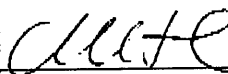


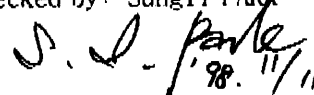
SMS-51-L-SFT-AY-1

NOVEMBER. 10. 1998

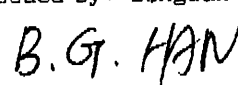
Approved by: KyoYoung JIN



Checked by: SungIl PARK

  
98. 11/11

Issued by: BongGun HAN



# SPECIFICATION

MODEL: H225AC

SURFACE ACOUSTIC WAVE FILTER

CAUTION : ELECTROSTATIC SENSITIVE DEVICE(ESD)  
Observe precautions for handling



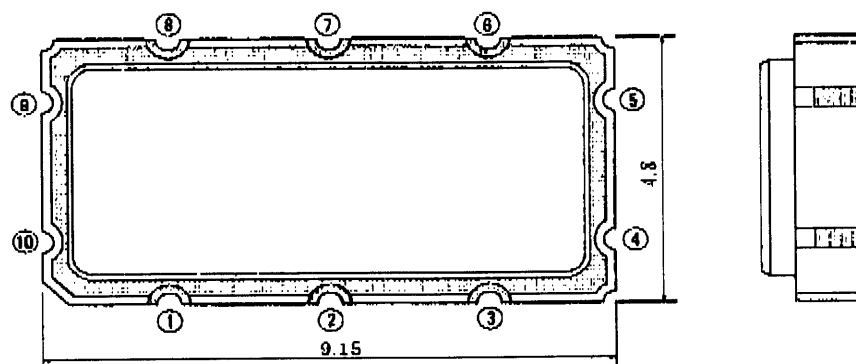
SAMSUNG ELECTRO-MECHANICS CO., LTD.  
314, MAETAN-3DONG, PALDAL-KU  
SUWON-SI, KYUNGKI-DO, KOREA

SMS-51-L-SFT-AY-1

## 1. OUTLINE DRAWING AND DIMENSION

TOP VIEW

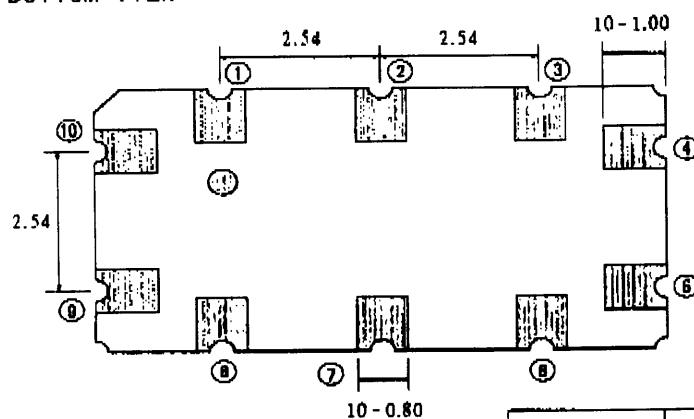
[Unit : mm]



SIDE VIEW



BOTTOM VIEW



| No.  | Function                        |
|------|---------------------------------|
| ⑤    | Input                           |
| ④    | Input ground or balanced input  |
| ⑩    | Output                          |
| ⑨    | Output ground or balanced input |
| ⑦    | Ext Coil                        |
| ①③⑥⑧ | Case-ground                     |
| ②    | To be grounded                  |

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## 2. MARKING

# H225AC

## 8N

① Color : Laser Marking or Sticker

② Model No. : H225AC

③ Lot No. : 8N

- The first character '8' indicates the year of manufacturing

1998 ——— 8

1999 ——— 9

2000 ——— 0

- The second character 'N' indicates the month of manufacturing

January ——— 1

February ——— 2

: :

October ——— 0

November ——— N

December ——— 0

## 3. PERFORMANCE

## 3-1. APPLICATION

Band-pass Filter for GSM, PCN, PCS IF Stage

Center Frequency : 225.0 MHz

## 3-2. MAXIMUM RATING

| Characteristics             | Rating      | Units |
|-----------------------------|-------------|-------|
| Maximum Input Power         | 10          | dBm   |
| Operating Temperature Range | - 25 ~ + 75 | ℃     |
| Storage Temperature Range   | - 25 ~ + 85 | ℃     |

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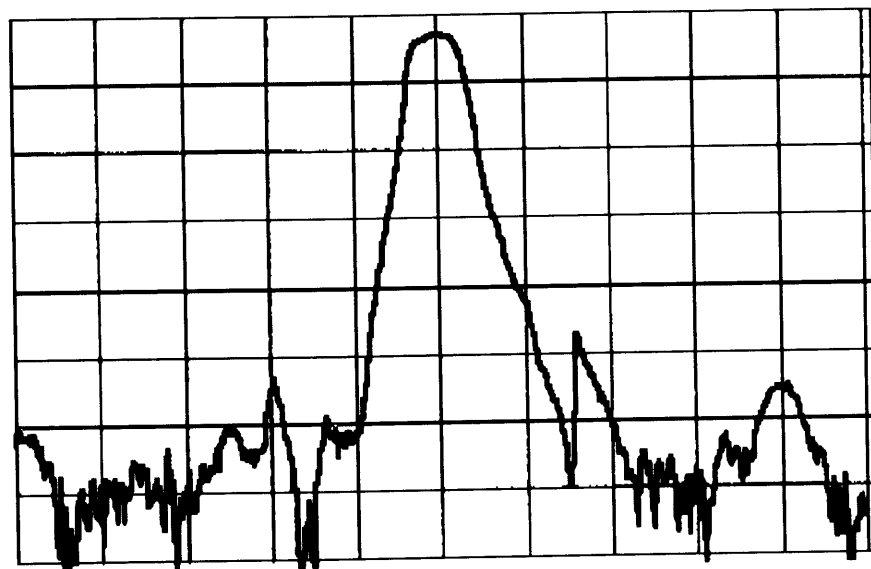
## 3-3. ELECTRICAL CHARACTERISTICS

3-3-1. TABLE

| Parameter             | Condition                                             | Unit    | specification    |
|-----------------------|-------------------------------------------------------|---------|------------------|
| Nominal frequency     | (fo)                                                  | MHz     | 225.0            |
| Bandwidth             |                                                       | KHz     | $f_o \pm 80$ min |
| Insertion loss        | In passband<br>(excluding losses in matching circuit) | dB      | 4.5 max.         |
| Group delay ripple    | In passband                                           | $\mu$ s | 2.0 max          |
| Attenuation           | $f_o - 25.0$ MHz ~ $f_o - 3.00$ MHz                   | dB      | 50 min.          |
|                       | $f_o - 3.00$ MHz ~ $f_o - 1.80$ MHz                   |         | 48 min.          |
|                       | $f_o - 1.80$ MHz ~ $f_o - 0.80$ MHz                   |         | 38 min.          |
|                       | $f_o - 0.80$ MHz ~ $f_o - 0.40$ MHz                   |         | 28 min.          |
|                       | $f_o - 0.40$ MHz ~ $f_o - 0.20$ MHz                   |         | 8 min.           |
|                       | $f_o + 0.20$ MHz ~ $f_o + 0.40$ MHz                   |         | 8 min.           |
|                       | $f_o + 0.40$ MHz ~ $f_o + 0.80$ MHz                   |         | 28 min.          |
|                       | $f_o + 0.80$ MHz ~ $f_o + 1.80$ MHz                   |         | 38 min.          |
|                       | $f_o + 1.80$ MHz ~ $f_o + 3.00$ MHz                   |         | 48 min.          |
|                       | $f_o + 3.00$ MHz ~ $f_o + 25.0$ MHz                   |         | 50 min.          |
| Terminating impedance | 650 Ohm // 238 nH                                     |         |                  |

## 3-3-2. GRAPH

Log MAG 10dB/div



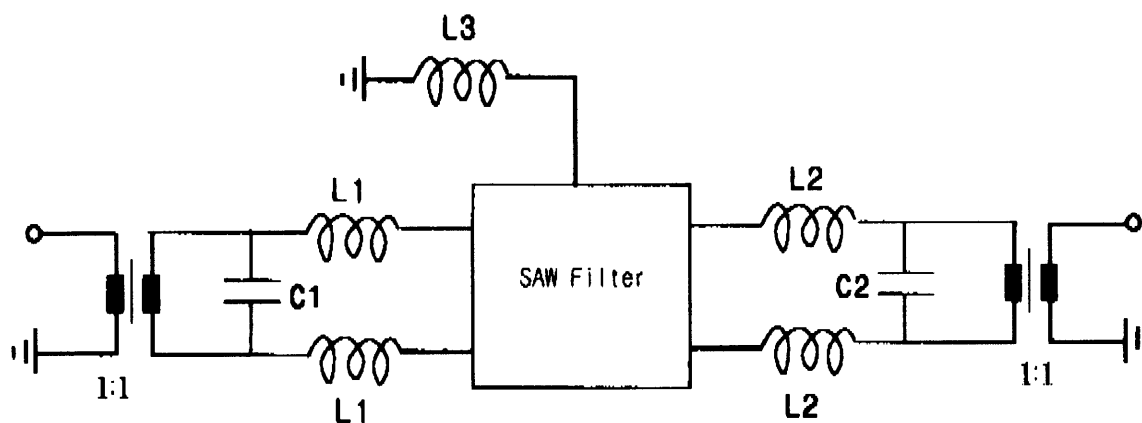
Center 225.0 MHz

Span 4.0MHz

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## 3-3-3. TEST FIXTURE

· Balanced drive

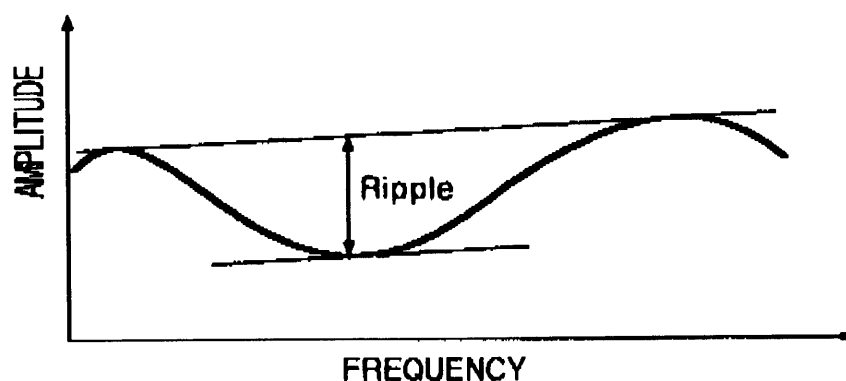
 $L1=82 \text{ nH}$  $L2=82 \text{ nH}$  $L3=120 \text{ nH}$  $C1=8.2 \text{ pF}$  $C2=8.2 \text{ pF}$ 

1:1 Transformer : Micom TP-101

\*\*The values of the matching components depending on stray capacitances of the P.C.B., must be modified for each customer application

## 3-3-4. Notice

1. An electrical compliance including this component should be tested at room temperature to ensure above specifications.
2. The passband ripple is obtained as shown in the picture below



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## 4. RELIABILITY

## 4-1. LIFE TEST

| ITEM                      | TEST CONDITION                                        | LIMIT                                                                                                                    |
|---------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| High Temperature Exposure | Ta = $+85 \pm 2^{\circ}\text{C}$ , 100h               | After the test, specimen would be kept at room temperature for 2 hours. Specimen shall meet the electrical specification |
| Low Temperature Exposure  | Ta = $-40 \pm 2^{\circ}\text{C}$ , 100h               |                                                                                                                          |
| Moisture Resistance       | Ta = $+40 \pm 2^{\circ}\text{C}$ ,<br>RH 90-95%, 250h |                                                                                                                          |
| Change due to Age         | Ta = $+85 \pm 2^{\circ}\text{C}$ , 720h               |                                                                                                                          |

## 4-2. HEAT CYCLE, SOLDERING TEST

| ITEM                                  | TEST CONDITION                                                                            | LIMIT                                                        |
|---------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Temperature Cycle                     | $-40^{\circ}\text{C}$ , 30min $\leftrightarrow$ $85^{\circ}\text{C}$ , 30min<br>10 cycles | SAME as 4-1                                                  |
| Solderability                         | Immerse the sample in solder at $230 \pm 5^{\circ}\text{C}$ for $5 \pm 1$ sec.            | More than 3/4 area of the pad should be covered with solder. |
| Resistance to Soldering Heat (Reflow) | Preheat : $180^{\circ}\text{C}$ , 2 min.<br>Reflow : $240^{\circ}\text{C}$ , 10 sec.      | SAME as 4-1                                                  |

## 4-3. MECHANICAL TEST

| ITEM      | TEST CONDITION                                                                                            | LIMIT       |
|-----------|-----------------------------------------------------------------------------------------------------------|-------------|
| Vibration | Amplitude=1.5mm, 10 $\leftrightarrow$ 55Hz,<br>sweep time=1min.,<br>3directions for 2 hours               | SAME as 4-1 |
| Shock     | Peak acceleration=1500G<br>Duration=0.5msec.,<br>Wave form=half-sine pulse,<br>6 direction each 3 shocks. |             |

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## 5. PACKING

## 5.1 Dimensions

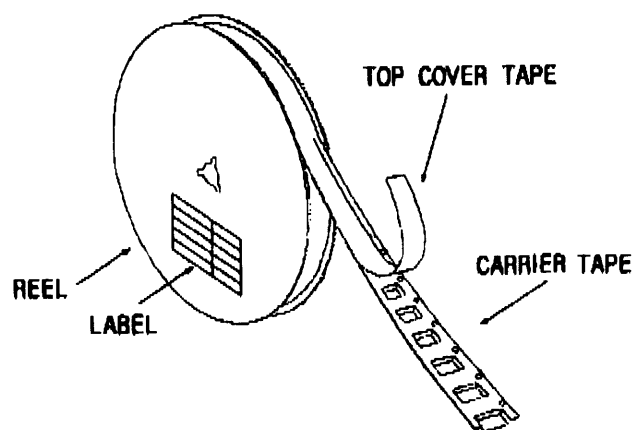
- (1) Carrier Tape : Figure 1 (P.8/10)
- (2) Reel : Figure 2 (P.9/10)
- (3) The product shall be packed properly not to be damaged during transportation and storage

## 5.2 Reeling Quantity

1,000 pcs/reel

## 5.3 Taping Structure

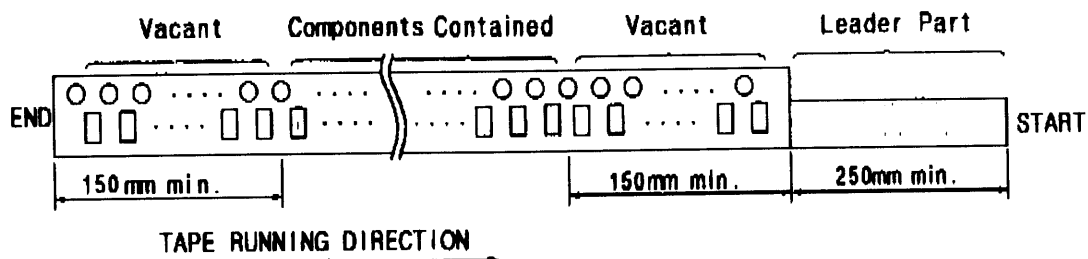
- (1) The tape shall be wound around the reel in direction shown below.



(2) Label

|                   |  |
|-------------------|--|
| Device Name       |  |
| User Product Name |  |
| Quantity          |  |
| Lot No.           |  |

- (3) Leader part and vacant position specifications.



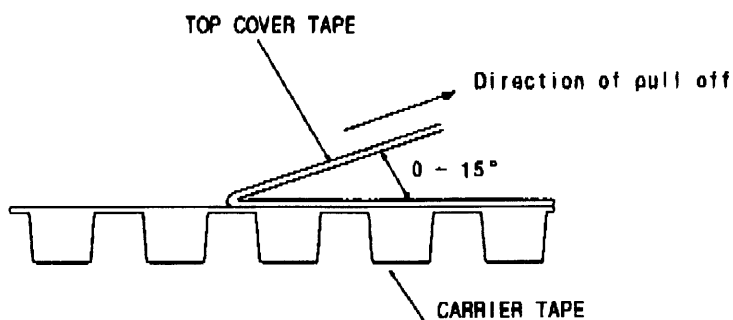
SMS-51-L-SFT-AY-1

## 6. Tape Specifications

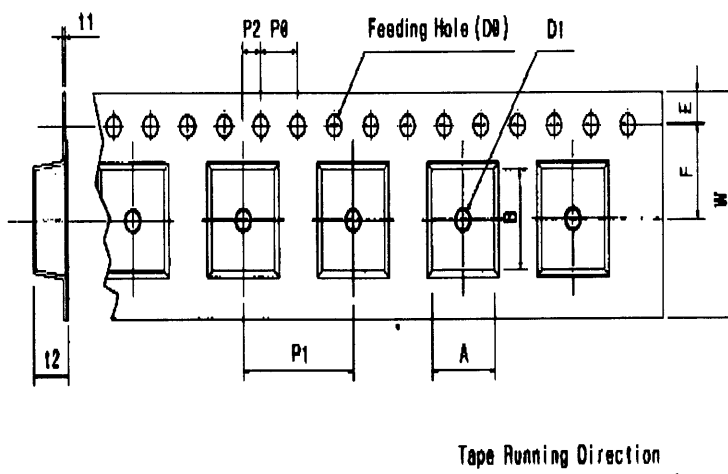
6.1 Tensile Strength of Carrier Tape : 4.4N/mm width

6.2 Top Cover Tape Adhesion(See the below figure)

- (1) pull of angle: 0~15 °
- (2) speed : 300mm/min.
- (3) force : 20~70g



[Figure 1] Carrier Tape Dimensions

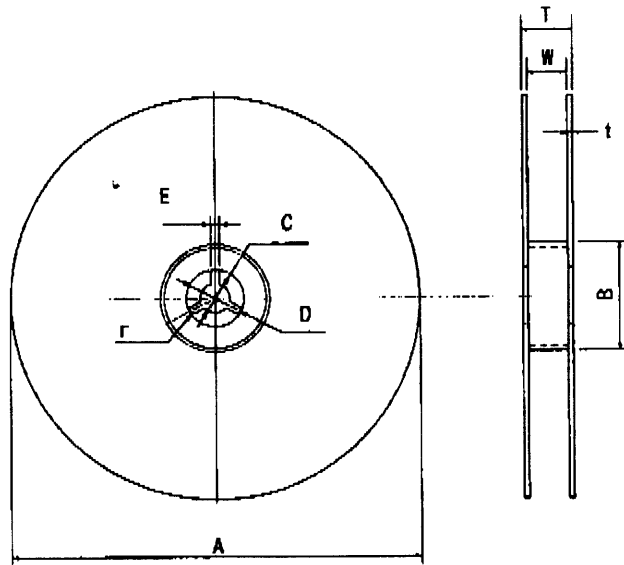


[Unit : mm]

| W    | F    | E    | P0   | P1   | P2   | D0   | D1   | t1    | t2   | A    | B    |
|------|------|------|------|------|------|------|------|-------|------|------|------|
| 16.0 | 7.5  | 1.75 | 4.0  | 8.0  | 2.0  | φ1.5 | φ1.5 | 0.3   | 2.0  | 5.33 | 9.6  |
| ±0.3 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.05 | ±0.1 | ±0.1 | ±0.1 |

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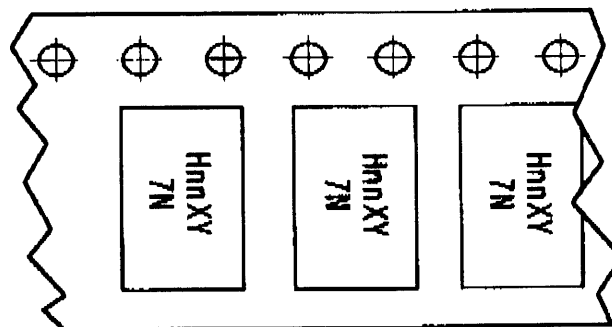
[Figure 2] Reel Dimensions



[Unit : mm]

| A                       | B                       | C                      | D                      | E                | W               | t                | T               | r                 |
|-------------------------|-------------------------|------------------------|------------------------|------------------|-----------------|------------------|-----------------|-------------------|
| $\phi 330$<br>$\pm 2.0$ | $\phi 100$<br>$\pm 2.0$ | $\phi 13$<br>$\pm 0.5$ | $\phi 26$<br>$\pm 0.5$ | 2.5<br>$\pm 0.1$ | 17<br>$\pm 0.5$ | 2.0<br>$\pm 0.1$ | 21<br>$\pm 0.5$ | 1.1<br>$\pm 0.05$ |

[Figure 3] Part Direction



Tape Running Direction

SMS-51-L-SFT-AY-1

## 7. CAUTION

- 7-1. This device should not be used in any type of fluid such as water, oil, organic solvent, etc.
- 7-2. Ultrasonic cleaning shall be avoided.
- 7-3. This is an electrostatic sensitive device.  
Please avoid static voltage during operation and storage.
- 7-4. Sudden change of temperature shall be avoided, deterioration of the characteristics can occur.

## 8. REVISION

| Date | Page | Revision | Reason |
|------|------|----------|--------|
|      |      |          |        |