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# Product Specifications Approval Sheet

Product Description: SAW Resonator 1030 MHz +-50KHz SMD 3.0x3.0mm

TST Parts No.: TC0669A

Customer Parts No.:________________________

Company:________________________

Division:________________________

Approved by :________________________

Date:________________________

Checked by: Hong Pu Lin Hong Pu Lin

Approval by: Andy Yu Andy Yu

Date: 2019/06/04

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes

FR-71S03-02



**TST DCC**
Release document

**SAW Resonator 1030 MHz**

MODEL NO.: TC0669A Rev. NO. 1.0

## A. MAXIMUM RATING:

1. Input Power Level: 0 dBm
2. DC voltage: 3 V
3. Operating Temperature: -40°C to +85°C
4. Storage Temperature: -40°C to +85°C
5. Moisture Sensitivity Level: Level 1(**MSL1**)

RoHS Compliant
Lead free
Lead-free soldering

**E**lectrostatic **S**ensitive **D**evice

## B. ELECTRICAL CHARACTERISTICS:

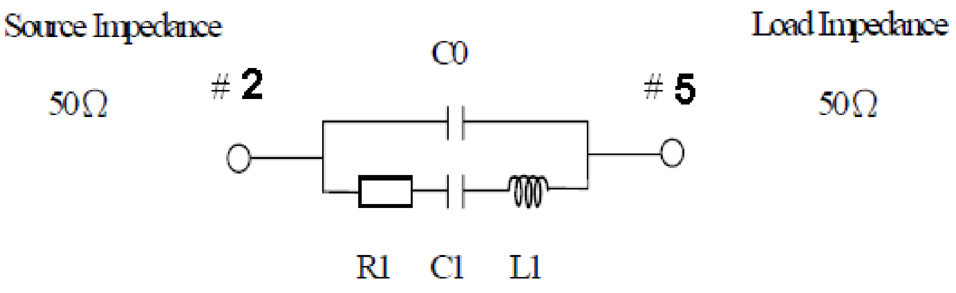
| Characteristic | Units | Min | Type | Max |
|---|---|---|---|---|
| **Center frequency** | MHz | 1029.95 | 1030 | 1030.05 |
| **Insertion Loss** | dB | | 1.6 | 2.5 |
| **Unloaded Q Factor** | - | | 7000 | |
| **Motional Capacitance** | fF | | 0.97 | |
| **Motional Inductance** | μH | | 21.53 | |
| **Motional Resistance** | Ω | | 19.71 | |
| **Parallel Capacitance** | pF | | 2.11 | |
| **Frequency Temperature coefficient ($TC_f$)** | ppm/$^oC^2$ | | -0.032 Typ. | |
| **Turnover To** | $^oC$ | 10 | 25 | 40 |
| **Package size** | mm | | 3.0 x 3.0 | |

*Frequency define by Yr(real) peak at room temperature.

Temperature dependence of fc: $fc(T_A)=fc(T_O)(1-TC_f(T_A-T_O)^2)$

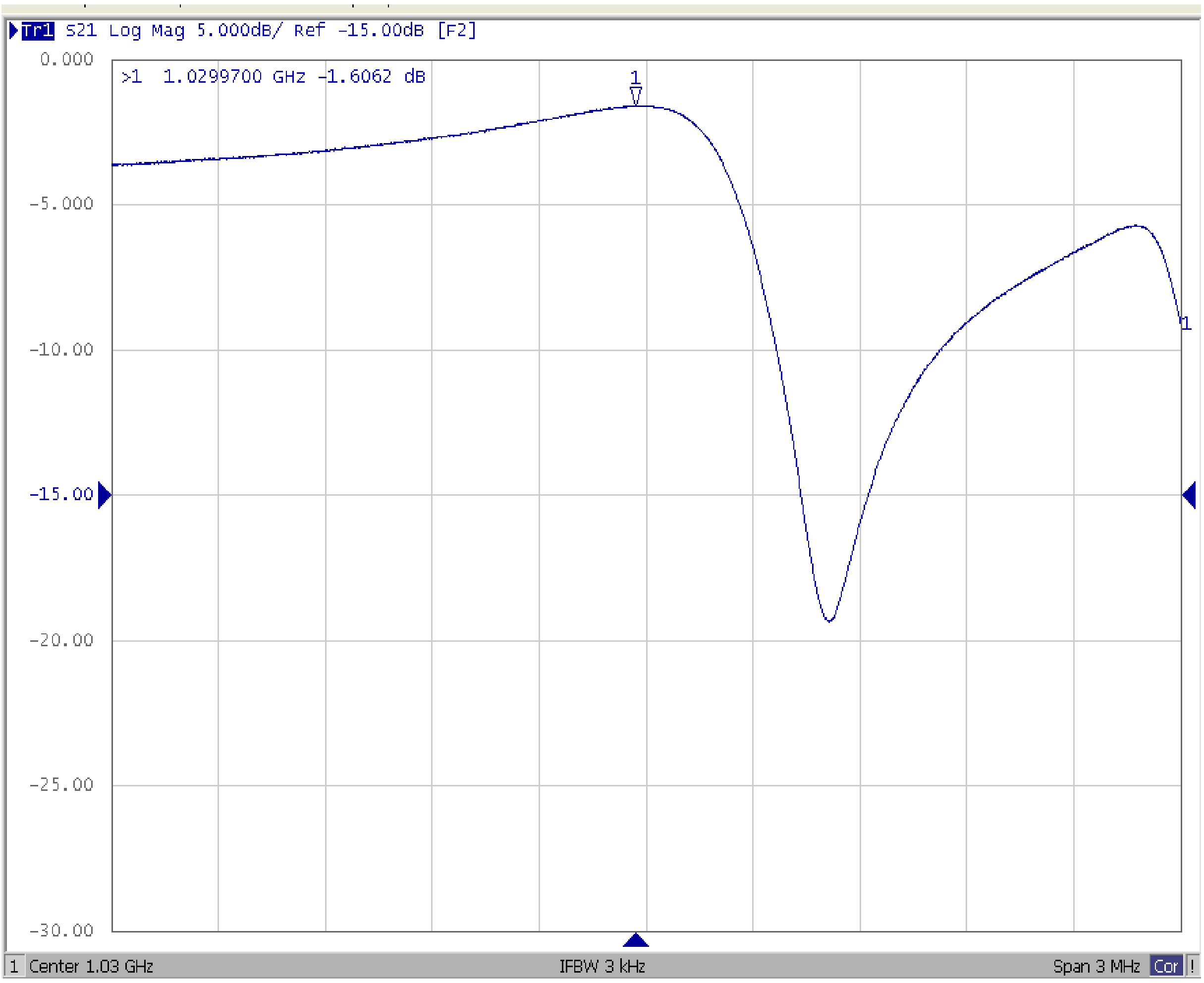
## C. EQUIVIRENT CIRCUIT:

One-Port Resonator:



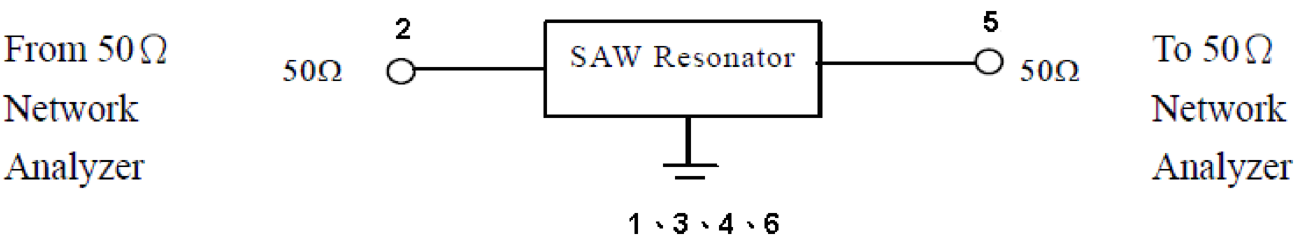
## D. FREQUENCY CHARATERISTICS:

Resonator S21

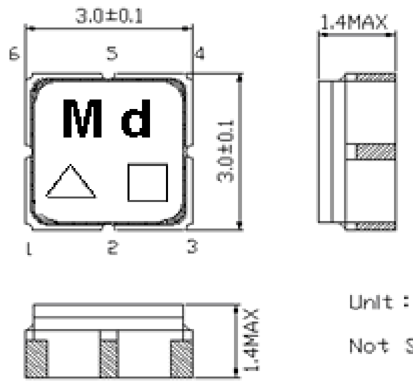



## E. TEST CIRCUIT:

Network analyzer

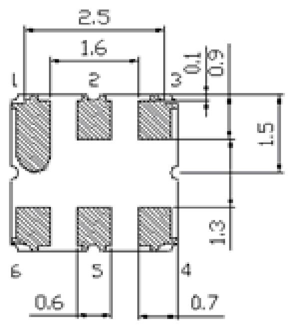


## F. MECHANICAL DIMENSIONS:




Unit : mm

Not Specified Tolerance : +/-0.15 mm



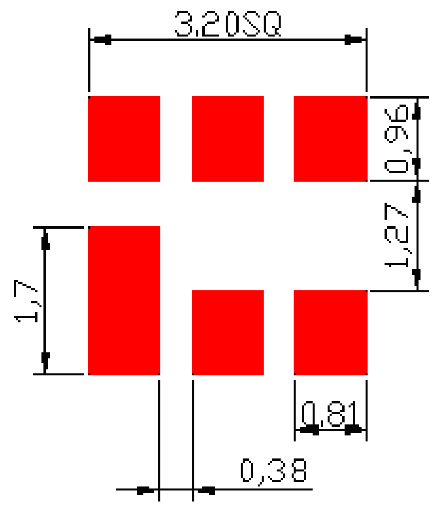

| Pin No. | Symbol | Function |
|---|---|---|
| 1 | GND | Ground |
| 2 | IN | Input |
| 3 | GND | Ground |
| 4 | GND | Ground |
| 5 | OUT | Output |
| 6 | GND | Ground |

△ : Year Code (2009->9, 2010->0,..., 2018->8)

☐ : Date Code (Follow the table from planner each year)

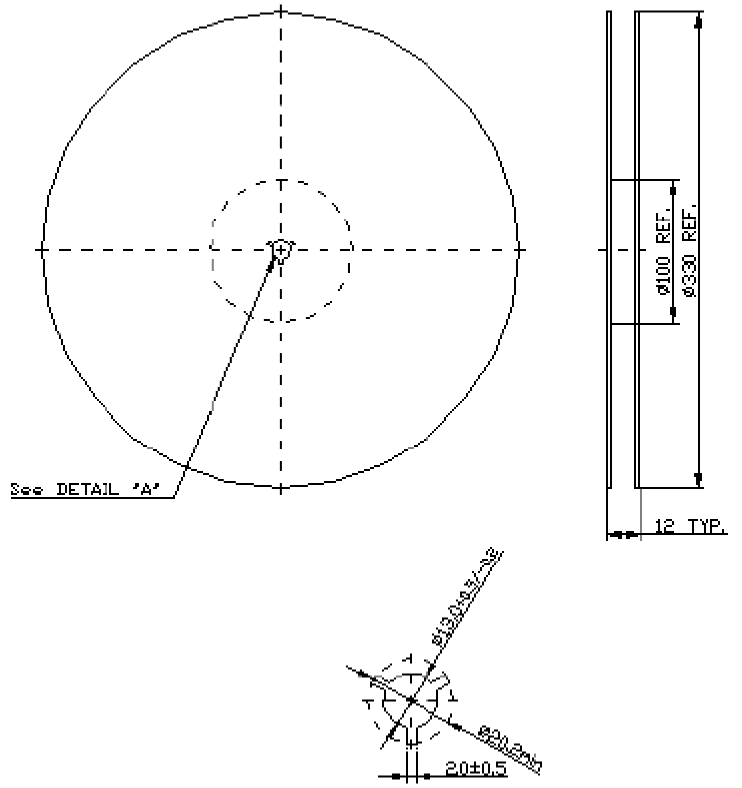
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WK01 | WK02 | WK03 | WK04 | WK05 | WK06 | WK07 | WK08 | WK09 | WK10 | WK11 | WK12 | WK13 |
| A | B | C | D | E | F | G | H | I | J | K | L | M |
| WK14 | WK15 | WK16 | WK17 | WK18 | WK19 | WK20 | WK21 | WK22 | WK23 | WK24 | WK25 | WK26 |
| N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| WK27 | WK28 | WK29 | WK30 | WK31 | WK32 | WK33 | WK34 | WK35 | WK36 | WK37 | WK38 | WK39 |
| a | b | c | d | e | f | g | h | i | j | k | l | m |
| WK40 | WK41 | WK42 | WK43 | WK44 | WK45 | WK46 | WK47 | WK48 | WK49 | WK50 | WK51 | WK52 |
| n | o | p | q | r | s | t | u | v | w | x | y | z |

## G. PCB FOOTPRINT:

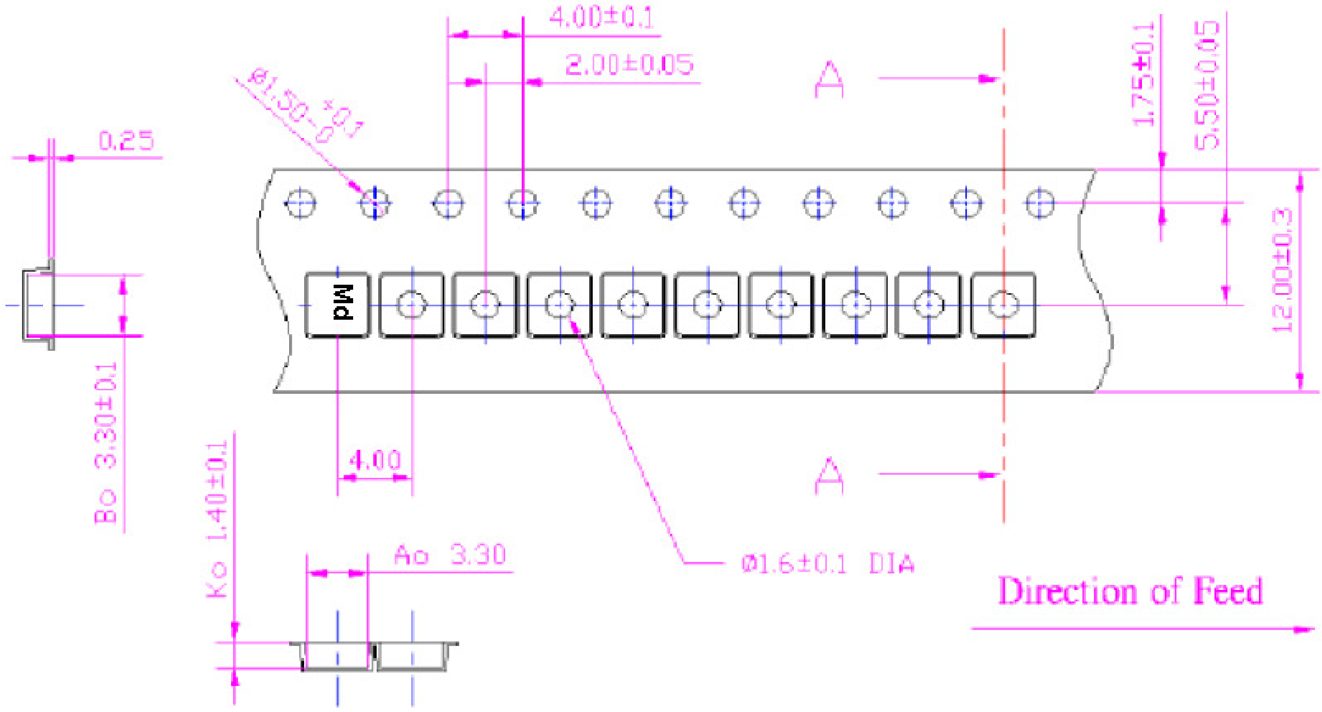


## H. PACKING:

1. REEL DIMENSION (Please refer to FR-75D10 for packing quantity)




2. TAPE DIMENSION



## I. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 260℃+0/-5℃ peak (20~40sec).
4. Time: 2 times.