Messrs :

# SPECIFICATION

## Dielectric Antenna Duplexer

**DFA0836G0881A**

CUSTOMER P/N:

SEMCO P/N: DFA0836G0881A

ISSUED DATE: 21 JULY, 1998

| DRAWN BY | CHECKED BY | ISSUED BY |
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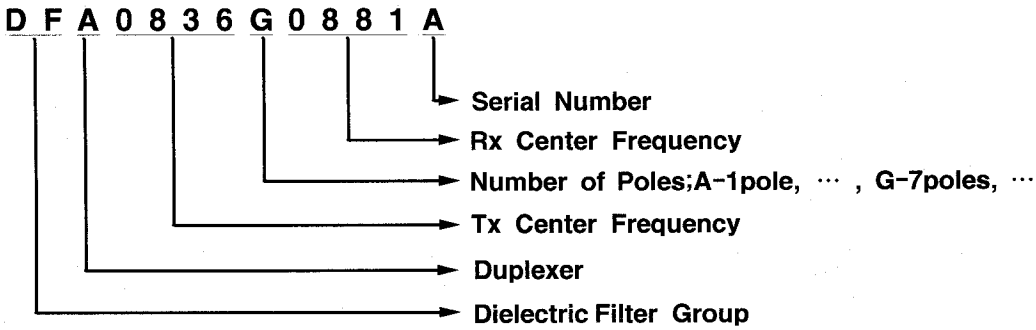
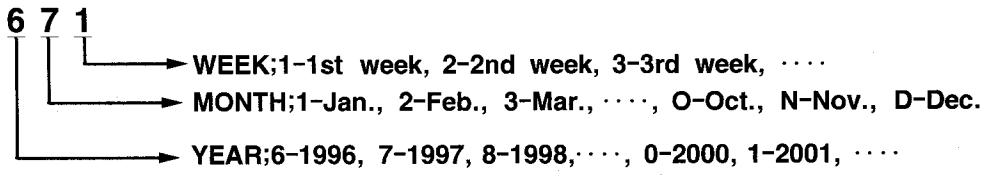
# 1. APPLICATION

This specification covers the dielectric antenna duplexer DFD0836G0881C used in AMPS/CDMA type cellular phone.

# 2. PART NUMBER




# 3. LOT NUMBERING



## 4. IMPLEMENTATION

4-1 Resonator : Cu or Ag Plated Dielectric Coaxial Resonator

4-2 TX : 3-pole B.E.F

RX : 3-pole B.P.F + 1-pole B.E.F

4-3 Case : Cu Pb/Sn Plating

## 5. TEST CONDITION

5-1 Typical Condition

Temperature 20 ℃

Humidity 65 % RH

5-2 Standard Condition

Temperature 5 ~ 35 ℃

Humidity 45 ~ 85 % RH

## 6. TEMPERATURE RANGE

6-1 Operating -30 ~ +85 ℃

6-2 Storage -40 ~ +85 ℃

## 7. ELECTRICAL SPECIFICATION

| ITEM | TX | | RX | |
|---|---|---|---|---|
| Center Frequency | 836.5 ㎒ | | 881.5 ㎒ | |
| Bandwidth | 836.5 ± 12.5 ㎒ | | 881.5 ± 12.5 ㎒ | |
| Insertion Loss | 2.7 ㏈ Max. | | 4.0 ㏈ Max. | |
| Ripple | 2.0 ㏈ Max. | | 2.0 ㏈ Max. | |
| V.S.W.R | 1.7 Max. | | 1.8 Max. | |
| ATTENUATION | Freq.(㎒) | Attenuation | Freq.(㎒) | Attenuation |
| | 869 ~ 894 | 40 ㏈ Min. | 824 ~ 849 | 50 ㏈ Min. |
| | 1648 ~1698 | 27 ㏈ Min. | | |
| | 2472 ~2547 | 30 ㏈ Min. | | |
| ISOLATION | 824 ~ 849 | 50 ㏈ Min. | | |
| | 869 ~ 894 | 40 ㏈ Min. | | |
| Rated Input Power | 3 W Max. | | 1 W Max. | |
| Input/Output Impedance | 50 Ω | | 50 Ω | |

※ REMARKS

① Characteristics of Tx side is measured by Tx terminal to Ant terminal.

② Characteristics of Rx side is measured by Ant terminal to Rx terminal.

③ The measurements are done with SEMCO's standard test fixture, with which the insertion loss error of Tx and Rx pass-band should be within 0.15 ㏈.

④ HP 8753C Network Analyzer is used in the measurements.

# 8. ENVIRONMENTAL SPECIFICATION

## 8-1 Operating Temperature Range

The device should satisfy the characteristics specified in Item 7 at the temperature range from -30℃ to +85℃.

## 8-2 Temperature Resistance

The device should satisfy the characteristics specified in Item 7 after being left at +90℃ for 96 hours and dried for 1 hour at 25±5℃ with humidity condition less than 65% relative humidity.

## 8-3 Humidity Resistance

The device is subjected to more than 85% relative humidity at 45℃ for 96 hours,and dried at 25±5℃ with less than 65% relative humidity for 2 hours. The device should satisfy the characteristics specified in Item 7 after drying out.

## 8-4 Vibration Resistance

The device is subjected to vibrations of 3 perpendicualar plane directions; x,y,z diirection; five sweeps for each direction. Vibration frequency is varied from 10Hz to 50Hz with 4㎜ double amplitude and from 50Hz to 500Hz with 10×9.8㎨ acceleration. The sweeping time of vibration frequency should be 15 minutes. The device should satisfy the characteristics specified in Item 7 after this test.

8-5 Mechanical Shock Resistance

The device is subjected to 3 shocks in each direction of 6 mutually perpendicular plane directions. Each shock should be a half-sine wave shaped with the magnitude of $30 \times 9.8 \text{m/s}^2$ acceleration and a duration of 11msec.

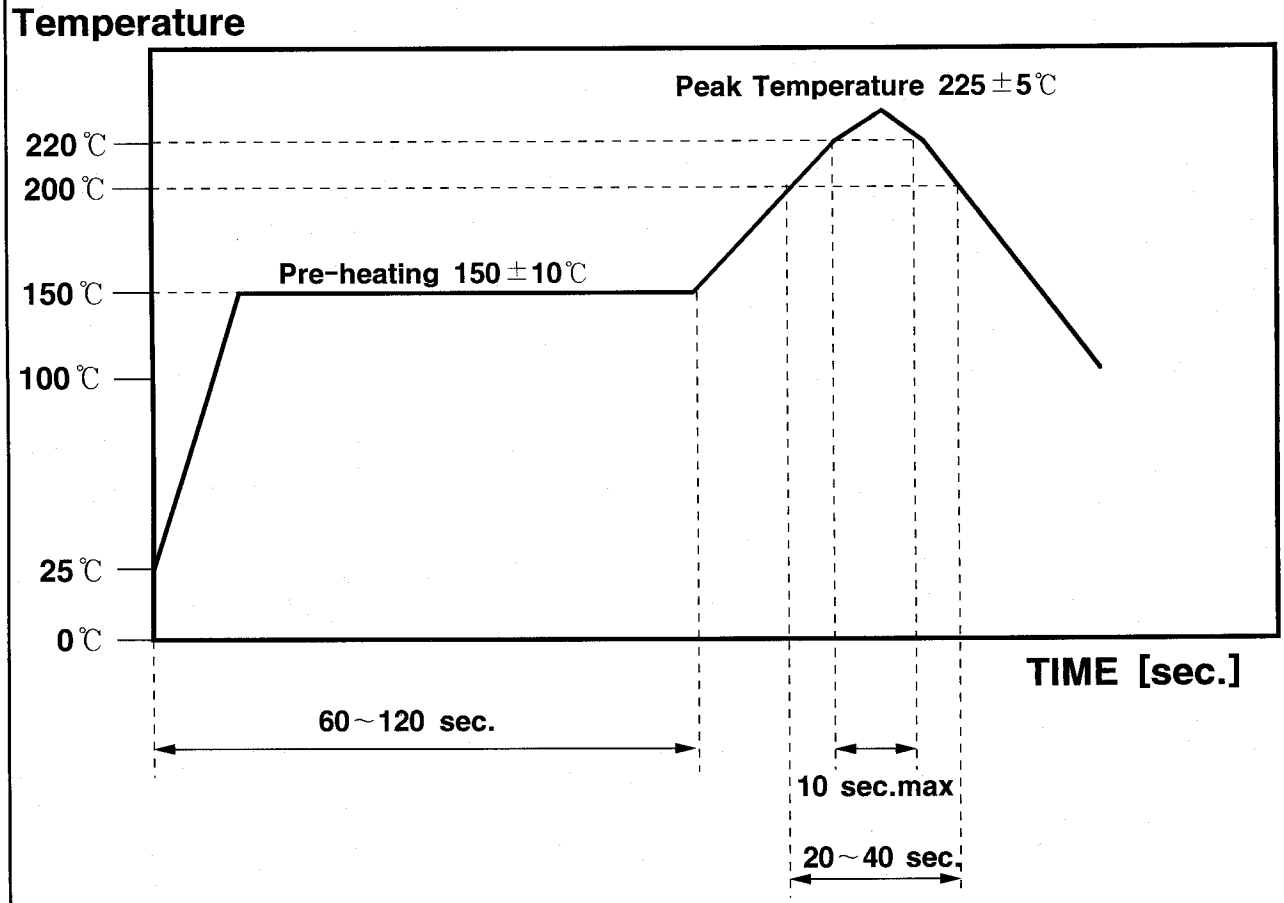
The device should satisfy the characteristics specified in Item 7 after this test.

8-6 Solderability

The bottom surface of the device PCB is subjected to the immersion in solder bath at $235 \pm 5$℃ for $5 \pm 0.5$ seconds with the speed of $25 \pm 2.5$㎜/sec. The flux must be used for this test and the terminal should guarantee more than 90% solder coverage after the test.

# 9. SOLDERING CONDITION

## 9-1 Standard Reflow Soldering Condition



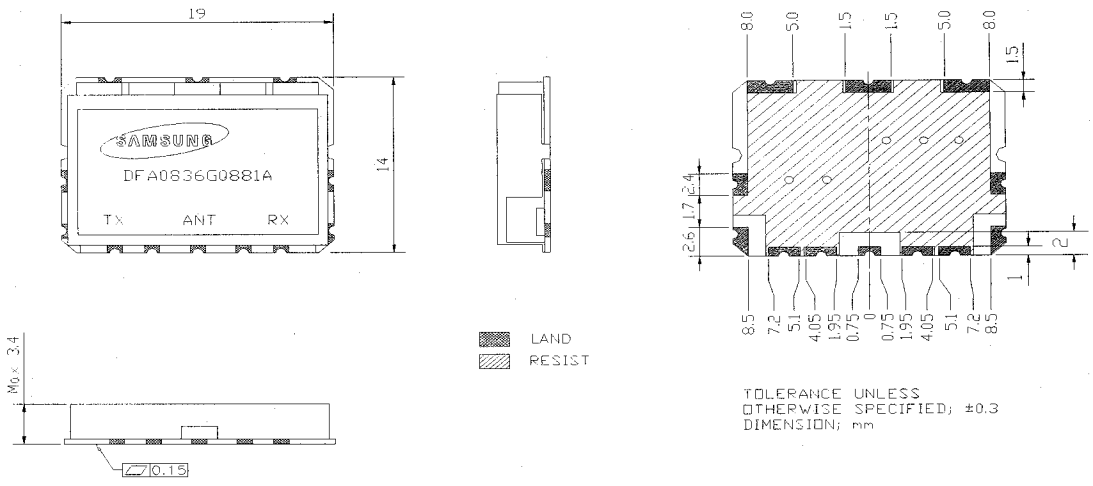

The standard condition of reflow soldering temperature and time is shown in the above. When the reflow soldering may be repeated, the maximum time must be the accumulated total time.

The temperature of the graph shown in the above must be the temperature at the in-output terminal of the device.

9-2 Manual Soldering(When using soldering iron)

| | |
|---|---|
| Pre-heating Temperature | : 120℃ |
| Time | : 60 ~ 300 sec. |
| Soldering Temperature of soldering iron | : 340℃±5℃ |
| Time | : max. 5 sec. per each terminal |

## 10. OUTSIDE DIMENSION AND LABELING




※ The number of through-hole can be changed without notice.

※※ The wordmark of label is temporarily adopted, and will be fixed soon.

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