

INTRODUCTION

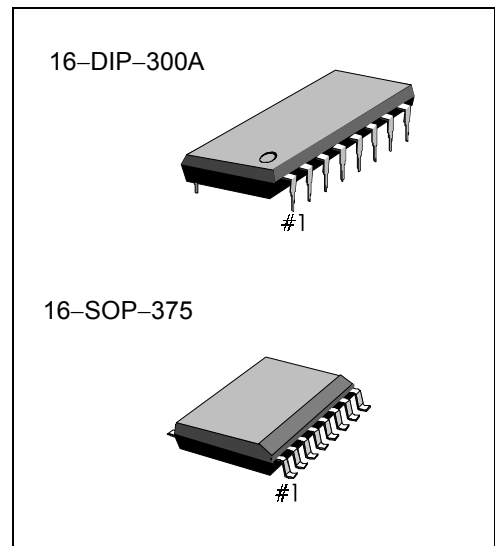
The KA2297/D is a monolithic integrated circuit which consists of an FM F/E + AM/FM IF and DET AMP.
 The KA2297/D is a no-adjustment AM/FM IF, DET coil.

FEATURES

- Does not need AM/FM IF, FM DET COIL
- Built-in FM Front End
- Minimum number of external parts required
- Operating voltage : $V_{CC} = 1.8V \sim 7V$

ORDERING INFORMATION

| Device | Package | Operating Temperature |
|---------|-------------|-----------------------|
| KA2297 | 16-DIP-300A | -20°C ~ + 75°C |
| KA2297D | 16-SOP-375 | |



BLOCK DIAGRAM

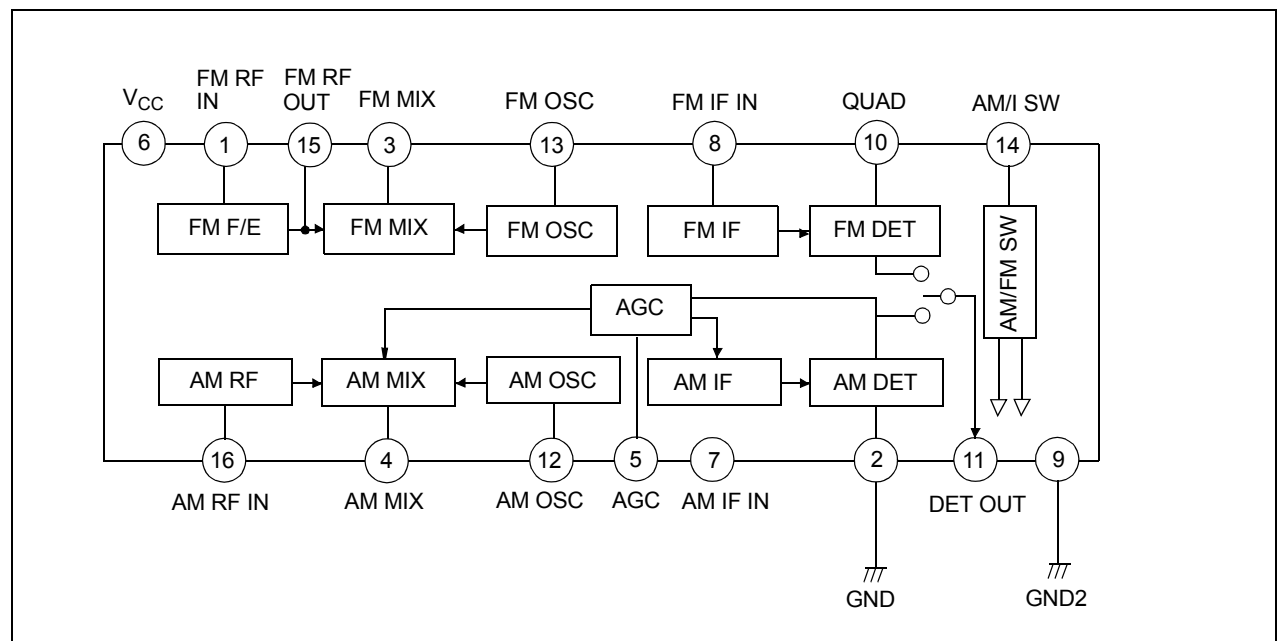


Figure 1.

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

| Characteristic | Symbol | Value | Unit |
|------------------------|-----------|------------|------|
| Maximum Supply Voltage | V_{CC} | 8 | V |
| Power Dissipation | P_D | 250 | mW |
| Operating Temperature | T_{OPR} | -20 ~ +75 | °C |
| Storage Temperature | T_{STG} | -55 ~ +125 | °C |

ELECTRICAL CHARACTERISTICS

(FM F/E: f = 98MHz, fm = 1KHz, FM IF: 10.7MHz, AM: f = 1MHz, fm = 1kHz, f = 30%, $V_{CC} = 3V$)

| Characteristic | | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------|---------------------------|---------------|--------------------|------|------|------|----------|
| Quiescent Circuit Current | | I_{CCQ1} | FM, $V_I = 0$ | 6.0 | 10.0 | 14.0 | mA |
| | | I_{CCQ2} | AM, $V_I = 0$ | 3.0 | 5.0 | 8.0 | mA |
| FM F/E | -3dB Limiting | $V_{(LIM)1}$ | $V_O = -3dB$ Point | - | 12 | 22 | dB μ |
| FM IF | -3dB Limiting Sensitivity | $V_{(LIM)2}$ | $V_O = -3dB$ Point | 42 | 47 | 52 | dB μ |
| | Detector Output Voltage | $V_{O(DET)1}$ | $V_I = 80dB\mu$ | 55 | 70 | 85 | mVrms |
| | Total Harmonic Distortion | THD1 | $V_I = 80dB\mu$ | - | 0.4 | 1 | % |
| | Signal to Noise Ratio | S/N1 | $V_I = 80dB\mu$ | 56 | 62 | - | dB |
| | AM Rejection Ratio | AMR | $V_I = 80dB\mu$ | 32 | 38 | - | dB |
| AM | Voltage Gain | G_{V1} | $V_I = 30dB\mu$ | 28 | 50 | 72 | mVrms |
| | Detector Output Voltage | $V_{O(DET)2}$ | $V_I = 60dB\mu$ | 40 | 60 | 82 | mVrms |
| | Total Harmonic Distortion | THD2 | $V_I = 60dB\mu$ | - | 1.0 | 2.0 | % |
| | Signal to Noise Ratio | S/N2 | $V_I = 60dB\mu$ | 37 | 43 | - | dB |

TEST CIRCUIT 1

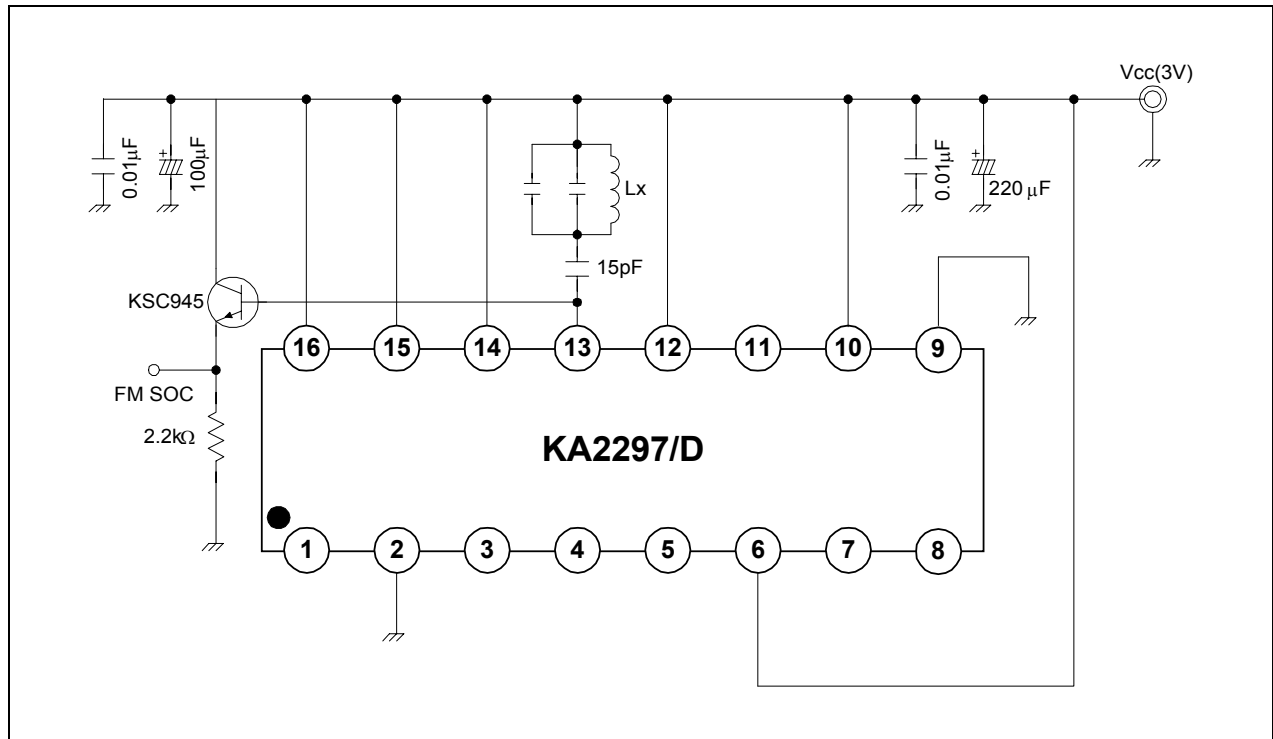


Figure 2.

TEST CIRCUIT 2

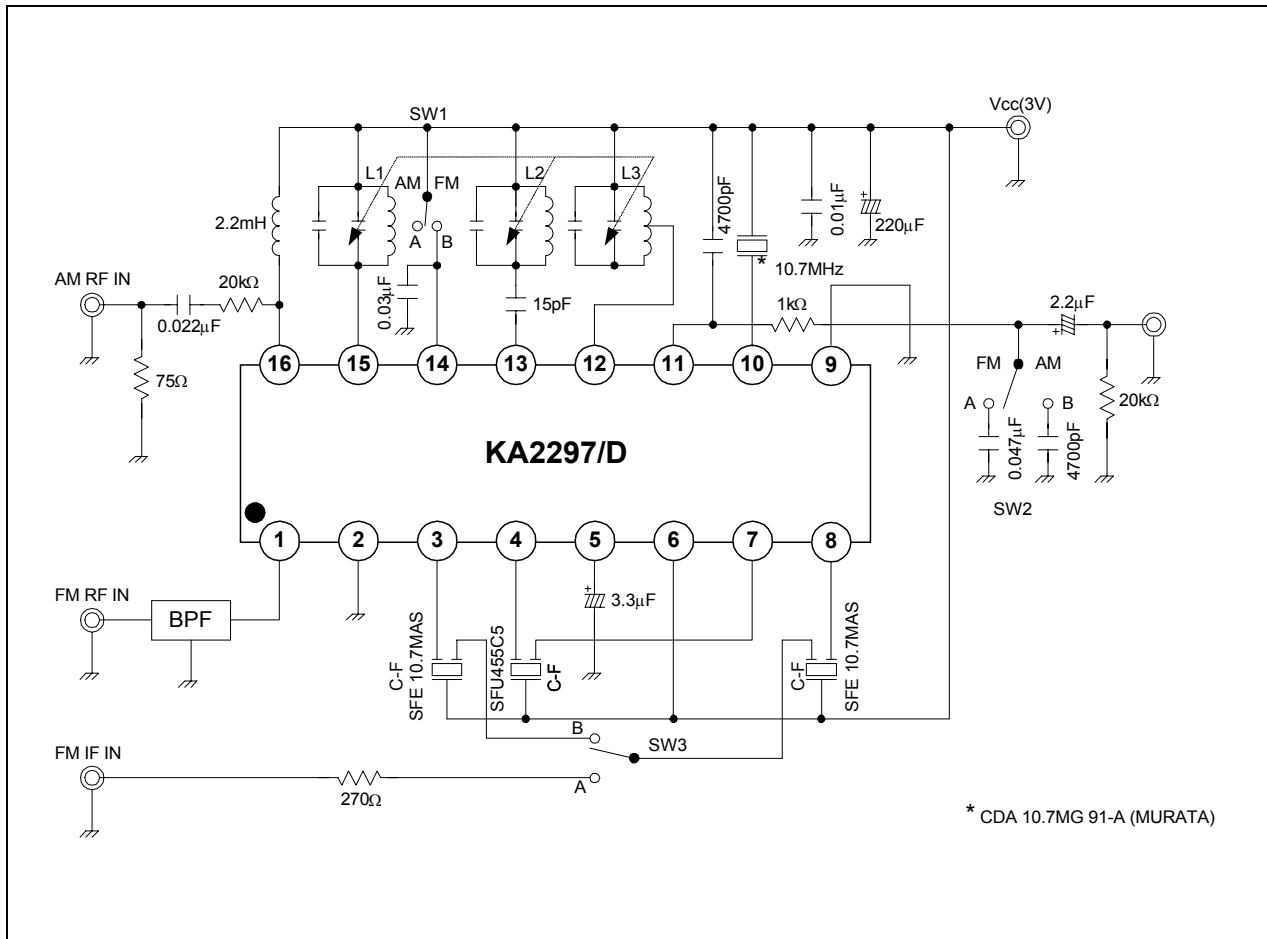
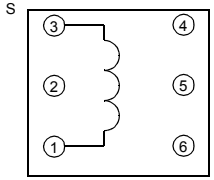
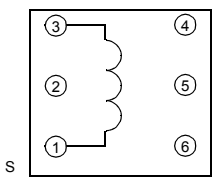
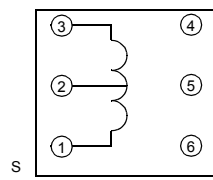
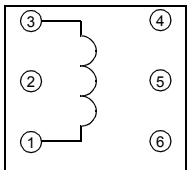
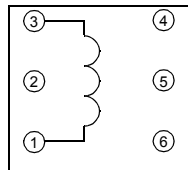
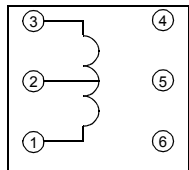


Figure 3.

COIL SPEC

| Seal Name | L1 | | L2 | | L3 | |
|---|---|-------|--|-------|---|-----|
| TURNS | 3-1 | 2 2/8 | 1-3 | 2 6/8 | 1-2 | 12T |
| - | - | - | - | - | 2-3 | 73T |
| WIRE (mm) | 0.5 | UEW | 0.5 | UEW | 0.08 | UEW |
| CONNECTION (BOTTOM VIEW) (KOREA TOKO) |  | |  | |  | |
| FREQUENCY | 100MHz | | 100MHz | | 792kHz | |
| TUNING CAPACITY | - | | - | | - | |
| INDUCTANCE | - | | - | | 268uH ± 8%min | |
| UNLOADED Q | - | | - | | 70min | |

| Seal Name | L1 | | L2 | | L3 | |
|-----------------------------|---|-------|--|-------|---|-----|
| TURNS | 3-1 | 2 2/8 | 1-3 | 2 6/8 | 1-2 | 12T |
| - | - | - | - | - | 2-3 | 73T |
| WIRE (mm) | 0.5 | UEW | 0.5 | UEW | 0.05 | UEW |
| CONNECTION (BOTTOM VIEW) |  | |  | |  | |
| KWANG SUNG PART NO | KST-FO2 | | FST-FR2 | | FSI-AO2 | |
| FREQUENCY | 100MHz | | 100MHz | | 796kHz | |
| TUNING CAPACITY | - | | - | | - | |
| INDUCTANCE | - | | - | | 268 uH ± 8% min | |
| UNLOADED Q | - | | - | | 70 min | |

APPLICATION CIRCUIT

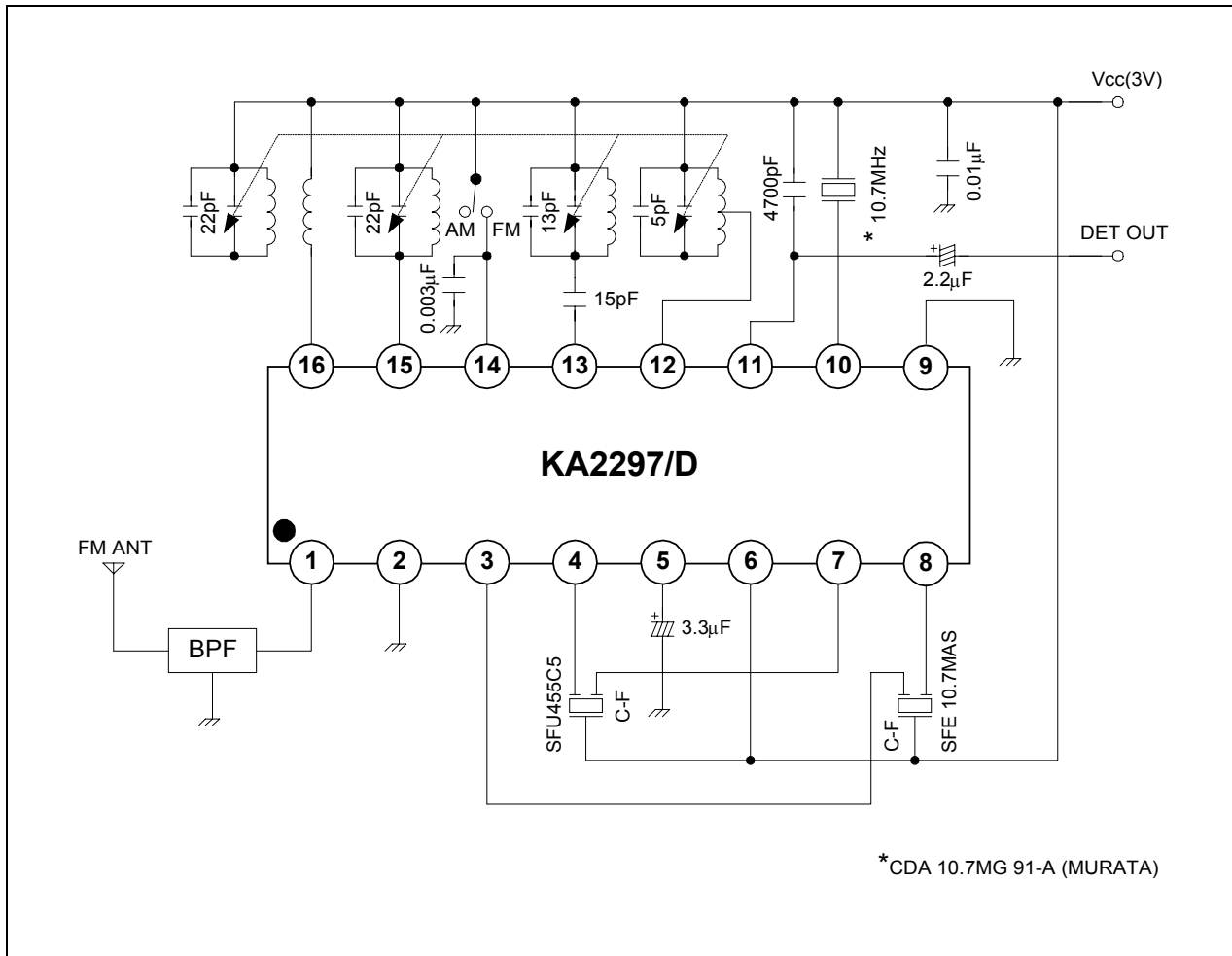


Figure 4.