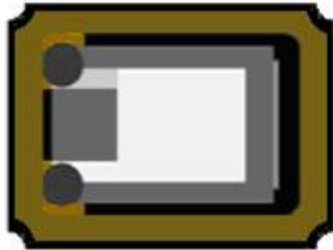
Storage environmental conditions: -4~40°C, 70%RH max.

Maximum storage time: 24 Months from date of manufacture.

I OUTLINE DIMENSIONS (UNIT: mm)


*unlabeled tolerance: ± 0.1mm

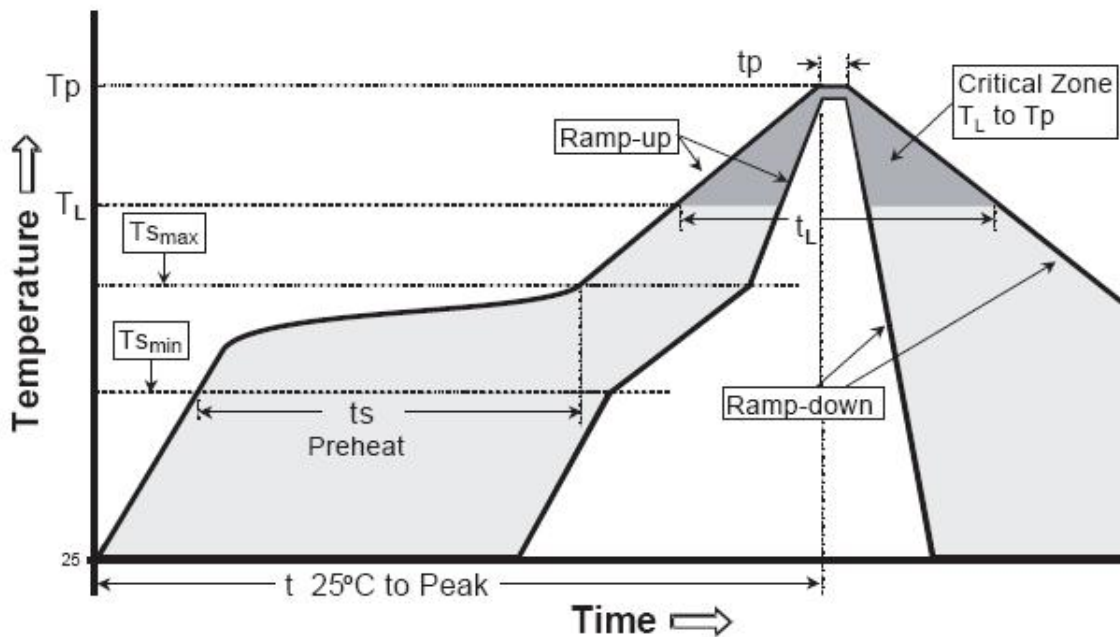
I MARKING


I PRODUCT LAYOUT


NO.	Part	Material	Remark
1	LID	KOVAR(Fe+Co+Ni alloy)	
2	PKG	Al ₂ O ₃	Base Surface plating(Pad): Nickel:1.27~8.89μm Au:0.2~1.0μm
3	Blank	SiO ₂	Quartz
4	Adhesive paste	Ag/Silicon	Support
5	Electrode	Noble metal	

I REFLOW PROFILES

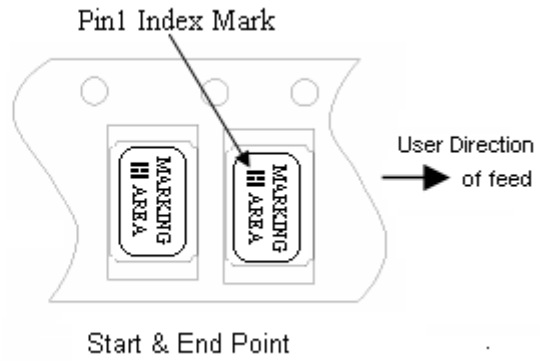
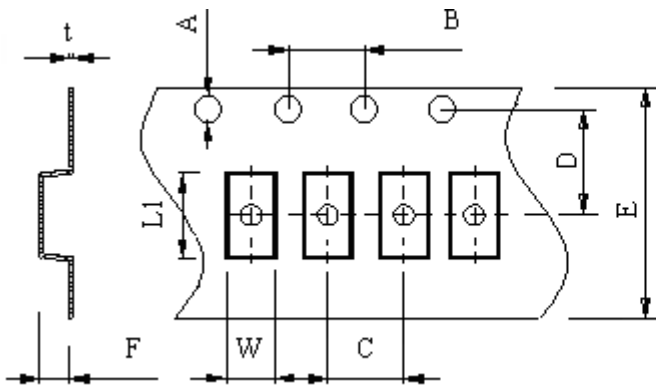
Profiles Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts max to Tp)	3°C/second max.
Preheat <ul style="list-style-type: none"> ■ Temperature Min (Ts min) ■ Temperature Max (Ts max) ■ Time (ts min to ts max) 	125°C 200°C 60~180 Sec.
Time maintained above <ul style="list-style-type: none"> ■ Temperature (T_L) ■ Time (t_L) 	217°C 60~150 Sec.
Peak/Classification Temperature (Tp)	260°C
Time within 5°C of actual Peak Temperature (t _p)	20~40 Sec.
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

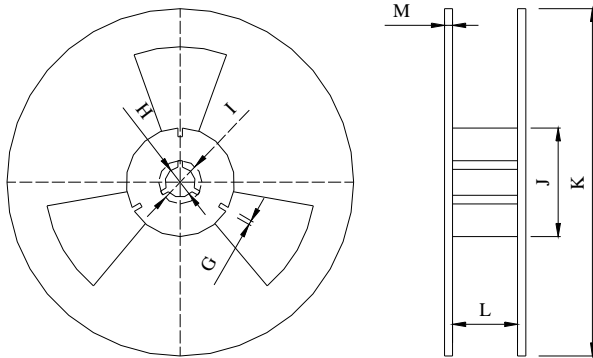
I PACKAGE(reference to EIA-481)

Tape Dimensions(unit : mm)



A	B	C	D	E	F	L1	W	t
1.50	4.0	4.0	3.5	8.0	0.65	2.25	1.85	0.2

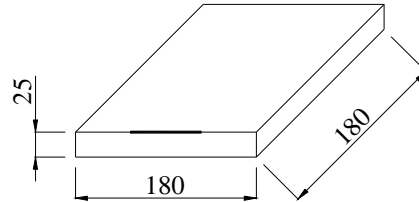
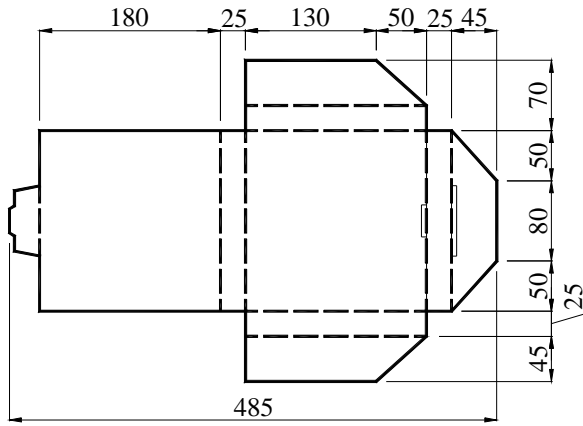
Reel Dimensions(unit: mm)



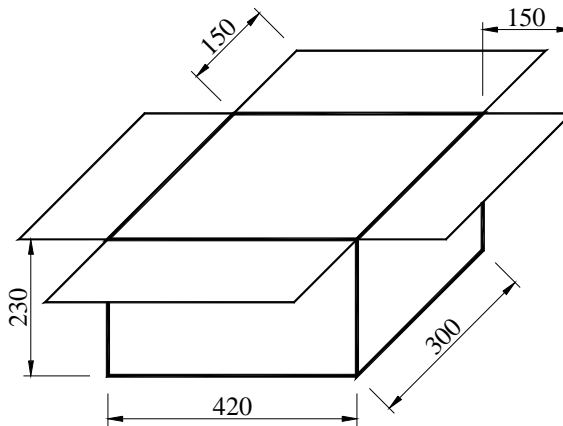
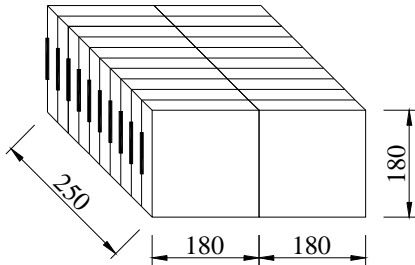
G	H	I	J	K	L	M
2.5	13.5	21.6	60.0	178	9.5	1.6

*3000pcs/Reel

Carton Dimension (unit : mm)



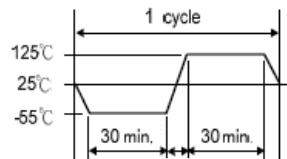
1 reel = 1 Inner box



20 Inner boxes = 1 Carton

60kpcs = 1 Carton

I RELIABILITY SPECIFICATIONS

No.	Test Item	Test Conditions	Reference
1	High Temp. Storage	Temp.: 125°C±5°C Time: 1000±12Hrs	MIL-STD-883 Method 108
2	Low Temp. Storage	Temp.: -40°C±5°C Time: 1000±12Hrs	JIS-C7021 B-12
3	Solder Heat Resistance	Pre-heat: 125°C 60~120 Sec. Solder Temp.: 260°C±5°C Time: 30 Sec.	MIL-STD-202 Method 210
4	High Temp., High Humidity Storage	Temp.: 85°C±5°C Relative Humidity: 80%--85% Time: 1000Hrs	MIL-STD-202 Method 103
5	Thermal Shock	Temp.1: -55°C±5°C Temp.2: 125°C±5°C Temp. change: 1min. max. 1000 cycles, maintain T1 and T2 for 30min.max each in one cycle 	JESD22 JA-104
6	Pressure Cooker Storage	121 ± 3°C , RH100% , 2 bar , 240Hrs	EIA-JESD22 A102
7	Drop Test	3 Times Free Fall from 150cm height table to concrete floor	IEC60068-2-32
8	Vibration	Frequency Range: 10Hz~2000Hz Amplitude: 1.52mm or 20G 4Hrs in each direction, total 12Hrs	MIL-STD-202 Method 204
9	Mechanical Shock	Peak value:1000(g's) Normal duration: 0.5ms Waveform : Half-sine shock Pulse:6axis*3times	MIL-STD-202 Method 213
10	Gross Leak	Test Pressure: 2kg /cm ²	MIL-STD-883 Method 1014
11	Fine Leak	Helium Bombing 5kg/cm ² for 2 Hrs	MIL-STD-883 Method 1014
12	Solderability	Dip in flux 5~10 Sec. Temp.: 245°C±5°C Time: 10 Sec.	J-STD-002