



INTERQUIP ELECTRONICS CO., LIMITED.

Flat A, 9/F., On Shing Industrial Bldg., 2-16 Wo Liu Hang Road,

Fotan NT Hong Kong SAR

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

Web site: <http://www.interquip.com> Email: iql@interqup.com

Crystal Resonator Specification and Approval Sheet

Customer: Apex Electronics

Project Name: N/A

Applications: wheelchair controllers

Contact Person: Mike Robinson

Customer Part No: N/A

1. Scope:

1.1 This specification applies to quartz crystal unit with a frequency of 32.768KHz, which will be used in crystal oscillator applications.

2. Construction:

2.1 Type of Holder: SMLF-3215 **(RoHS Compliant)**

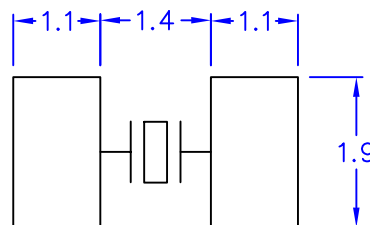
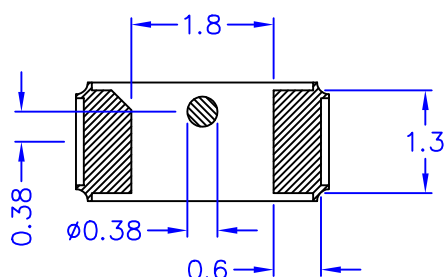
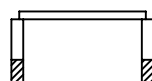
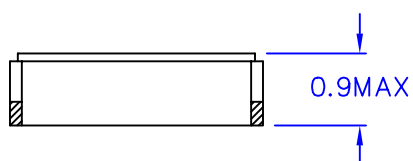
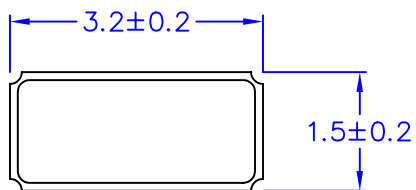
2.2 Enclosure Seal: Plastic Encapsulated, Cold Flo Alloy Seal

3. Characteristics:

3.1	Nominal Frequency	(f)	32.768kHz
3.2	Frequency Tolerance	($\Delta f/f$)	± 20 ppm
3.3	Turn Over Temperature (frequency)	(θT)	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
3.4	Temperature Coefficient(frequency)	(a)	-0.034 ± 0.006 ppm/C^2
3.5	Load capacitance	(C_L)	12pF
3.6	Operating Temperature Range	(T_{OPR})	-40°C to 85°C
3.7	Storage Temperature Range	(T_{STG})	-55°C to 125°C
3.8	Drive Level	(D_L)	1.0μW
3.9	Series Resistance	(R_1)	70K Ohm Max.
3.10	Insulation Resistance	(IR)	500M Ω Min.
3.11	Aging	(Δf_A)	± 5 ppm/Year Max.

				TITLE CRYSTAL RESONATOR		DWG.	M Zhao
						DATE	10-06-28
				PART NO	9CAA32768122TF70CT	CHKD.	J Mok
				MODEL	SMLF-3215	DATE	10-06-28
						APPD.	XM Sun
						DATE	10-06-28
DATE	MODIFY DESCRIPTION	BY	SALESMAN: Gary Chan	SHEET 1/2		REV 0	

EXTERNAL DIMENSIONS



RECOMMENDED SOLDERING PATTERN

MARKING SPECIFICATIONS

ym###

y—REPRESENT THE LAST DIGIT OF PRODUCTION YEAR

m—REPRESENT PRODUCTION MONTH CODE

FOR INSTANCE:

MONTH	1	2	...	9	10	11	12
MARK	1	2	...	9	X	Y	Z

###—REPRESENT LOT NUMBER

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



Interquip Electronics Co., Ltd

				TITLE		TUNING FORK RESONATOR		DWN.	M Zhao
				PART NO.				DATE	2007.2.26
				MODEL		SMLF-3215		CHKD	XM.Sun
				REMARK				DATE	2007.2.26
								APPD.	CK
								DATE	2007.2.26
DATE	MODIFY	DESCRIPTION	BY					DWG.NO.	004-061A9-002
								REV.0	