应达利电子INTERQUIP ELECTRONICS

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Customer Approval Sheets

Product： Crystal Resonator
Description： SMCE2520 4pads
IQG P/N： 5ZAA12000183KFA5Q3 VER: 0.1
Ref No:
Customer P/N:

Approval Section：			
Date:			
Customer：			Attn:
DEPT.	DEPT.	DEPT.	DEPT.

Prepared by：	Checked by：	Approved by：
Angela Li 2021/4/20		

IQL has been certified for the above management systems.

RoHS

Note 1: It is prohibited to use the "Environment-related Substances to be Controlled" in level 1 in Sony GP system. The resin, ink, paint and cable used in molded products must be purchased from the suppliers in the Sony GP supplier list.
Note 2: Not suitable for ultrasonic welding. ultrasonic welding to other specifications

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Rev	Revise page	Revise contents	Date	Reviser
0	N/A	Initial released		

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Description： SMCE2520 4pads IQG P/N： 5ZAA12000183KFA5Q3

Specification

PART NO 5ZAA12000183KFA5Q3

1. Scope:

1.1 This specification applies to the RoHS/SONY compliance quartz crystal unit with a frequency of 12MHz which will be used in crystal oscillator applications.

2. Construction:

2.1 Type of Quartz Resonator: SMCE2520 4pads

3. Electrical Characteristics

3.1	Nominal Frequency(f):	12,000,000 Hz
3.2	Load Capacitance(C_L):	18pF
3.3	Frequency Tolerance(△f/f):	± 30ppm
3.4	Frequency Temperature Stability:	±30ppm
3.5	Resonance Resistance(ohm):	150ohms Max
3.6	Osc mode:	Fundamental mode
3.7	Shunt Capacitance(C_0):	<2pF
3.8	Drive Level(D_L):	< 50μW
3.9	Operating Temperature Range(T_{OPR}):	-20 to + 70°C
3.10	Storage Temperature Range(T_{STG}):	-55 to + 125°C
3.11	Insulation Resistance(IR):	＞500 M ohms
3.12	Aging(△f_A):	± 3ppm per Year
3.13	Marking:	Q+DateCode+LotCode+12.000
3.14	OTHERS:	Not recommended for safety applications

4. Reliability Specifications

This is the quality control and quality assurance and reliability tests performance data for the RoHS/SONY compliance 12MHz SMCE2520 4pads crystal resonators (P/N.: 5ZAA12000183KFA5Q3) related to the specification and approval sheet provided by INTERQUIP ELECTRONICS CO., LTD .

Standard test condition (TEMP.: 20±5°C. Relative humidity: 65±20%)

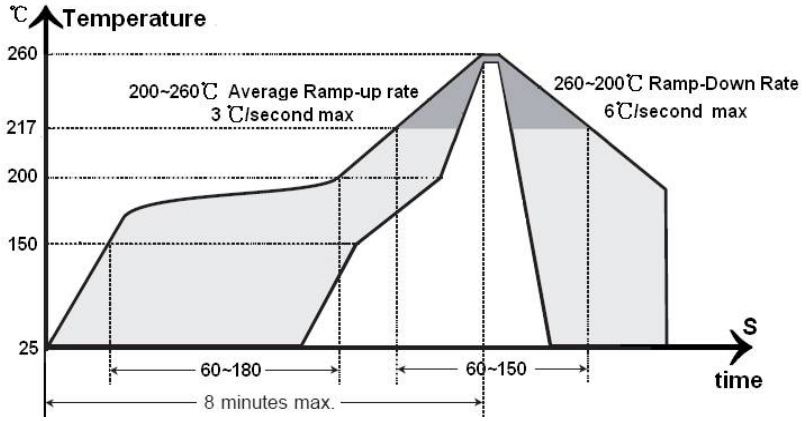
For any discrepancy in GO/NG, test will be done at TEMP.25±2°C, R.H. 65±5%.

NO.	PROCESS	SPECIFICATION	TEST METHOD
4.1	Temperature Cycle (GB/T 2423.22-2002, Method Nb)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	10 cycles from -55°C to 125°C. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.2	Low Temperature Storage (GB/T 2423.1-2001, Method Aa)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 72 hrs at -55°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.3	High Temperature Storage (GB/T 2423.2-2001, Method Ba)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 72 hrs at 125°C±3°C constant temperature. Measurement taken after DUT being left at room temperature for 24±2 hours.
4.4	Humidity (GB/T 2423.3-2006, Method Cab)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Spending 96 hrs at 40 °C ± 3 °C, with 93 %R.H, Then keep the DUT in dry oven at 40 ± 5 °C for 24 hour. Measurement taken after DUT being left at room temperature for 1 to 2 hours.
4.5	Vibration (GB/T 2423.10-1995, Method Fc)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Apply 0.75mm vibration at sweep frequency 10～500 Hz, 10 cycles in each direction of 3 axis. Measurement taken after 1 hour.
4.6	Shock (GB/T 2423.5-1995, Method Ea)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.and exhibit no visible damage.	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 1 hour.
4.7	Drop (GB/T 2423.8-1995, Method Ed)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.and exhibit no visible damage.	Free drop to the steel plate with thickness of 3 mm from 1.00 m heights for 3 times.
4.8	Solderability (IEC60068-2-58,Test Td:)	Terminals shall be covered more then 95% with solder.	Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and soldering time for 20s ± 5s at 235° C, peak soldering time for 10s ± 1s betweein 240 and 250°C. There is no need to do functional test. 8-12X magnifier.
4.9	Terminal Strength (JIS-C-6429 Method 1 & 2)	No visible damage	Mount on a glass-epoxy board (100x50x1.6mm), then bend to 2mm displacement (velocity 1mm/sec) and keep for 5 seconds. or pulling force 1.8kg for at least 60 seconds.
4.10	Resistance to Soldering Heat (IEC60068-2-58,Test Td: Table 4)	Frequency change after test ≤± 5ppm.Resonance resistance change after test ≤10ohms.	Passed through the re-flow oven under the following condition. Preheat 150 to 180°C for 60 to 120sec, and sodering time for 60s max at 235° C, peak soldering time for 20s max at 265°C max. Measurement taken after DUT being left at room temperature for at least 2 hours.
4.11	OTHERS		

5. Recommended Reflow soldering condition (SMD)

Solder profile

Peak: 260℃±5℃ Soldering zone: 217℃ or more 60s~150s,Pre-heating zone 1: 150～200℃, 60s~180s

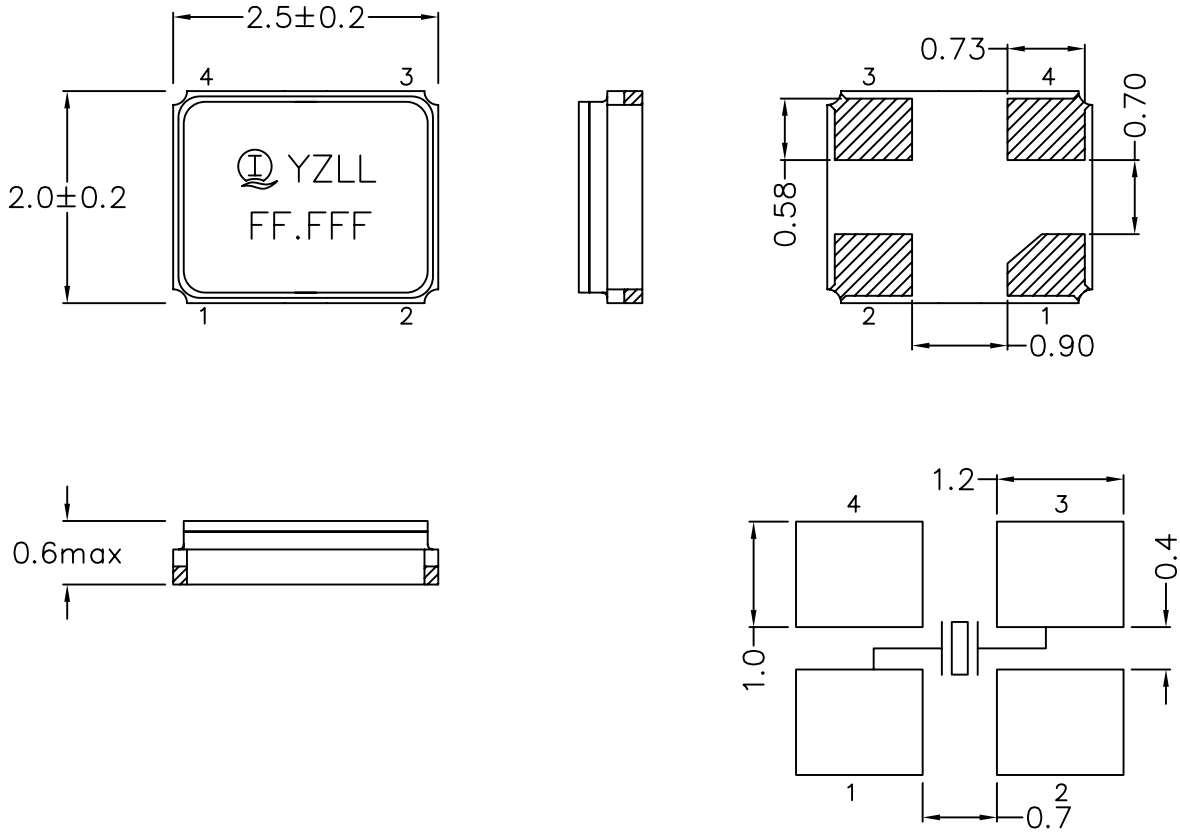


Temperature profile for reflow soldering

6. Soldering iron method

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

EXTERNAL DIMENSIONS



MARKING SPECIFICATIONS

RECOMMENDED SOLDERING PATTERN

Ⓘ —— INTERQUIP COMPANY'S LOGO

FF.FFF——REPRESENT FREQUENCY (MHz)

Y —— REPRESENT MONTH

" Y " :

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

Z —— REPRESENT THE LAST DIGIT OF THE YEAR

LL —— REPRESENT LOT CODE

NOTES: 1. ALL DIMENSIONS ARE IN mm

2. DO NOT SCALE DRAWING

Interquip Electronics Co., Ltd

TITLE SMD RESONATOR

PART NO.

MODEL SMCE-2520-4pads

REMARK

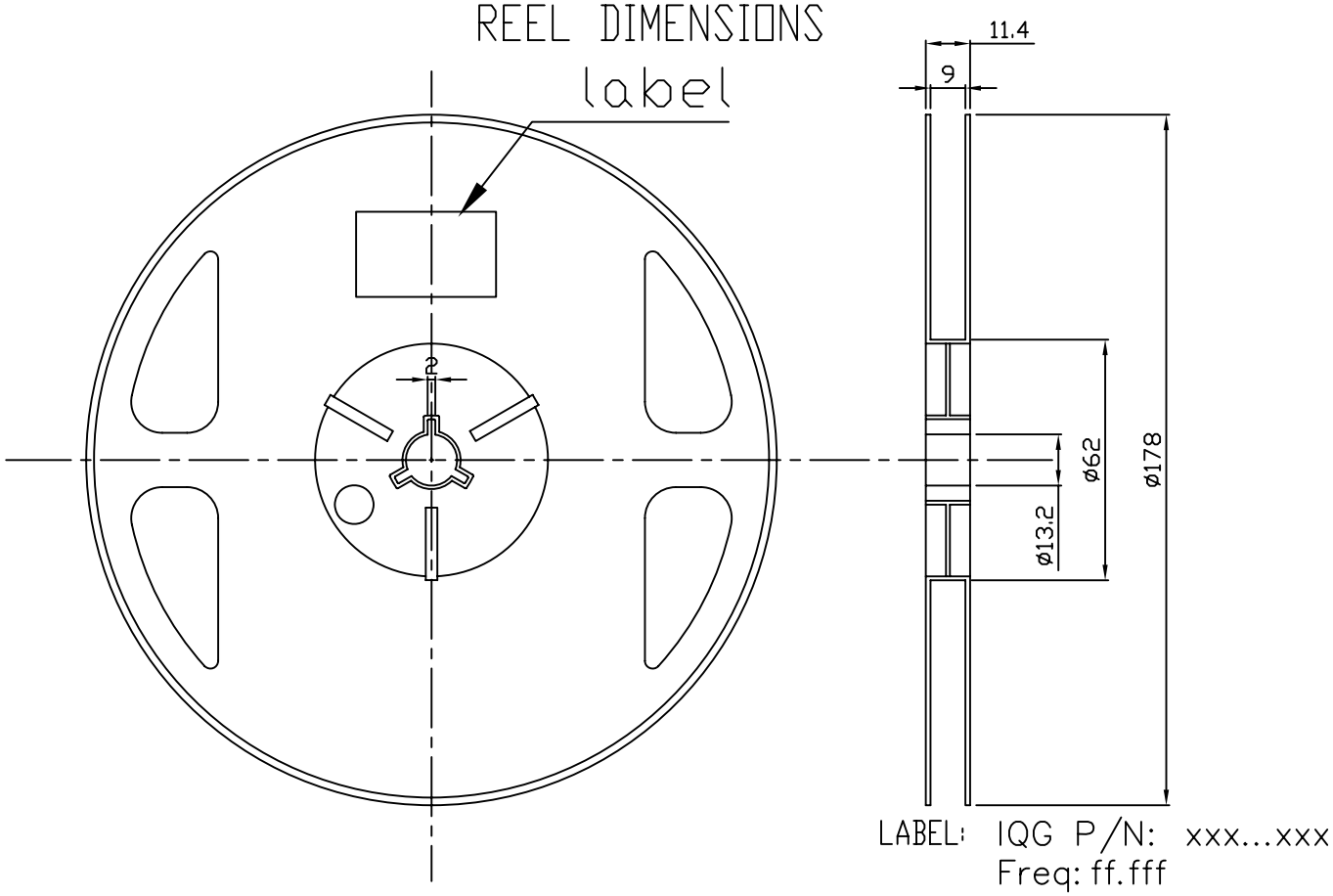
TOLERANCE
X.±0.3 X.X±0.15
X.XX±0.1 ANGULAR±2.5°

DWN.	XJ Li					
DATE	2018.10.29					
CHKD	Kevin Leung					
DATE	2018.10.29					
APPD.	CS Chiang					
DATE	2018.10.29					

REV.	DATE	MODIFY DESCRIPTION	BY
7	2018.10.29	Update Marking Description	XJ Li

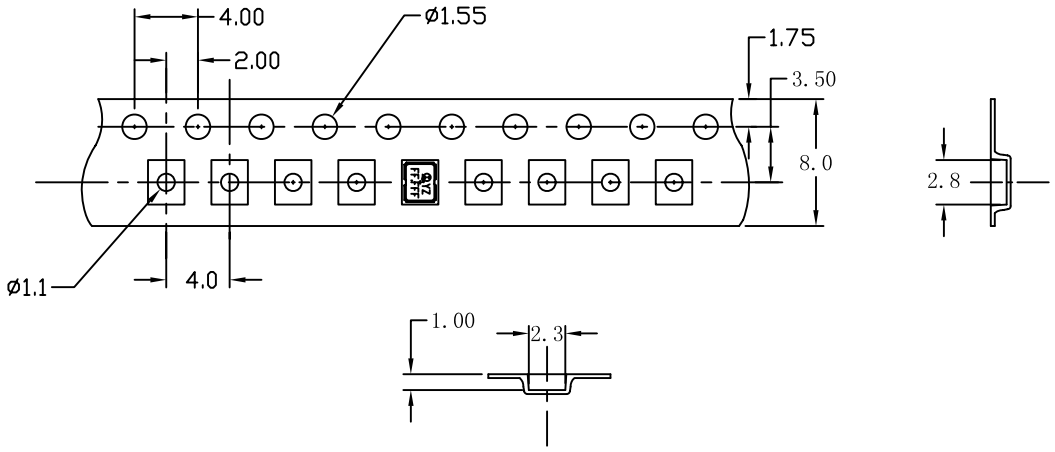
DWG.NO. 004-061P7-000 REV. 7

REEL DIMENSIONS



LABEL: IQG P/N: xxx...xxx
Freq: ff.fff
Qty: 3000 Pcs

EMBOSSED TYPE DIMENSIONS



USER FEED DIRECTION

NOTES: 1. ALL DIMENSIONS ARE IN MM
2. DO NOT SCALE DRAWING

INTERQUIP ELECTRONICS CO., LIMITED

TITLE: TAPE & REEL PACK

PART NO.

MODEL SMCE-2520

REMARK

TOLERANCE
X.±0.3 X.X±0.15
X.XX±0.05 ANGULAR±

DWN.	M_Zhao
DATE	2009.8.5
CHKD	Johnson Mok
DATE	2009.8.5
APPD.	Xm_Sun
DATE	2009.8.5

DATE	MODIFY DESCRIPTION	BY

DWG.NO. 004-061P7-001 REV. 0