

DOC NO : 1 OF 9

REFERENCE No :

DATE : Nov 21, 2003

# SPECIFICATION

## COMMERCIALLY AVAILABLE

ITEM: DIELECTRIC CERAMIC FILTER

PART NUMBER: CF-08950394

11/24/08 changed cover material from Sn/Pb to Sn

|                |         |         |         |          |
|----------------|---------|---------|---------|----------|
| CHANGE<br>DATE | 2003. . |         |         |          |
|                | 2003. . |         |         |          |
|                | 2003. . |         |         |          |
|                | 2003. . |         |         |          |
|                | 2003. . |         |         |          |
|                | 2003. . |         |         |          |
| ISSUED         | CHECKED | CHECKED | CHECKED | APPROVED |
|                |         |         |         |          |

**FILTRONETICS Inc.**

## 1. APPLICATION

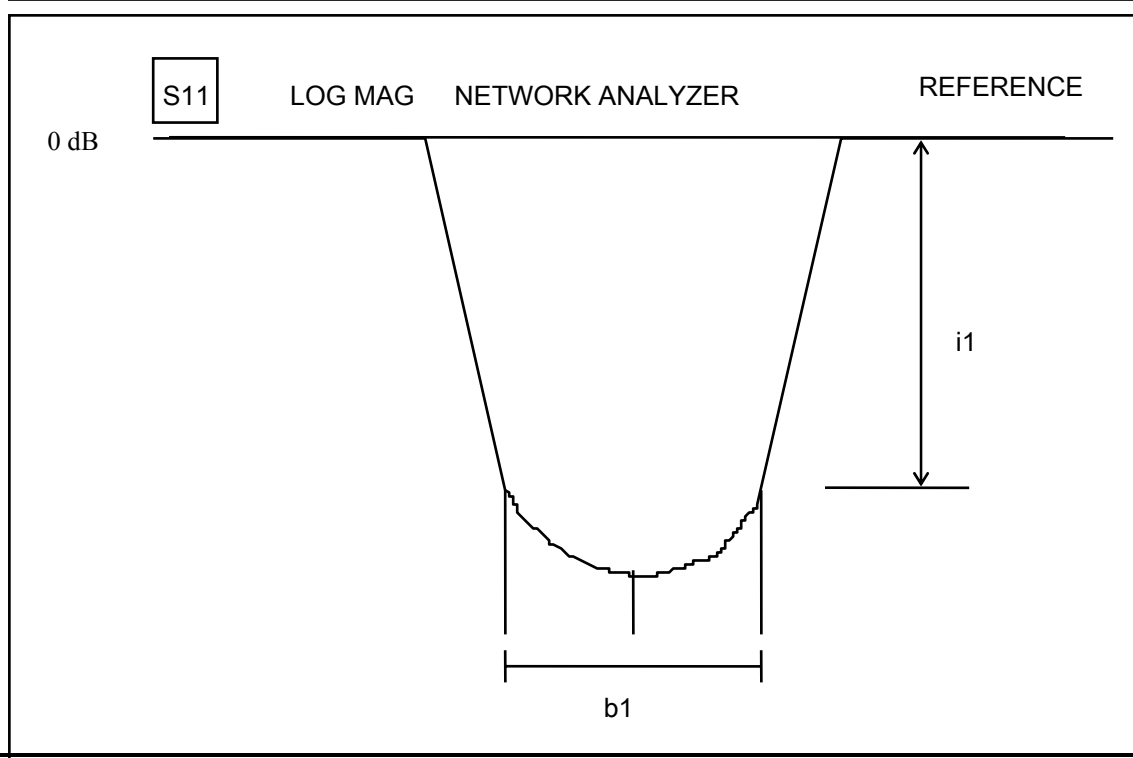
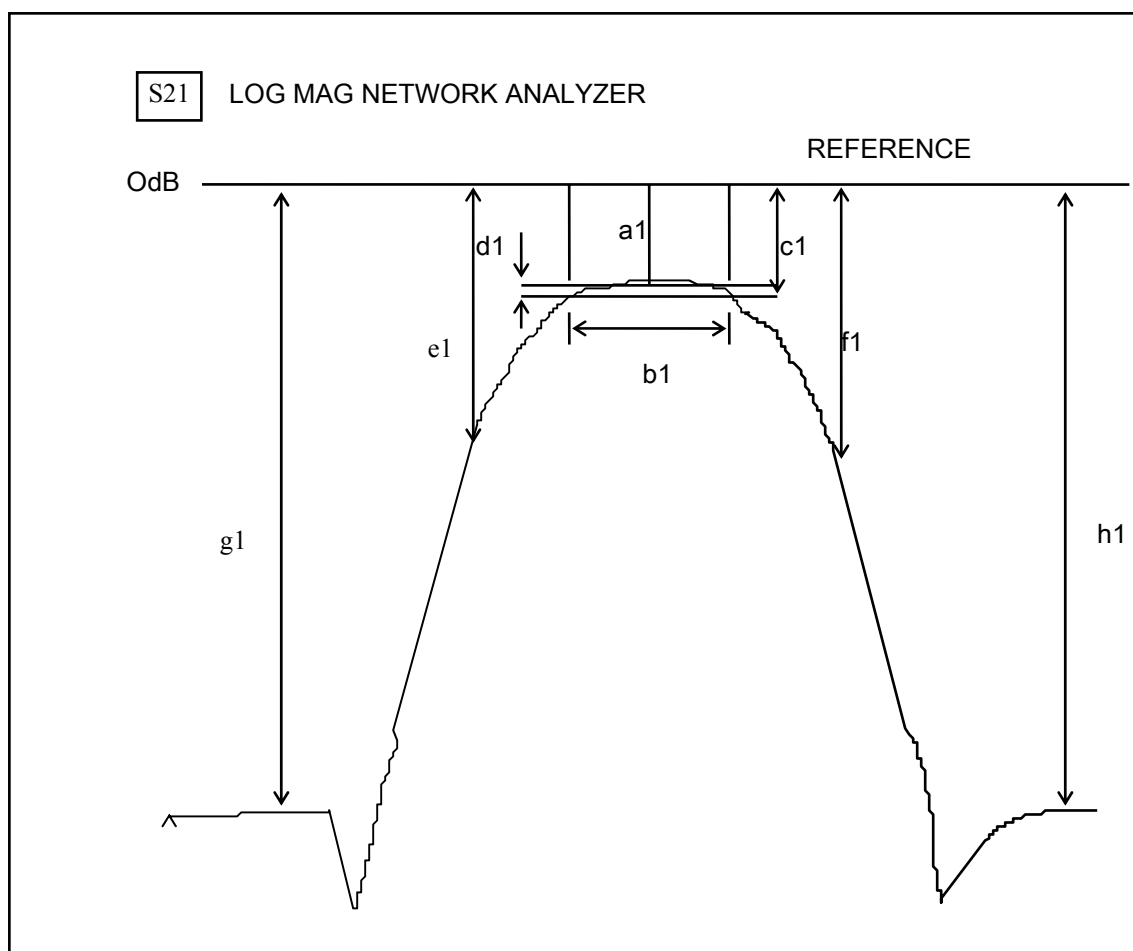
THIS SPECIFICATION APPLIES TO A BAND PASS FILTER USING DIELECTRIC RESONATORS.

## 2. PART NUMBER

|         |              |
|---------|--------------|
| PART NO | CF-08950394  |
| PACKING | PLASTIC TRAY |
|         |              |

## 3. SPECIFICATIONS

|    |                             |           |    |                      |
|----|-----------------------------|-----------|----|----------------------|
| 1  | Center Frequency (fo)       |           | a1 | 895.5 MHz            |
| 2  | Pass Band Width             |           | b1 | Fo +/-19.5 MHz       |
| 3  | Insertion Loss              | AT fo     | c1 | 2.6 dB max           |
| 4  | Ripple                      | in PB     | d1 | 0.5 dB max           |
| 5  | Attenuation                 | AT 850MHz | g1 | 16 dBc min           |
|    |                             | AT 941MHz | g1 | 14 dBc min           |
|    |                             |           | g1 | DB min               |
|    |                             |           | h1 | DB min               |
| 6  | Return Loss                 | in PB     | i1 | 13 dB min            |
| 7  | Impedance                   |           |    | 50Ω                  |
| 8  | Maximum Input Power         |           |    | 1 W (+30dBm)         |
| 9  | Group Delay                 | AT Fo     |    | max                  |
| 10 | Operating Temperature Range |           |    | -20 - +85 degree(°C) |

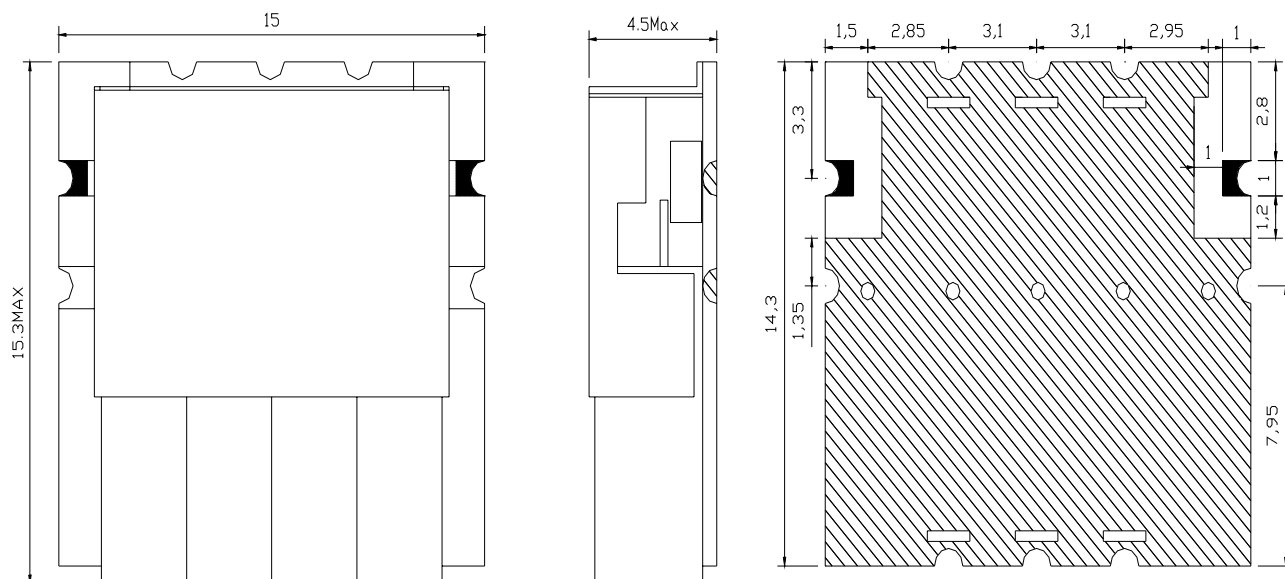


**4. SPECIFICATION**

| CHARACTERISTICS  | DESCRIPTION                                                                                                                                                   | SPECIFICATION    |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| CENTER FREQUENCY | THE MIDPOINT OF THROUGH BANDPASS FILTER PASSBAND, NORMALLY EXPRESSED AS THE ARITHMETIC MEAN OF THE -3dB POINT. ALSO CALLED $F_0$ .                            | 3. SPECIFICATION |
| PASS BAND WIDTH  | THE WIDTH OF THE PASSBAND OF A FILTER REFERENCED TO THE MINIMUM INSERTION LOSS POINT IN THE PASSBAND. THE PASSBAND OF A FILTER IS STATED AS -0.5dB BANDWIDTH. |                  |
| INSERTION LOSS   | THE LOSS OF THE FILTER, IN dB, MEASURED AT THE MAXIMUM LOSS POINT OF THE PASSBAND RELATIVE TO A THROUGH LINE (0 dB).                                          |                  |
| ATTENUATION      | REDUCTION OF RF POWDER THROUGH A FILTER, MEASURED IN dB, AT DESIRED BAND RELATIVE TO LOSS OF FILTER AT CENTER FREQUENCY.                                      |                  |
| PASSBAND RIPPLE  | VARIATIONS IN LOSS IN THE PASSBAND OF THE FILTER, SUPERIMPOSED UPON THE FUNDAMENTAL SHAPE OF THE PASSBAND.                                                    |                  |
| V.S.W.R in PB    | THE RATIO OF THE MAXIMUM VALUE OF A STANDING WAVE TO ITS MINIMUM VALUE, RELATED TO THE RETURN LOSS IN PASSBAND.                                               |                  |

**5. DIMENSIONS**

UNIT : mm



CONDUCTIVE METAL(IN/OUT)

CONDUCTIVE METAL(GROUND)

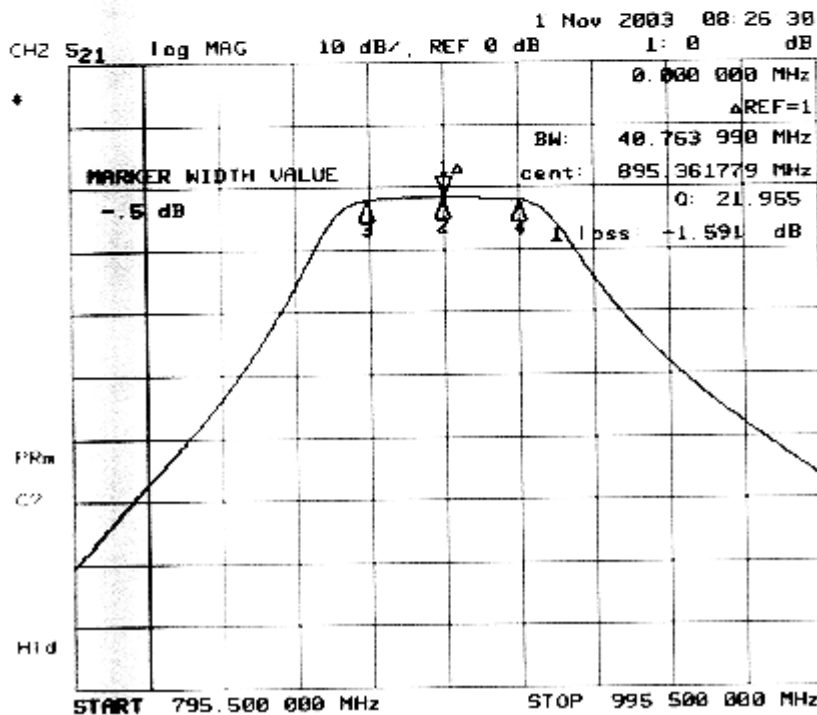
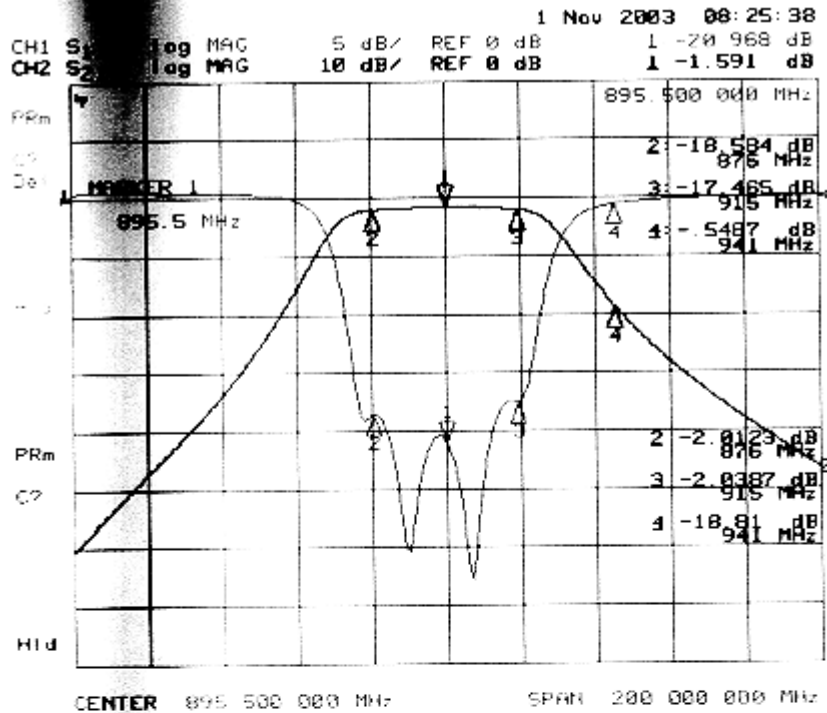
TOLERANCES: IN/OUT LAND PATTEN +/-0.3MILLIMETERS

OTHER ALL DIMENSION +/-0.5MILLIMETERS

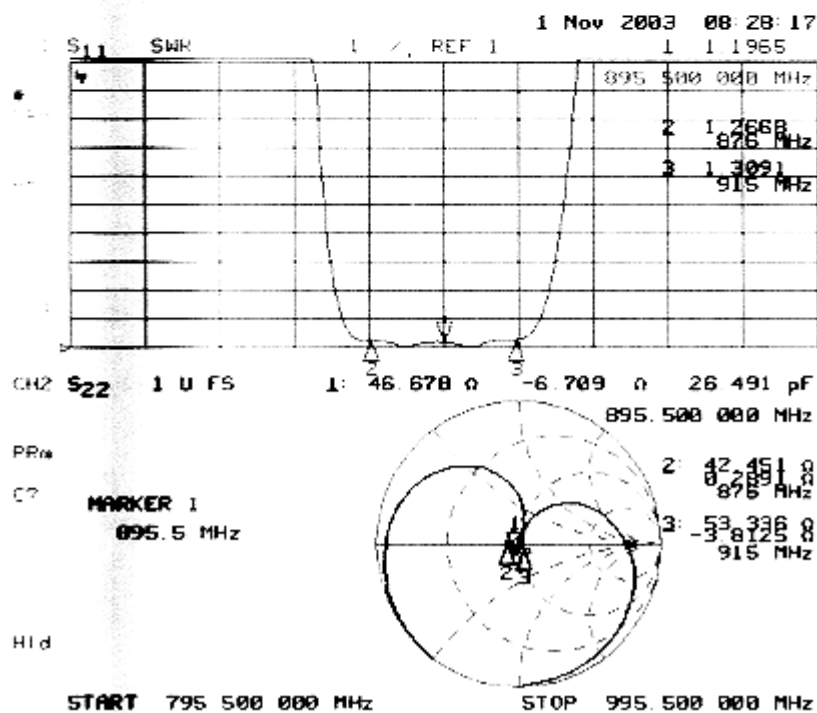
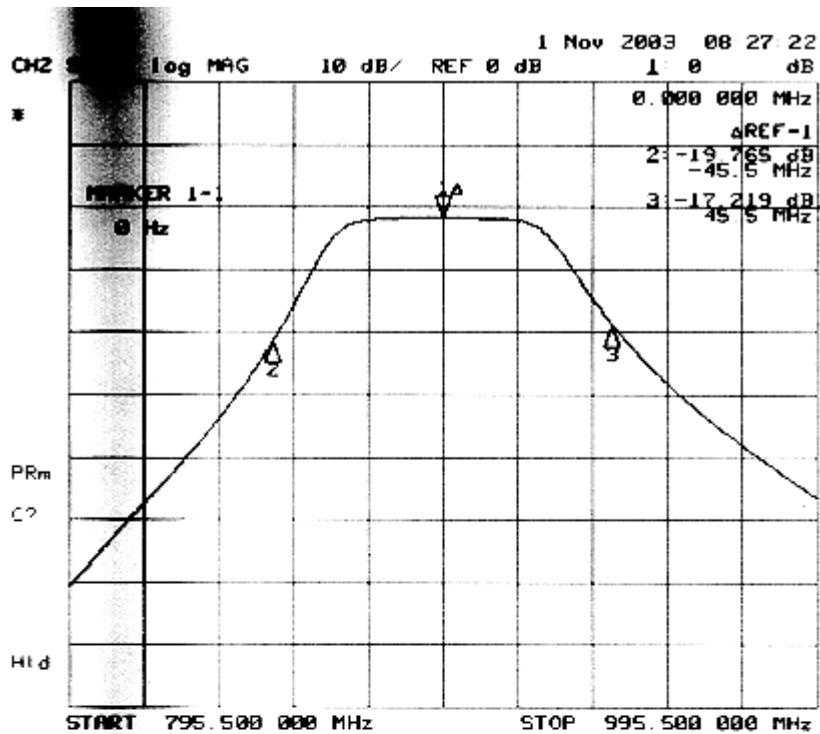
✕ Note : The number of through holes may be changed without notice.

✕ Mechanical Specifications

1. Resonators : Dielectric Resonator
2. Number of Poles: 4poles
3. Input/Output Terminals : Resin board (Gold on copper under-coating)
4. Cover Material : Brass ( tin plated(Sn)

**6.GRAPH:****S21 VS S11 (Insertion Loss , Return Loss ,0.5DB BAND WIDTH)**

## S21 VS S11 (ATTENUATION, SMITH CHART , V.S.W.R)

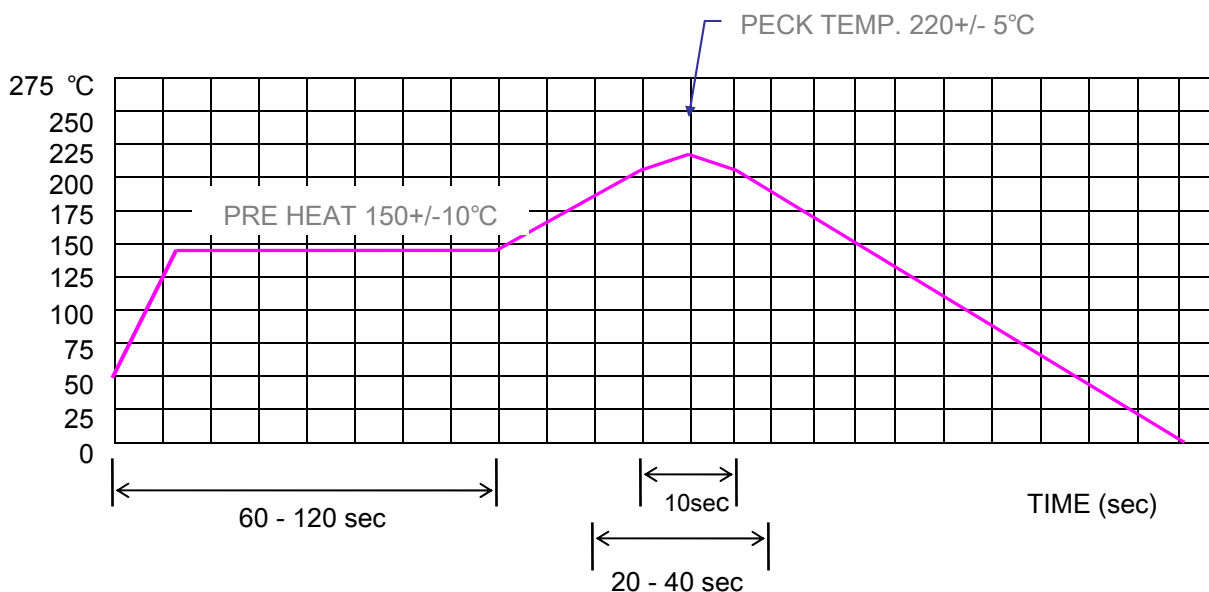


**7. RELIABILITY TEST AND CONDITIONS**

| ITEM                                          | TEST CONDITIONS                                                                                                                                                                                               | REQUIREMENTS                                                                                     |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Operating Temp. range                         |                                                                                                                                                                                                               | - 20°C ~ + 70°C                                                                                  |
| Resistance to<br>solder heat                  | Preheat temperature : 120 to 150°C<br>Preheat time : 1 to 1.5 min<br>Solder temperature : 260 +/- 10°C<br>Dipping time : 10 +/- 0.5 sec                                                                       | No damage such as cracks should<br>Be caused in chip element.                                    |
| Solderability                                 | Preheat temperature : 120 to 150°C<br>Preheat time : 1 to 1.5 min<br>Solder temperature : 235 +/- 5°C<br>Dipping time : 5 +/- 1 sec                                                                           | More than 80% of the terminal<br>electrode shall be covered with new<br>solder                   |
| Heat resistance<br>(High-temperature<br>load) | Temperature : 85 +/- 2°C<br>Applied voltage : Rated voltage<br>Applied current : Rated current<br>Recovery : 1 to 2hrs of recovery<br>under the standard<br>condition after the<br>removal from test chamber. | No mechanical damage.<br>After test, the device shall satisfy<br>the specification in section 3. |
| Thermal shock<br>(Temperature cycle)          | Conditions for 1 cycle / Step 1<br>: + 85°C 15 min<br>Step 2<br>: - 30°C 15 min<br>Number of cycle : 10                                                                                                       | No mechanical damage.<br>After test, the device shall satisfy<br>the specification in section 3. |
| Humidity resistance                           | Temperature : 40 +/- 2°C<br>Humidity : 90 to 95% RH<br>Duration : 96 +/- 5 hrs<br>Recovery : 1 to 2hrs of recovery<br>under the standard<br>condition after the<br>removal from test chamber.                 | No mechanical damage.<br>After test, the device shall satisfy<br>the specification in section 3. |
| Vibration                                     | Frequency : 10 ~ 50 Hz<br>Amplitude : 1.52 mm ( 0.060 inches)<br>Direction and time : X, Y and Z<br>Directions for 30 min each.                                                                               | No mechanical damage.<br>After test, the device shall satisfy<br>the specification in section 3. |



## 8. REFLOW SOLDERING STANDARD CONDITIONS



## 9. PACKING DIMENSION

### 9.1 PLASTIC TRAY

UNIT : INCH

