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石英晶体振荡器产品确认书
Quartz Crystal Oscillator Specification For Approval

产品型号： Model	2.0×1.6 OSC 40.000000MHz
客户名称： Customer	
客户编号： Customer's Part No.	
长兴编号： Product No.	3ESC400C0033L
发行日期： Issue Date	

承办：吴丽萍　　审核：林东国　　批准：吕锡昌

内容：

客户 Conclusion:

□ Conditional Approval　□ Full Approval　□ Reject

会签意见	

APPROVED BY :　　ISSUED DATE :

2.0x1.6x0.75mm SMD Crystal Oscillators CMOS Output / 3E Series

■ Features 特点

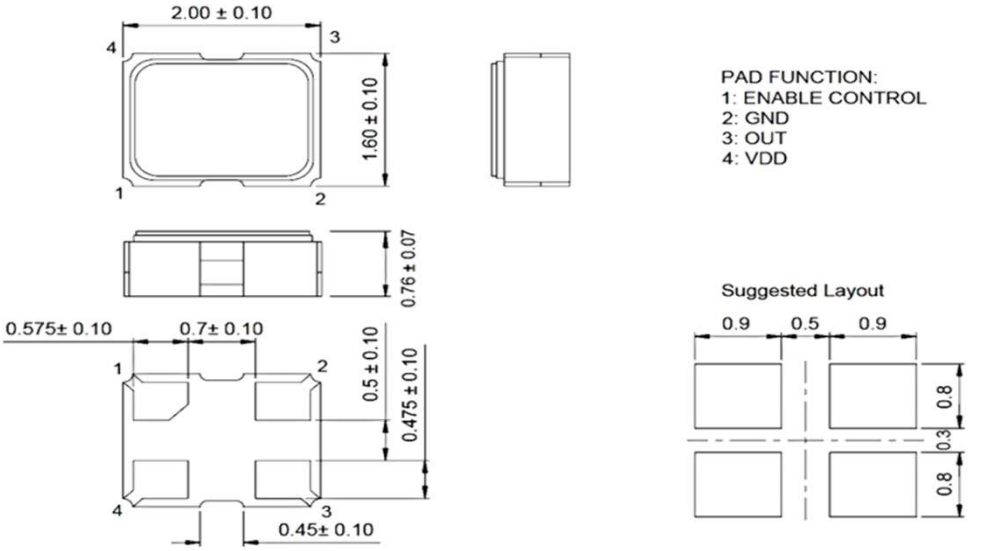
. Ultra Small SMD seam sealed clock crystal oscillator units.
. For applications in WLAN, Bluetooth, DSC, DSL and other IT product.
. Tri-state function available.
. RoHS Compliant / Pb Free.

■ Electrical Specifications电气参数

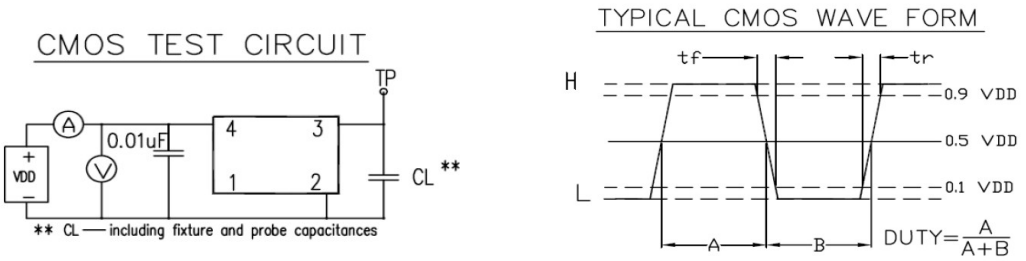
1、	Nominal Frequency:	40.000000	MHz
2、	Tolerance @ 25 Degree:	±10	ppm
3、	Stability over Operation Temp.:	±20	ppm
4、	Aging:	±3	ppm/year
5、	Operating Temperature Range:	-40～85	℃
6、	Storage Temperature Range:	-55～125	℃
7、	Input Voltage (VDD):	1.8V～3.3V	Vdc
8、	Input Current (IDD):	8	mA max
9、	Output Waveform:	COMS	
10、	Output Symmetry:	50±10%	
11、	Rise/Fall Time:	5	ns max
12、	Output Voltage VOL:	10%VDD	max
	Output Voltage VOH:	90%VDD	min
13、	Output Load:	15	pF
14、	Output State Control:	Enable/disable	
15、	Start-up Time:	5	ms max
16、	Standby current:	10	μA max
17、	Jitter (rms):	3	ps max
18、	Oscillation mode:	Fundamental	
19、	MSL	Level 1	IPC/JEDEC J-STD-033C

■ Dimensions外型尺寸

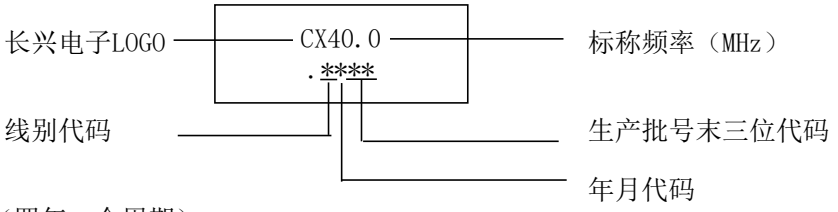
Unit：mm



■ Test Diagram测试电路



■ Marking印码

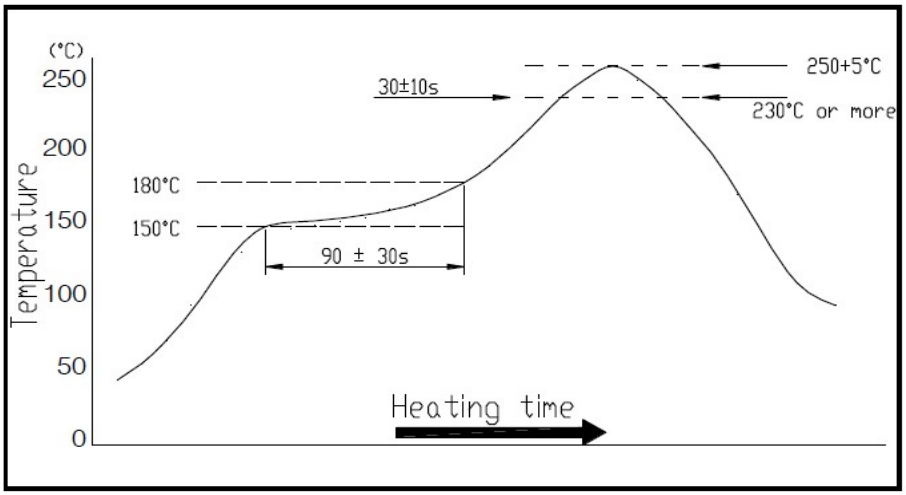


年月代码（四年一个周期）：

月份 / 年份		一月	二月	三月	四月	五月	六月	七月	八月	九月	十月	十一月	十二月
2023	2027	a	b	c	d	e	f	g	h	j	k	l	m
2024	2028	n	p	q	r	s	t	u	v	w	x	y	z
2025	2029	A	B	C	D	E	F	G	H	J	K	L	M
2026	2030	N	P	Q	R	S	T	U	V	W	X	Y	Z

■ Reflow Condition回流焊条件

Solder profile
Peak: 250+50℃ Soldering zone: 230℃ or more, 30±10s.
Pre-heating zone 1: 150～180℃, 90±30s

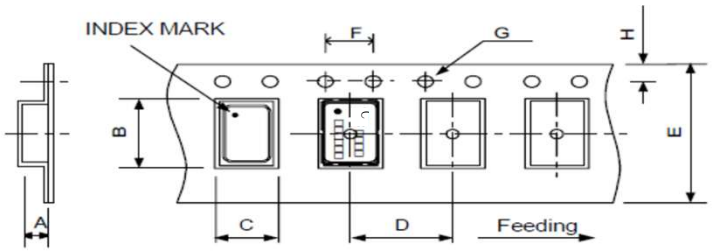


Temperature profile for reflow soldering

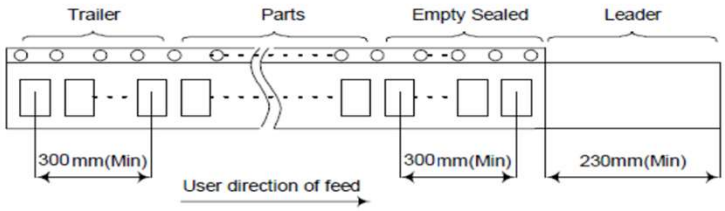
Soldering iron method
Bit temperature: 350±10℃ Application time of soldering iron:3+1 s
For other procedures, refer to IEC 60068-2-20.

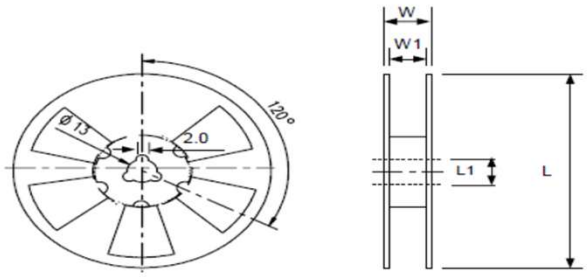
■ Packing包装 (EIA-481-2)

TAPE (CARRIER) DIMENSIONS



DIMENSIONS	A	B	C	D	E	F	G	H
UNIT : mm	0.65±0.1	2.30±0.1	1.90±0.1	4.00±0.1	8.0±0.2	4.00±0.1	1.55±0.05	1.75±0.1





DIMENSIONS	L	L1	W	W1	Standard Reel Quantity
UNIT : mm	178±1.0	13±0.5	11.5±0.2	8.0+1.0	3,000 pcs per reel(WHITE)

■ Reliability Specifications可靠性规范

This is the quality control and quality assurance and relaibility tests performance data for the 2.0×1.6 OSC 24.000000MHz
Standard test condition (TEMP.: 20±15℃. Relative humidity: 65±20%)
For any discripancy in GO/NG, test will be done at TEMP.25±2℃. R.H. 65±5%.

NO	ITEM	SPECIFICATION	TEST METHOD
1	Temperature Cycle (GB/T2423.22-2002, Method Nb)	Frequency change after test≤±5ppm.	10 cycles from -25° C to 85° C. Measurement taken afterDUT being left at room temperature for 24±2 hours.
2	Low Temperature Storage(GB/T 2423.1-2001, MethodAa)	Frequency change after test≤±5ppm.	Spending 72 hrs at -55° C±3° C constant temperature.Measurement taken after DUT being left at roomtemperature for 24±2 hours.
3	High Temperature Storage(GB/T 2423.2-2001, MethodBa)	Frequency change after test≤±5ppm.	Spending 72 hrs at 125° C±3° C constant temperature.Measurement taken after DUT being left at roomtemperature for 24±2 hours.
4	Humidity (GB/T 2423.3-2006, Method Cab)	Frequency change after test≤±5ppm.	Spending 96 hrs at 40 ° C ± 3 ° C, with 90± 3% R.H.Measurement taken after DUT being left at roomtemperature for 24±2 hours.
5	Vibration (GB/T 2423.10-1995, Method Fc)	Frequency change after test≤±5ppm.	Apply 0.75mm vibration at sweep frequency 10～500 Hz,for 2h. 10 cycles in each direction of 3 axis. Measurementtaken after 1 hour.
6	Shock (GB/T 2423.5-1995,Method Ea)	Frequency change after test≤±5ppm. No visible damages.	Peak 1000m/s2, normal width 6ms half sine wave form,3.7m/s, 3 perpendicular axis of samples, 3 cycles /direction, total 18 cycles. Measurement taken after 1hour.
7	Drop (GB/T 2423.8-1995,Method Ed)	Frequency change after test≤±5ppm. No visible damages.	Free drop to the wooden plate from 1.0 m heights for 3times.
8	Solderability (GB/T 2423.28-2005, Method Tc)	Terminals shall be coveredmore then 95% with solder.	In 255 ± 5℃ solder bath for 2 ± 0.5 seconds. There is noneed to do functioned test. 8-12X magnifier.
9	Terminal Strength (JIS-C-6429 Method 1 & 2)	No visible damage	Mount on a glass-epoxy board (100x50x1.6mm), thenbend to 2mm displacement (velocity 1mm/sec) and keepfor 5 seconds. or pulling force 0.5 kg for at least 60seconds.
10	Resistance to SolderingHeat (GB/T 2423.28-2005,Test Tb Method 1B)	Frequency change after test≤±5ppm.	Passed through the re-flow oven under the followingcondition. Preheat to 150 ° C±5° C for 60 to 120sec,andpeak 265 ° C±5° C for 10s±3sec.Measurement taken afterDUT being left at room temperature for at 24±2 hours.

Material Composition Declaration

材 料 成 份 表

1.PRODUCTION NAME： OSC 2016

2.PRODUCTION WEIGHT(mg)： 8.144

编号 No.	构成部件 Name of Part	部件材质名 Material Name	构成之元素名称 Constituent name	CAS编号 CAS No.	元素百分比 Material Analysis(%)
1	基座 Base	陶瓷 Ceramics	Al_2O_3 Aluminum oxide	1344-28-1	63.88%
			SiO_2 Silica	14464-46-1	3.79%
			Cr2o3 Chromium oxide	1308-38-9	1.29%
			Mo Molybdenum	7439-98-7	1.00%
		Pin	Fe Iron	7440-33-7	9.25%
			Ni Nickel	7439-89-6	8.85%
			Co Cobalt	7440-02-0	4.75%
		焊料 Solder	Ag silver	7440-48-4	2.98%
			Cu Copper	7440-22-4	2.80%
		金属化 Metallization	W Tungsten	7440-50-8	1.04%
		电镀层 Plate	Au Gold	7440-02-0	0.24%
			Ni Nickel	7440-57-5	0.13%
2	外壳 Lid	Kovar	Fe Iron	3ESC160C0033L	54.00%
			Co Cobalt	7440-48-4	17.02%
			Ni Nickel	7440-02-0	28.32%
		Ni （镀层）	Ni Nickel	7440-02-0	0.66%
3	Adhesive	Resin	-	-	100.00%
4	Blank	晶片 Quartz	SiO_2 Silicon oxide	14808-60-7	100.00%
5	Wire	Gold	Au Gold	7440-57-5	100.00%
6	IC	Ssilicon	Silicon	7440-21-3	100.00%
7	Electrode	电极 Electrode	Ag Silver	7440-22-4	100.00%
8	Epoxy	Conductive Resin	Silver	7440-22-4	74.00%
			Ethyl alcohol	64-17-5	0.60%
			Bisphenol A-epichlorohydrin polymer	25068-38-6	0.60%
			Xylenes (o-, m-, p-isomers)	1330-20-7	0.60%
			Ethylbenzene	100-41-4	0.06%
			Silicone resin	-	8.62%
			Silica	-	8.52%
			Petroleumsolvents	-	7.00%