

MAR. 26, 2001

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7/2 M/K

# SPECIFICATION

MODEL: 6361HM

SURFACE ACOUSTIC WAVE FILTER

## PRELIMINARY

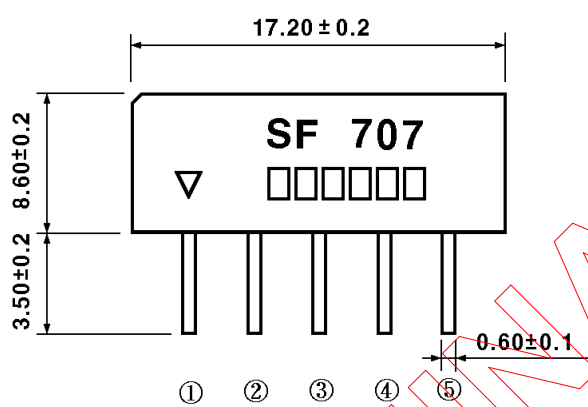
SAMSUNG ELECTRO-MECHANICS CO., LTD.  
314. MAETAN3-DONG, PALDAL-KU,  
SUWON-SI, KYUNGKI-DO, KOREA, 442-743

## 1. OUTLINE DRAWING AND DIMENSION

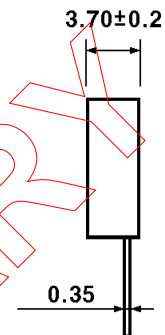
[UNIT: mm]



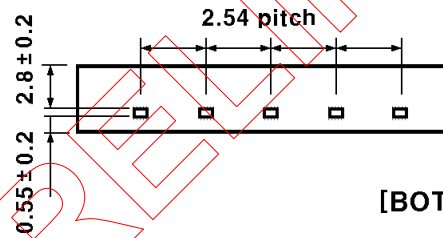
[TOP VIEW]



[SIDE VIEW]



[RIGHT SIDE VIEW]



[BOTTOM VIEW]

| PIN NO. | FUNCTION         |
|---------|------------------|
| ①       | Input            |
| ②       | Package Ground   |
| ③       | Ground           |
| ④       | Balance Output-1 |
| ⑤       | Balance Output-2 |

**2. MARKING**

SF 903  
 ▽ 6361HM

Color : White Ink or LASER Marking  
 Model No. : 6361HM (M-type Package)  
 Lot No. : 903  
 Pin No. 1: ▽

**3. PERFORMANCE****3-1. APPLICATION**

IF Filter for Digital Cable TV

**3-2. MAXIMUM RATING**

(Ta = 25℃ )

| CHARACTERISTICS             |                 | RATING    | UNITS            |
|-----------------------------|-----------------|-----------|------------------|
| Input signal voltage        |                 | 5         | V <sub>p-p</sub> |
| DC voltage                  | between inputs  | 3         | V                |
|                             | between outputs |           |                  |
|                             | between others  | 15        |                  |
| AC voltage : 50~60 Hz       |                 | 10        | V <sub>p-p</sub> |
| Operating temperature range |                 | -25 ~ +65 | ℃                |
| Storage temperature range   |                 | -25 ~ +85 | ℃                |

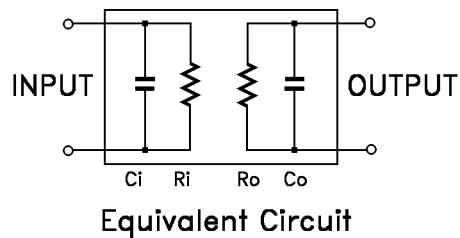
## 3-3. ELECTRICAL CHARACTERISTICS

3-3-1. TABLE

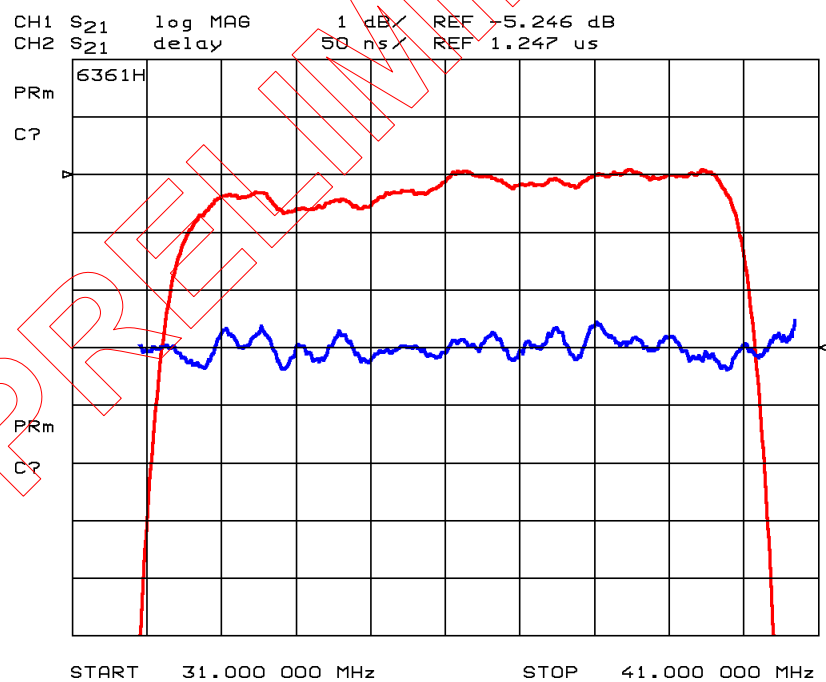
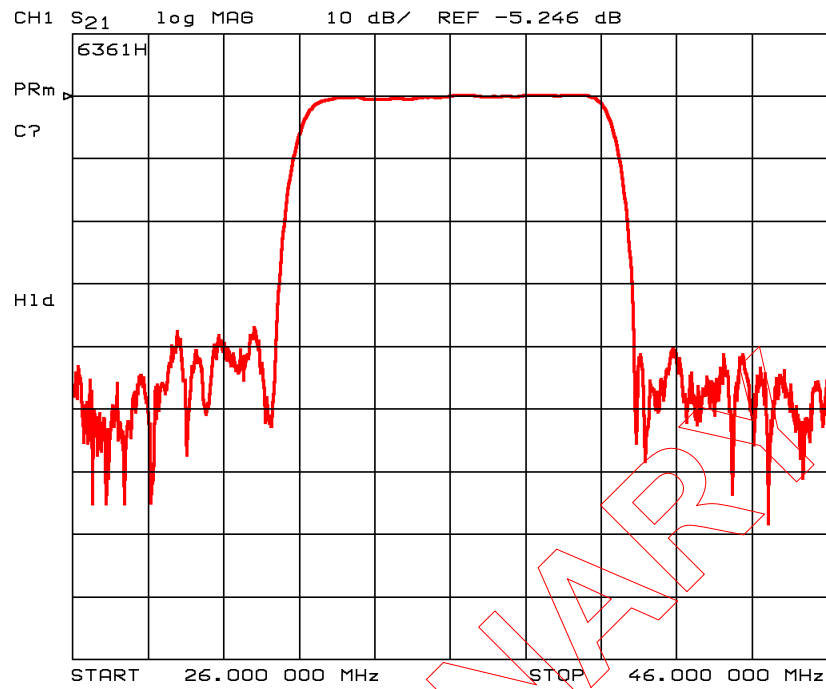
Ta=25℃

| CHARACTERISTICS                               |                                  | Freq. (MHz)                 | Specification |          |        |       | Test Fixture |
|-----------------------------------------------|----------------------------------|-----------------------------|---------------|----------|--------|-------|--------------|
|                                               |                                  |                             | Min.          | Typ.     | Max.   | Units |              |
| Insertion Loss( $\alpha$ )                    |                                  | 36.125                      | 3.5           | 5.0      | 6.5    | dB    | No. 1        |
| Pass Bandwidth                                | $\alpha$ -1dB                    |                             | -             | 7.4      | -      | MHz   |              |
|                                               | $\alpha$ -3dB                    |                             | -             | 7.9      | -      |       |              |
|                                               | $\alpha$ -30dB                   |                             | -             | 9.3      | -      |       |              |
| Relative Attenuation (Ref.: $\alpha$ )        |                                  | 31.25                       | 37            | 45       | -      | dB    |              |
|                                               |                                  | 32.13                       | 2.5           | 4.0      | 5.5    |       |              |
|                                               |                                  | 32.32                       | 0.7           | 2.2      | 3.7    |       |              |
|                                               |                                  | 39.93                       | 0.0           | 1.5      | 3.0    |       |              |
|                                               |                                  | 40.13                       | 1.4           | 2.9      | 4.4    |       |              |
|                                               |                                  | 47.25                       | 45            | 49       | -      |       |              |
|                                               | lower sidelobe<br>upper sidelobe | 25.0 ~ 31.25<br>40.9 ~ 50.0 | 32<br>32      | 36<br>38 | -<br>- |       |              |
| Amplitude Ripple(peak-peak)                   |                                  | 32.65 ~ 39.6                | 0.0           | 1.0      | 1.3    |       |              |
| Group Delay Ripple(max-min)                   |                                  | 32.32 ~ 39.93               | -             | 70       | -      | nsec  |              |
| Temperature Coefficient of Frequency Response |                                  |                             | -             | -72      | -      | ppm/℃ | No. 2        |
| Impedance                                     | R <sub>i</sub> /C <sub>i</sub>   |                             |               |          |        | kΩ/pF |              |
|                                               | R <sub>o</sub> /C <sub>o</sub>   |                             |               |          |        | kΩ/pF |              |

Impedance equivalent circuit is shown below.

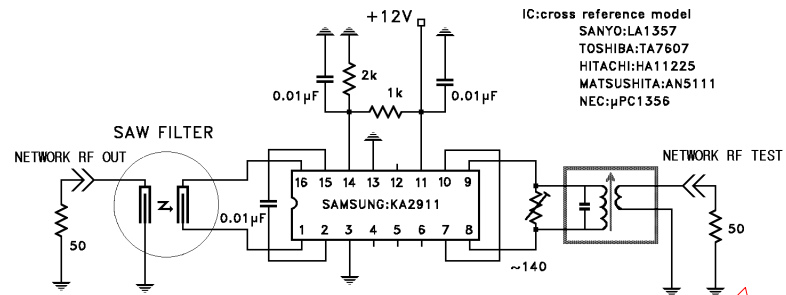


## 3-3-2. GRAPH

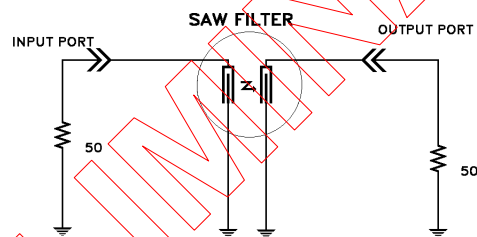


### 3-3-3. TEST FIXTURE

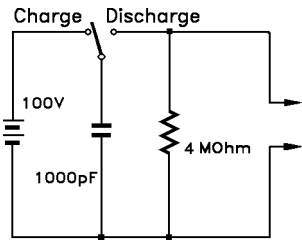
#### No. 1



#### No. 2



**4. RELIABILITY**

| ITEM                             | TEST CONDITION                                                                                                                   | LIMIT                                                                                                                                                        |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4-1. LIFE TEST                   |                                                                                                                                  |                                                                                                                                                              |
| High Temperature Operation       | Ta=+70±2℃, 500h, DC 3V, Output ports load.                                                                                       | insertion loss :<br>initial ±1.5dB<br><br>amplitude response :<br>pass bandwidth<br>α -1dB,-3dB,-30dB<br>initial ±0.5MHz<br><br>(with test fixture on No. 1) |
| High Temperature Exposure        | Tstg=+85±2℃, 500h                                                                                                                |                                                                                                                                                              |
| Low Temperature Exposure         | Ta=-40±2℃, 500h                                                                                                                  |                                                                                                                                                              |
| Moisture Resistance              | Ta=+40±2℃, RH 90~95%, 500h                                                                                                       |                                                                                                                                                              |
| Salt Spray                       | After soldering, 5% salt solution, 24h                                                                                           |                                                                                                                                                              |
| 4-2. HEAT CYCLE, SOLDERING TEST  |                                                                                                                                  |                                                                                                                                                              |
| Temperature Cycle                | (-20℃,30min→25℃,5min→80℃,30min→25℃,5min) 5 cycle.                                                                                | Same as 4-1.                                                                                                                                                 |
| Solderability                    | Immerse the pins in melt solder at 230±5℃ for 2+1-0 sec.                                                                         | More than 90% of total area of the pins should be covered with solder                                                                                        |
| Heat Resistivity for Melt Solder | Immerse the pins in melt solder at 260±5℃ for 10+2-0 sec.                                                                        | Same as 4-1.                                                                                                                                                 |
| 4-3. MECHANICAL TEST             |                                                                                                                                  |                                                                                                                                                              |
| Vibration                        | Amplitude=2mm, 20↔60Hz, sweep time 1 minute, 3 direction each 8h.                                                                | Same as 4-1.                                                                                                                                                 |
| Drop                             | On concrete plate from 1m high, 3 times.                                                                                         |                                                                                                                                                              |
| Lead Bend                        | 90° bending with 450g weight, 2 times.                                                                                           | Should not be broken.                                                                                                                                        |
| Lead Pull                        | After bending lead parallel to header base, pull with 1kg force for 1 minute.                                                    | Should not be lost or broken.                                                                                                                                |
| 4-4. SURGE TEST                  |                                                                                                                                  |                                                                                                                                                              |
| Surge Test                       | 10 times<br>between any leads<br><div></div> | Same as 4-1.                                                                                                                                                 |

5. REVISION

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

PRELIMINARY