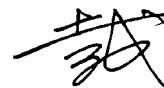


AUG. 16, 1995

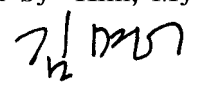
Approved by: JaeJo Kim



Checked by: SungIl Park



Issued by: Kim, MyeongKee



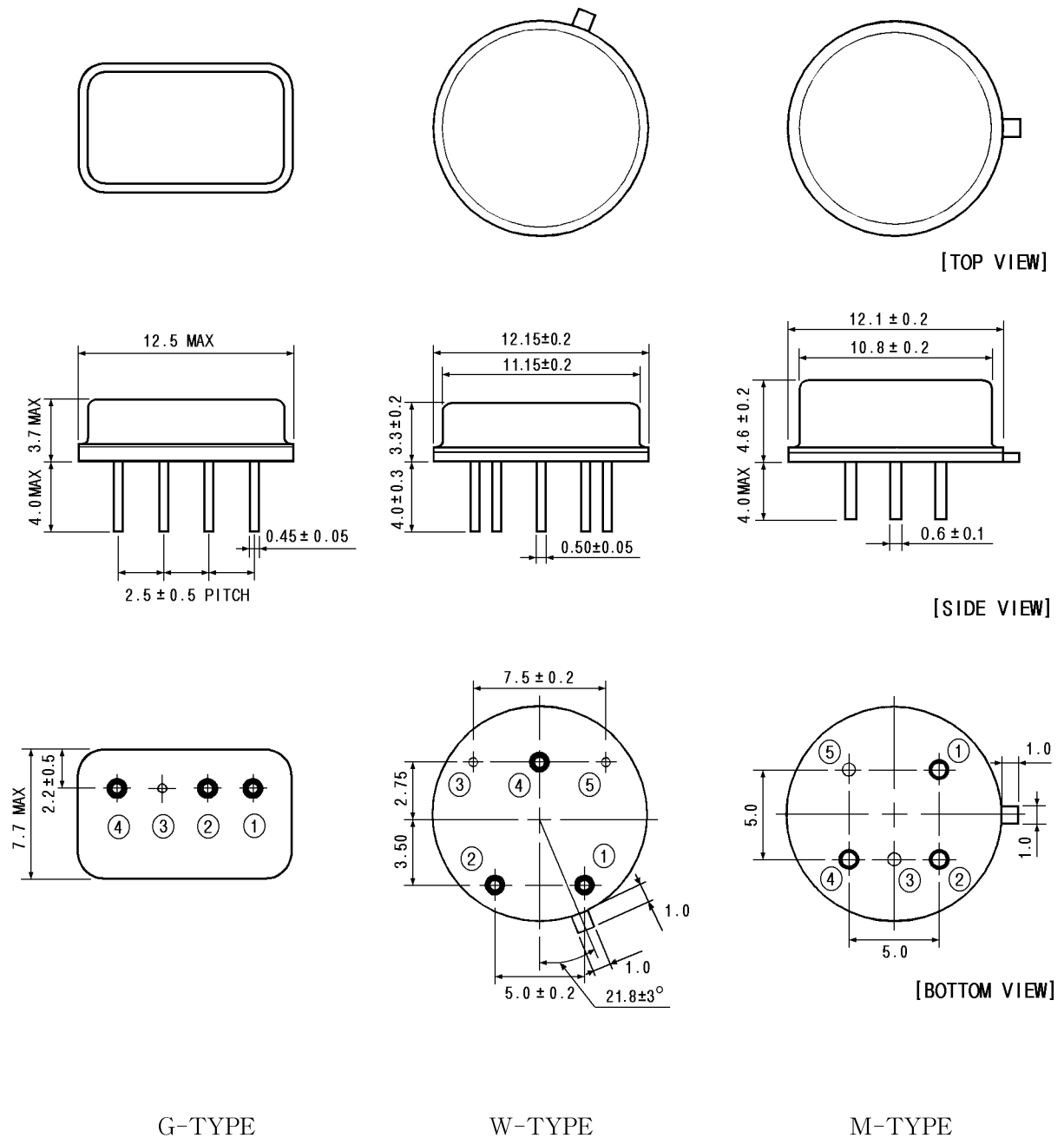
# SPECIFICATION

MODEL: 2389D□

## SURFACE ACOUSTIC WAVE FILTER

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

## 1. OUTLINE DRAWING AND DIMENSION



| PIN NO. | FUNCTION |
|---------|----------|
| ①       | OUTPUT   |
| ②       | OUTPUT   |
| ③       | GROUND   |
| ④       | INPUT    |
| ⑤       | GROUND   |

**2. MARKING**

|               |               |               |
|---------------|---------------|---------------|
| <b>SF 505</b> | <b>SF</b>     | <b>SF</b>     |
| <b>2389DG</b> | <b>2389DW</b> | <b>2389DM</b> |
|               | <b>505</b>    | <b>505</b>    |

Color : Black or Red

Model No. : 2389DG (G-type Package)

2389DW (W-type Package)

2389DM (M-type Package)

Lot No. : 505

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

PAL D/K, I System

Video Frequency : 38.9MHz

**3-2. MAXIMUM RATING**

(Ta = 20℃)

| 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 |                 | -20 ~ +70 | ℃                |
| Storage temperature range   |                 | -55 ~ +85 | ℃                |

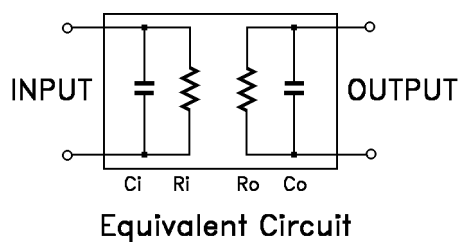
## 3-3. ELECTRICAL CHARACTERISTICS

3-3-1. TABLE

(Ta=20℃)

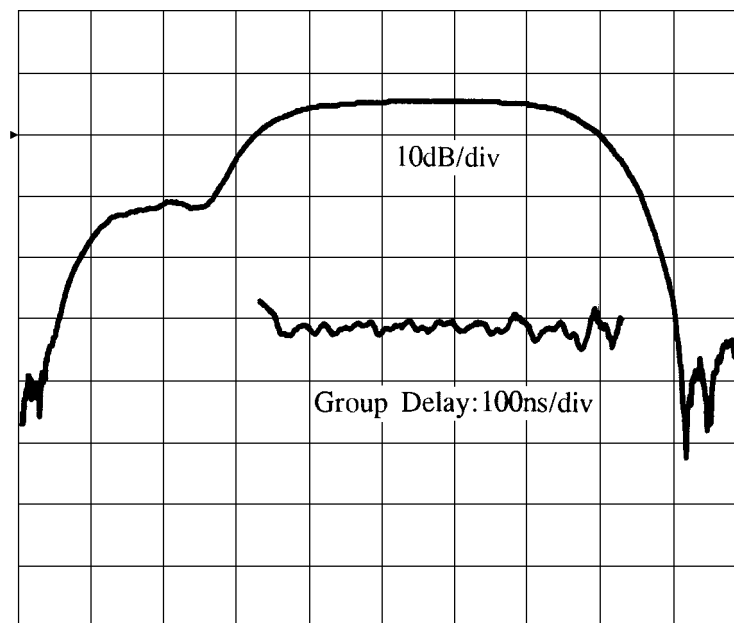
| CHARACTERISTICS                               |                                | Freq. (MHz)   | Specification |          |       |       | Test Fixture |
|-----------------------------------------------|--------------------------------|---------------|---------------|----------|-------|-------|--------------|
|                                               |                                |               | Upper         | Nominal  | Lower | Units |              |
| Insertion Loss                                |                                | peak          | 45            | 42       |       | dB    | No. 2        |
| Relative Amplitude (Ref.:fp)                  | adj.picture                    | 30.9 fp-8     | -30           | -40      |       | dB    | No. 1        |
|                                               | sound-1                        | 32.4 fp-6.5   | -9            | -12      | -15   |       |              |
|                                               | sound-2                        | 32.9 fp-6     | -9            | -11      | -15   |       |              |
|                                               | color                          | 34.47 fp-4.43 | 4.6           | 3.1      | 1.6   |       |              |
|                                               | peak                           |               | 7.6           | 6.1      | 4.6   |       |              |
|                                               | picture                        | 38.9 fp       |               | 0        |       |       |              |
|                                               | adj.sound                      | 40.4 fp+1.5   | -30           | -38      |       |       |              |
| Spurious Level (Ref.:peak)                    |                                | 22.9 ~ 30.9   | -25           | -35      |       |       |              |
|                                               |                                | 40.4 ~ 48.4   | -25           | -35      |       |       |              |
| Bandpass Ripple                               |                                | 34.47 ~ 38.9  | 0.6           | 0.2      |       |       |              |
| Group Delay Ripple(p-p)                       |                                | 34.47 ~ 38.9  | 100           |          |       | nsec  |              |
| Temperature Coefficient of Frequency Response |                                | -20 ~ 70 ℃    |               | -25      | -30   | ppm/℃ | No. 2        |
| Impedance                                     | R <sub>i</sub> /C <sub>i</sub> | 36.4          |               | 4.4/13.3 |       | kΩ/pF |              |
|                                               | R <sub>o</sub> /C <sub>o</sub> | 36.4          |               | 7.4/ 9.8 |       | kΩ/pF |              |

Impedance equivalent circuit is shown below.



## 3-3-2. GRAPH

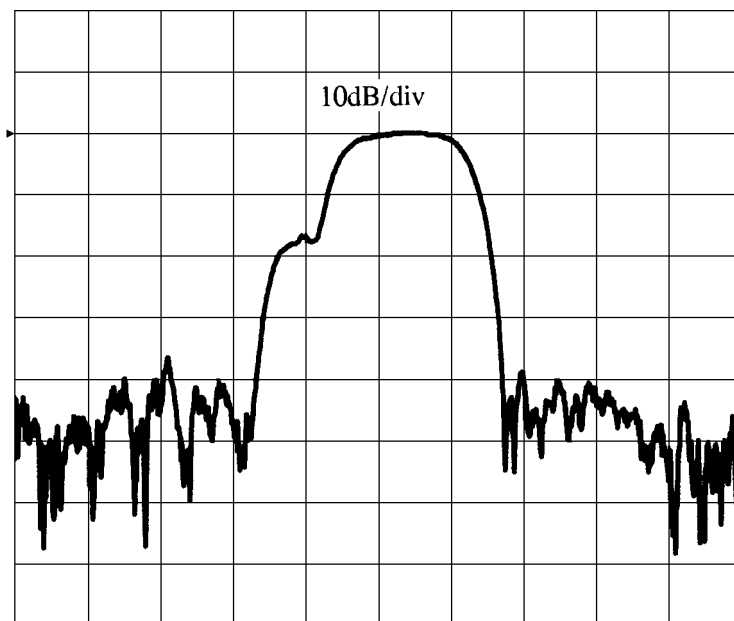
## Passband Characteristics



Start:fp-8MHz

Stop:fp+2MHz

## Spurious Characteristics

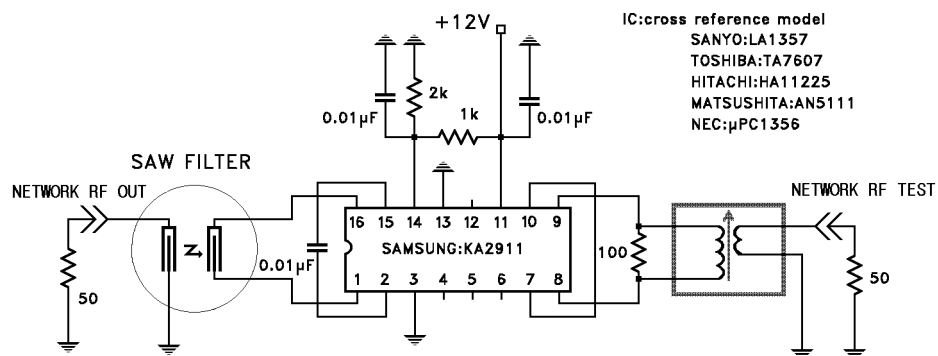


Start:23.9MHz

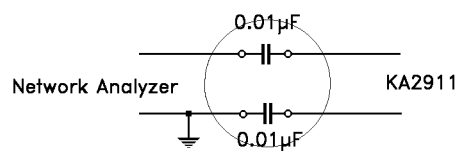
Stop:48.4MHz

## 3-3-3. TEST FIXTURE

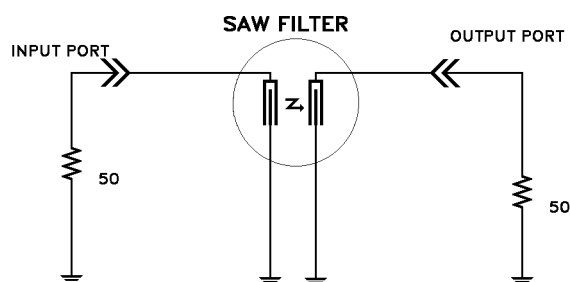
No. 1



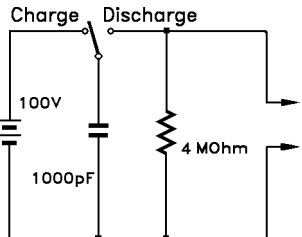
Measuring circuit for normalizing.



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>(fs,fc,peak)<br>initial ±1.0dB<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 between any leads<br><div><div>Charge</div><div>Discharge</div></div> | Same as 4-1.                                                                                                                         |

## 5. REVISION

| Date      | Page | Revision  | Reason      |
|-----------|------|-----------|-------------|
| JAN.12.96 | 3-3  | 308 → 505 | miss typing |