

# CRYSTAL RESONANCER



SERIES 6LC, SMD 8.0\*3.8MM TUNING FORK WATCH CRYSTAL

## 深圳市晶科鑫实业有限公司

Shenzhen Crystal Technology Industrial Co., Ltd

### APPROVAL SHEET

CUSTOMER P/N:	
TYPE:	SMD CRYSTAL
DESCRIPTION:	SMD308C 32.768KHZ 12.5PF ±20PPM -40~85°C
P N/ SJK:	6LC32768F12UC
ENVIRONMENTAL:	<input checked="" type="checkbox"/> RoHS <input checked="" type="checkbox"/> REACH <input checked="" type="checkbox"/> HF <input type="checkbox"/> PAHS <input type="checkbox"/> other
REVISION:	A1    2017-5-10 <span style="float: right;">MOQ: 3000pcs/real</span>
MSL:	Levels 1

SIGNATURE					
SUPPLIER			CUSTOMER		
Issue	Check	Approve	QA	Check	Approve
SJK			Signature		
FAE_EMAIL			Date		
Date			Approve:	<input type="checkbox"/> accept	<input type="checkbox"/> unaccepted
Note:					

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## 1. FEATURE

Wide Frequency range  
Small size  
Tape & Reel

## 2. APPLICATIONS

Microprocessor Systems  
Consumer Electronics

## 3. ELECTRICAL SPECIFICATIONS

Frequency	32.768KHz
Frequency Tolerance(at 25°C)	±20ppm
Load Capacitance(C <sub>L</sub> )	12.5PF
ESR	50 KΩ Max
Turnover Temperature	25 ± 3°C
Frequency stability vs Temperature Range	-40 °C to + 85 °C
Frequency Temperature Curve	-0.04ppm/°C <sup>2</sup> MAX
Storage Temperature Range	-55 °C to +125 °C
Operating Temperature Range	-40 °C to +85 °C
Shunt Capacitance (C <sub>0</sub> )	0.9pF Typ
Dynamic Capacitance (C <sub>1</sub> )	2.6fF Typ
Driver Level (Typical)	1 μW Max
Insulation Resistance	500MΩ MIN at DC100V±15V
Aging @25°C 1 <sup>st</sup> year (Max)	±3ppm/year max

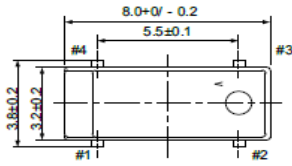
**REMARK:** SPECIFICATIONS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE. PLEASE CONFIRM WITH OUR SALES ENGINEER.

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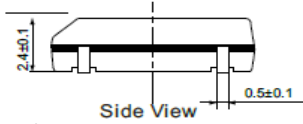
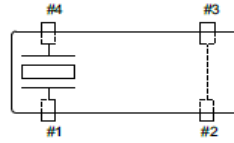
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## 4. DIMENSION (Units: mm)



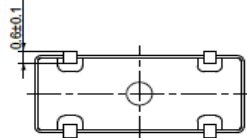
Top View

Top View Crystal Connection

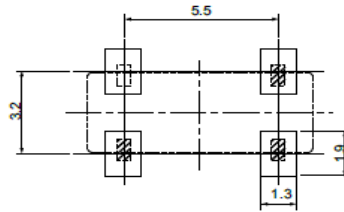


Side View

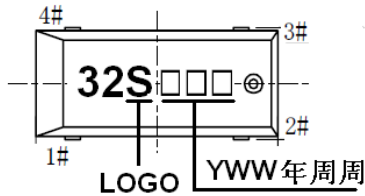
Top View Suggested Layout



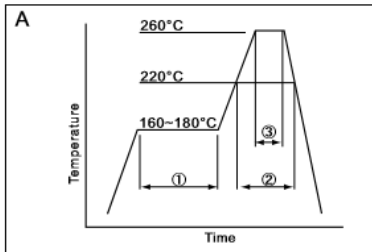
Bottom View



## 5. MARKING

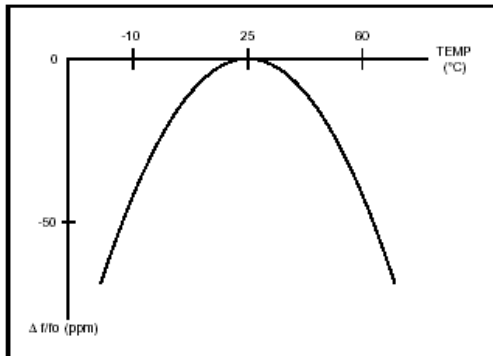


## 6. REFLOW CONDITION



① Preheat	160~180°C	120sec.
② Primary heat	220°C	60sec.
③ Peak	260°C	10sec. max

## 7. FREQUENCY VS TEMPERATURE CURVE



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## 8. RELIABILITY TEST SPECIFICATION

### 1. Mechanical Endurance

No.	Test Item	Test Methods	REF.DOC
1.1	Drop Test	150 cm height, 3 times on concrete floor.	JIS C6701
1.2	Mechanical Shock	Device are shocked to half sine wave ( 1000 G ) three mutually perpendicular axes each 3 times. 0.5m sec. duration time	MIL-STD-202F
1.3	Vibration	Frequency range 10 ~ 2000 Hz Amplitude 1.52 mm/20G Sweep time 20 minute Perpendicular axes each test time 4 hours (Total test time 12 hours)	MIL-STD-883E
1.4	Gross Leak	Standard Sample For Automatic Gross Leak Detector, Test Pressure: 2Kg / cm <sup>2</sup>	MIL-STD-883E
1.5	Fine Leak	Helium Bombing 4.5 Kg/ cm <sup>2</sup> for 2 hr	MIL-STD-883E
1.6	Solder ability	Temperature 245 °C ± 5°C Immersing depth 0.5 mm minimum Immersion time 5 ± 1 seconds Flux Rosin resin methyl alcohol solvent ( 1 : 4 )	MIL-STD-883E

### 2. Environmental Endurance

No.	Test Item	Test Methods	REF.DOC
2.1	Resistance To Soldering Heat	Pre-heat temperature 125 °C Pre-heat time 60 ~ 120 sec. Test temperature 260 ± 5 °C Test time 10 ± 1 sec.	MIL-STD-202F
2.2	High Temp. Storage	+ 125 °C ± 3 °C for 500 ± 12 hours	MIL-STD-883E
2.3	Low Temp. Storage	- 40 °C ± 3 °C for 500 ± 12 hours	MIL-STD-883E
2.4	Thermal Shock	Total 100 cycles of the following temperature cycle 	MIL-STD-883E
2.5	High Temp & Humidity	85°C ± 3°C, RH 85% , 500Hrs	JIS C5023
2.6	Pressure Cooker Storage	121 ± 3°C , RH100% , 2 bar , 240Hrs	JIS C6701