



# INTERQUIP ELECTRONICS CO., LIMITED

Flat A, 9th Floor, On Shing Industrial Building, 2-16 Wo Liu Hang Road,

Fotan, New Territories, Hong Kong

Tel: (852) 2413 5515 Fax: (852) 2413 7053

Web site: <http://www.interquip.com> Email: [iql@interquip.com](mailto:iql@interquip.com)

## Crystal Resonator Specification and Approval Sheet

**Customer:** APEX Electronics Ltd

**Project Name:** N/A

**Applications:** N/A

**Contact Person:** Donald McLellan

**Customer Part Number:** N/A

### 1. Scope:

1.1 This specification applies to quartz crystal unit with a frequency of 20.000000MHz, which will be used in crystal oscillator applications.

### 2. Construction:

2.1 Type of Holder: SMCE-2520 (RoHS Compliant)

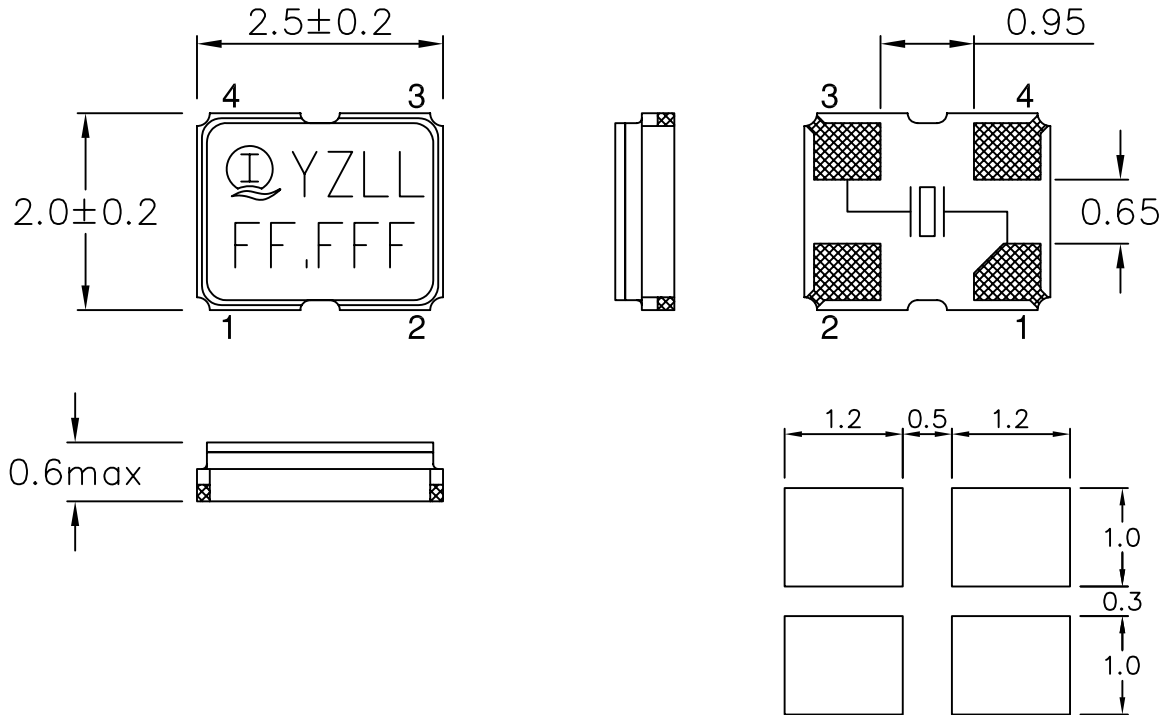
2.2 Enclosure Seal: Seam Welded Seal

### 3. Characteristics:

3.1	Nominal Frequency	(f)	20.000000MHz
3.2	Mode of Vibration		Fundamental
3.3	Load Capacitance	(C <sub>L</sub> )	18pF
3.4	Frequency Tolerance at 25 °C±3 °C	(Δ f/f)	±30ppm
3.5	Resonance Resistance	(Ω)	150 Ohm Max.
3.6	Shunt Capacitance	(C <sub>0</sub> )	7.0pF Max.
3.7	Drive Level	(D <sub>L</sub> )	0.1mW
3.8	Frequency Deviation with Temperature	(Δ f/f)	±30ppm
3.9	Operating Temperature Range	(T <sub>OPR</sub> )	-30°C to 85°C
3.10	Storage Temperature Range	(T <sub>STG</sub> )	-55°C to 125°C
3.11	Insulation Resistance	(SR)	500M Ω or More
3.12	Aging	(Δ f <sub>A</sub> )	±3 ppm per years

				TITLE <b>CRYSTAL RESONATOR</b>		DWG.	M. Zhao
						DATE	12-10-08
				PART NO <b>5ZAA20000183SFA5Q3</b>	TOLERANCE	CHKD.	J Mok
				MODEL <b>SMCE-2520</b>	X± X.X±	DATE	12-10-08
				REMARK	X.XX± ANGULAR±	APPD.	XM Sun
						DATE	12-10-08
DATE	MODIFY DESCRIPTION	BY	SALESMAN : Gary Chan		SHEET 1/2	REV	0

## EXTERNAL DIMENSIONS



### MARKING SPECIFICATIONS

— COMPANY'S LOGO

FF.FFF — REPRESENT FREQUENCY (MHz)

YZ — REPRESENT MONTH & YEAR CODE RESPECTIVELY

" 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 " CODE IS THE LAST NUMBER OF PRODUCTION YEAR

FOR INSTANCE:

YEAR	2009	2010	2011	2012	2013
MARK	9	0	1	2	3

LL — REPRESENT LOT CODE (AA-ZZ)

### RECOMMENDED SOLDERING PATTERN

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



Interquip Electronics Co., Ltd

TITLE SMD RESONATOR				DWN.	M_Zhao
				DATE	2011.10.19
PART NO.			TOLERANCE		CHKD
MODEL SMCE-2520			X.±0.3 X.X±0.15		DATE
REMARK			X.XX±0.05 ANGULAR±		APPD.
					DATE
DATE	MODIFY DESCRIPTION	BY	DWG.NO. 004-061P7-000		REV. 3