RoHS Compliant

APPROVAL SHEET

Issued No. :

DESCRIPTION	:	**SMD 3225 CRYSTAL**
NOMINAL FREQ.	:	**25.000000 MHz**
TAITIEN P/N	:	**11345-X-002-3**
TAITIEN MODEL	:	**XXCCCLNANF-25.000000MHz**
REVISION	:	**1**
DATE	:	**06/28/2018**

QA	Checked	Prepared
Monica Jiang 數位簽署者 Monica Jiang DN：cn=Monica Jiang, c=<無>, o=QA, ou=QA, email=frjiang@taitien.com.tw 日期：2018.06.28 14:05:42 +08'00'	李成龍 數位簽署者 李成龍 DN：cn=李成龍, c=<無> 日期：2018.06.28 13:18:12 +08'00'	WEIBO 數位簽署者 WEIBO DN：cn=WEIBO, c=<無>, o=QA, ou=QA 日期：2018.06.28 09:11:58 +08'00'

CUSTOMER :

CUSTOMER P/N :

Customer Signature
Approved:
Date:

REVISION HISTORY

Rev.	Revised Page	Revision Content	Date	Ref. No.	Reviser
01	N/A	Initial Released	06/13/2018	N/A	Y.P.Ma

CONTENT

SPECIFICATIONS	PAGE
ELECTRICAL SPECIFICATIONS	4~5
RECOMMENDED IR REFLOW PROFILE	6
PRODUCT DIMENSIONS	7
PRODUCT IDENTIFICATION (MARKING)	7
PACKAGE INFORMATION	8

ATTACHMENT

TESTING DATA	PAGE
ELECTRICAL CHARACTERISTICS TEST	9
OTHER DATA	
SUBSTANCE ANALYSIS LIST OF RAW MATERIAL	10

■ ELECTRICAL SPECIFICATIONS

	Parameter	Min.	Typ.	Max.	Units	Test Condition
1-1	Nominal Frequency		25.000000		MHz	
1-2	Frequency Tolerance.	-20		+20	ppm	at 25℃+/-2℃
1-3	Operating Temperature range	-40		+85	°C	
1-4	Storage Temperature range	-55		+125	°C	
1-5	Temperature Characteristics	-20		+20	ppm	-40℃ to +85℃
1-6	Nominal Load Capacitance		10		pF	
1-7	Series Resistance			60	Ω	
1-8	Shunt Capacitance			3	pF	
1-9	Motion Capacitance				fF	
1-10	Motion Inductance				mH	
1-11	Q factor				K	
1-12	Spurious Response				dB	
1-13	Frequency Pull ability				ppm/pF	
1-14	C0/C1 Ratio					
1-15	Aging	-3		+3	ppm/year	
1-16	Insulation Resistance		500MΩ Min. @ DC100V			
1-17	Nominal Drive Level		10		μW	into 10Ω
1-18	Dependency Condition				μW	
1-19	Drive Level Dependency Resistance Max. Minus Min.				Ω	
1-20	Drive Level Dependency Frequency Max. Minus Min.				ppm	
1-21	Drive Level Dependency Resistance Max.				Ω	

■ CUSTOMER SPECIAL REQUIREMENT

2	

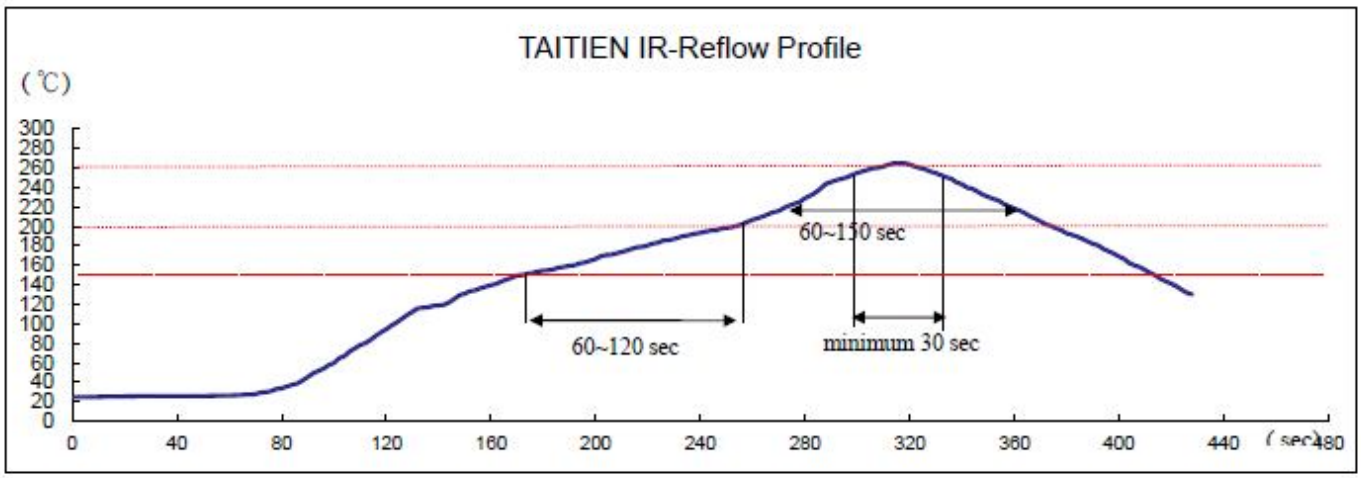
■ ENVIRONMENTAL

	Parameter	Reference Std.	Test Condition
3-1	Vibration Test	MIL-STD-883 2007 Condition A JESD22-B103 Condition 1	10~2000Hz, 1.52mm, 20g, each axis for 4 hrs
3-2	Thermal Shock	MIL-STD-883 1010 Condition B JESD22-A104 Condition B	-55℃, 125℃; soak time is 10 mins, with total 200 cycles
3-3	Mechanical Shock	MIL-STD-883 2002 Condition B JESD22-B104 Condition B	1500G, half-sine, 0.5ms, each axis for 3 times.

■ RECOMMENDED IR REFLOW PROFILE

➢ IR REFLOW PROFILE OF CERAMIC SMD PRODUCTS FOR Pb FREE PROCESS

TAITIEN ELECTRONICS CO., LTD.



Reference Standard: JEDEC-STD 020

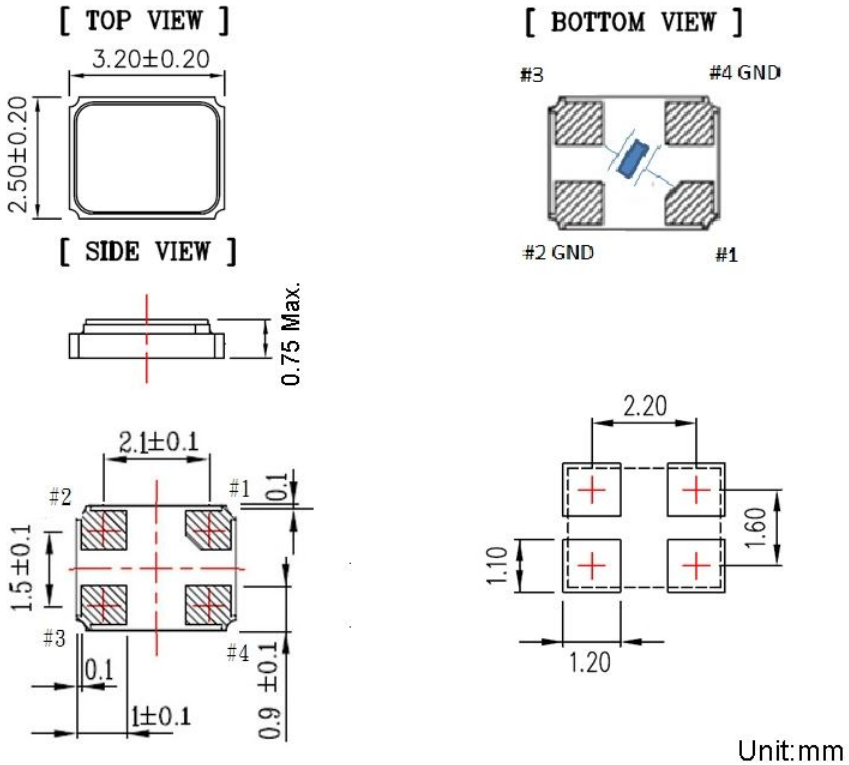
Test conditions: Pre-heating : 150℃ to 200℃, 60~120secs.

Heating : 217℃, 60~150sec.

Peak temperature at least : 260℃, The time above 255 ℃ : minimum 30sec.

■ PRODUCT DIMENSIONS

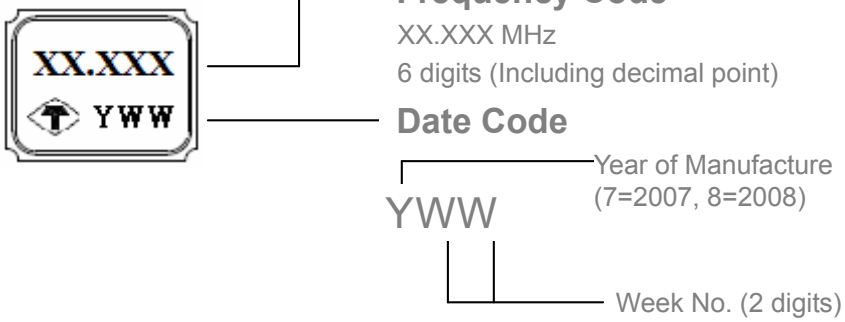
➢ DIMENSIONS



Unit:mm

■ PRODUCT IDENTIFICATION (MARKING)

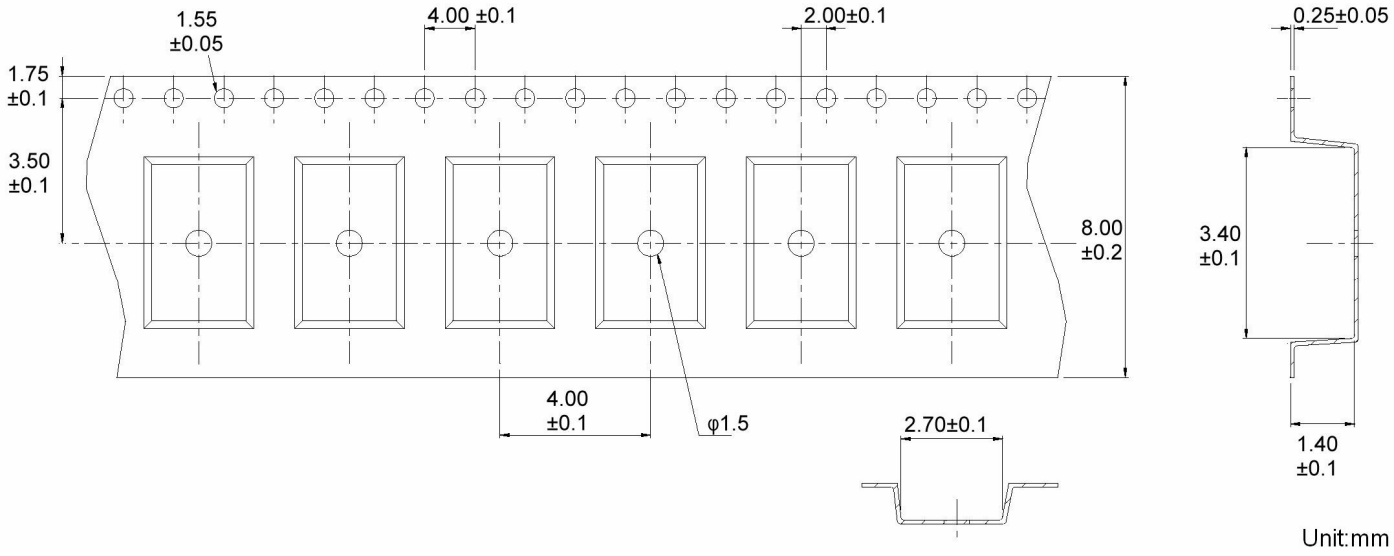
➢ PROCEDURE: LASER



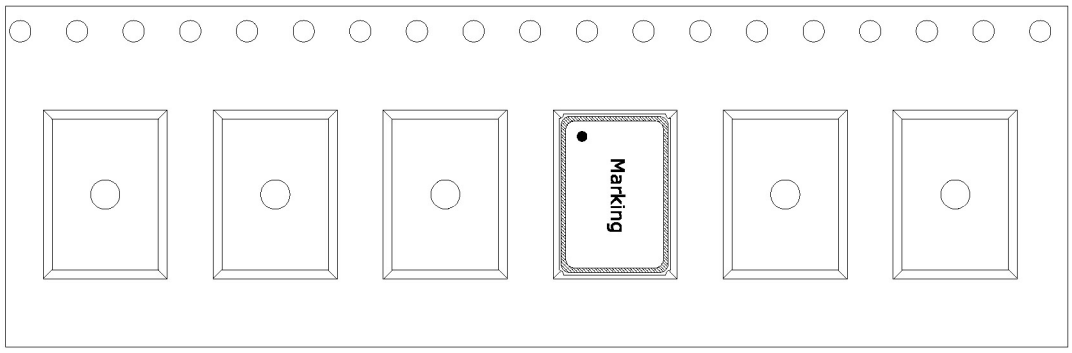
➢ FOR EXAMPLE:

■ PACKAGE INFORMATION

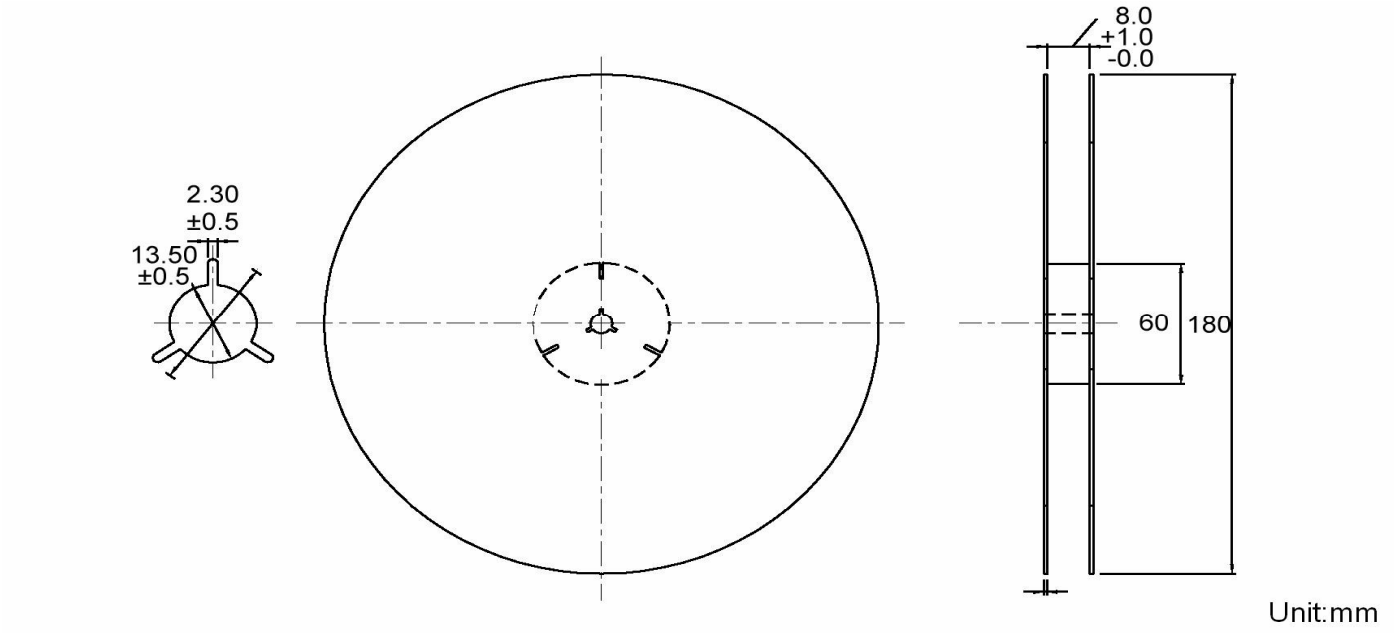
➢ TAPE (CARRIER) DIMENSIONS



➢ THE DIRECTION OF PACKING



➢ REEL DIMENSIONS



■ ATTACHMENT

➢ ELECTRICAL CHARACTERISTICS TEST

EXCEL EXPORT PRINTOUT FORMAT

Batch # : Test on :06/28/2018
Setup file : 2500000010
Taitien Spec NO. : 11345X0023
Description :
Ref. Freq. : 25.000000MHz
Power : 10 Uw INTO 10 ohm
Search range : 1000 ppm
Mode Type : Fundamental AT
Spurious Response:
Timebase : Internal

	Status	FL:10+/- 0.0pF	FL1:10+/- 0.0pF	Rr	C0	C1	C0/C1	Ts	Q	L	FDLD	DLD2	RLD2
	Unit	[MHz]	[ppm]	[ohm]	[pF]	[fF]		[ppm/pF]	[K]	[mH]	ppm	Ohms	Ohms
	Center	25.000000	0	/	/	/	/	/	/	/	/	/	/
	High	25.000500	20	60	3	9999.9	9999.9	9999.9	9999.9	9999.9	9999.9	9999.9	9999.9
	Low	24.999500	-20	0	0	0	0	0	0	0	0	0	0
1	Pass 1	24.999818	-7.3	7.7	0.8	3.9	202.0	16.6	215.4	10.5	1.0	3.3	10.8
2	Pass 1	24.999778	-8.9	8.0	0.8	3.8	204.0	16.4	208.7	10.7	1.5	0.4	8.2
3	Pass 1	24.999768	-9.3	8.8	0.8	3.7	244.0	13.7	227.0	12.8	1.5	0.5	9.3
4	Pass 1	24.999923	-3.1	8.5	0.8	3.7	214.0	16.0	199.4	10.8	1.5	0.2	8.5
5	Pass 1	24.999908	-3.7	9.3	0.8	3.7	228.0	15.1	193.4	11.5	1.4	0.4	9.7
6	Pass 1	24.999835	-6.6	7.3	0.8	3.6	223.0	15.6	239.4	11.1	1.6	0.5	7.7
7	Pass 1	24.999903	-3.9	5.9	0.8	3.6	221.0	15.5	297.5	11.2	1.9	0.6	6.3
8	Pass 1	24.999880	-4.8	7.0	0.8	3.8	210.0	16.4	238.1	10.6	1.8	0.5	7.2
9	Pass 1	24.999883	-4.7	10.4	0.8	3.6	219.0	15.6	168.6	11.1	1.7	0.5	10.6
10	Pass 1	24.999890	-4.4	12.7	0.8	3.9	205.0	16.6	129.5	10.5	1.4	4.4	13.0
	Average	24.999858	-5.7	8.6	0.8	3.7	217.0	15.8	211.7	11.1	1.5	1.1	9.1
	Stdev	0.000055	2.21	1.92	0.01	0.12	12.92	0.89	44.95	0.69	0.25	1.46	1.98
	CA	-28.35	-28.35	/	/	/	/	/	/	/	/	/	/
	CP	3.01	3.01	8.92	62.37	/	/	/	/	/	/	/	/
	CPK	2.16	2.16	8.92	62.37	/	/	/	/	/	/	/	/

Supervisor: 李成龍 數位簽署者 李成龍 DN：cn=李成龍, c=<無> 日期：2018.06.28 13:18:42 +08'00'

Inspector: WEIBO 數位簽署者 WEIBO DN：cn=WEIBO, c=<無>, o=QA, ou=QA 日期：2018.06.28 09:12:09 +08'00'

■ ATTACHMENT

➢ SUBSTANCE ANALYSIS LIST OF RAW MATERIAL

TAITIEN ELECTRONICS CO., LTD.

TAITIEN ELECTRONICS (NANJING) CO.,LTD.
原材物料有害物質成分分解表(Hazardous Substance Analysis List of Raw Material)

型號(Model): XX type
重量(weight): 19.36 mg +/-20%

No.	Name of Part	Material Name	Material Mass(mg)	Constituent name	CAS No.	Material Mass(mg)	Material Analysis(%)	Supplier Name	檢測机构 Test institution	檢測報告編號 Test report No.	送檢日期Test date	有毒有害物質或元素的含量（ppm） Hazardous substances content												檢測報告 inspection report
												ROHS										Halogen		PFOS	PFOA	
												Pb	Cd	Hg	Cr6+	PBBs	PBDEs	DBP	BBP	DEHP	DIBP	Br	Cl			
1	Base	Ceramic	8.63	Al2O3	1344-28-1	7.7670	90.00	Kyocera	CTI	A2180062952101001	2018/5/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				Cr2O3	1308-38-9	0.1726	2.00																			
				Mo	7439-98-7	0.1726	2.00																			
				SiO2	14808-60-7	0.5178	6.00																			
		Metallizing	2.69	W	7440-33-7	2.6900	100.00			A2180062952101005	2018/5/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Plate-Au	0.12	Au	7440-57-5	0.1200	100.00			A2180062952101003	2018/5/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Plate-Ni	0.42	Ni	7440-02-0	0.4200	100.00			A2180062952101004	2018/5/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Seal Ring	2.24	Co	7440-48-4	0.4032	18.00			A2180062952101006	2018/5/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				Fe	7439-89-6	1.1872	53.00																			
				Ni	7440-02-0	0.6496	29.00																			
		Solder	0.56	Ag	7440-22-4	0.3976	71.00																			
				Cu	7440-50-8	0.1624	29.00																			
2	Lid	Kovar	3.2	Fe	7439-89-6	1.73	54	JingSai	SGS	SHAEC1724751903	2017/11/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				Ni	7440-02-0	0.93	29																			
				Co	7440-48-4	0.54	17																			
		Plating	0.3	Ni	7440-02-0	0.3	100			CE/2017/A1761	2017/10/19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
3	Adhesive	Silver paste	0.6	Ag	7440-22-4	0.48	80	THREE BOND	SGS	CE/2018/40773 CE/2018/40774 CE/2018/40776 CE/2018/24247	2018/4/16 2018/4/16 2018/4/16 2018/3/2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
				SiO2	14808-60-7	0.06	10																			
				Silicone Resin	63148-62-9	0.06	10																			
4	Blank	Quartz	0.5	SiO_2	14808-60-7	0.5	100	TAITIEN(SZ)	SGS	CANEC1719920101 CANEC1719920102 CANEC1719920103	2017/10/17 2017/10/17 2017/10/17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5	Electrode	Cr	0.01	Cr	7440-47-3	0.01	100	SOLAR	SGS	SHAEC1717529901	2017/8/15	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Ag	0.09	Ag	7440-22-4	0.09	100		SGS	SHAEC1716765601	2017/8/7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			19.36																							QC0708-03FN-1.0