Customer :

Customer P/N :

Part Name : TF206-32.768-12.5-20

Product Description : 2\*6 32.768KHZ 12.5PF 10PPM（插件)

Issue Date : 2018 年 12 月 05 日

**CUSTOMER’S APPROVAL**

**(PLEASE RETURN A COPY WITH APPOVAL**

|  |  |
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| **APPROVED** | **DESIGNER** |
|  |  |

SALE Department ：TEL ：0756-6242612 17841576178

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| REV. | Description of Revision History | Date | Designer | Checked By |
| A | New revision | 2014 年 10 月30 日 | Dai Wei | Huang xm |

1. Description: Tuning Fork Quartz Crystal
2. Nominal Frequency: 32.768KHz
3. Oscillation Mode: Fundamental
4. Cutting Mode: x +2° cut
5. Measurement Instrument: S&A 250B(Measured FL)
6. Electrical Characteristics: [1]Operation Conditions:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Symbol | MIN. | TYP. | MAX. | Unit | Condition |
| Operating Temperature Range | Topt | -20 |  | 70 | ℃ |  |
| Storage Temperature Range | Tstg | -40 |  | 85 | ℃ |  |
| Load Capacitance | CL |  | 12.5 |  | pF |  |
| Drive Level | DL |  | 0.1 |  | uW |  |

* 1. Frequency Stability:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Symbol | MIN. | TYP. | MAX. | Unit | Condition |
| Tolerance | dF/Fo | -10 |  | +10 | ppm | Refer to Center Frequency@25±3℃ |
| Stability Over Temperature | dF/F25 |  | -0.034 |  | ppm/℃2 | Refer to Operating Temperature |
| Aging | dF/F25 | -5 |  | 5 | ppm | Per Year |

dF/Fo:Frequency Deviation Refer to Center Frequency dF/F25:Frequency Deviation Refer to 25℃ Frequency

* 1. Electrical Performance:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Symbol | MIN. | TYP. | MAX. | Unit | Condition |
| Equivalent Series Resistance | ESR |  |  | 40 | KΩ | @Series |
| Shunt Capacitance | C0 |  | 1.4 | 3 | pF |  |
| Insulation Resistance | IR | 500 |  |  | MΩ | @DC 100 Volt |

1. Marking:Laser

Marking Generally for empty. Refer to with Customer’s requirement.

1. Outline drawing (unit：mm)

0.25±0.1

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| --- |
| 9. Reliability Specification |
|  | Test Items | Test Method and Condition | Requirements |
|  | Vibration | (1)Vibration Frequency 10 to 55Hz (2)Vibration Amplitude 1.5mm(3) Cycle Time 1-2min(10-55-10Hz) (4)Direction X.Y.Z (5)Duration 2h/each direction | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |
|  | Shock | 3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |
|  | Hermetic seal | Helium leak detectorChecked:before the molded crystal uints | less than 1 × 10 EXP(–7) mbar.l/sec. |
|  | Solder ability | Dip the leads of crystal units into the solution (7-10%) of rosin 3±0.5s,then dip it into the tank 5-10s.Temperature of solder melted tank is 245℃±5℃ | The dipped surface of the leads should be at least 95% covered with continuous new solder coating |
|  | High temperature | 96 hours at +100℃±2℃After 1-2hours past at room temperature from following | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |
|  | Low temperature | 72 hours at -40℃±2℃After 1-2hours past at room temperature from following test. | Frequency Change:±5ppm Max.Resistance Change: 5kohm Max. |
|  | Humidity | 96 hours at +40℃±2℃,relative humidity 90-95%After 1-2hours past at room temperature from following | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |
|  | Temperature cycle | After supplying the following temperature cycle (50cycles) | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max.x. |
|  | salt spray test | On the basis of GB/T10125-1997 | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |
|  | Lead strength | In the lead 2.00 Kg tensile force was applied at the end to keep more than 5 seconds | Frequency Change:±5ppm Max. Resistance Change: 5kohm Max. |

