

# DATA SHEET

|                  |                    |
|------------------|--------------------|
| Part No.         | AN17020A           |
| Package Code No. | *QFN016 - P - 0304 |

SEMICONDUCTOR COMPANY  
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

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# AN17020A

## Silicon Monolithic Bipolar IC

### ■ Features

- Headphone amplifier IC HP / Line Control Function, Mute Function

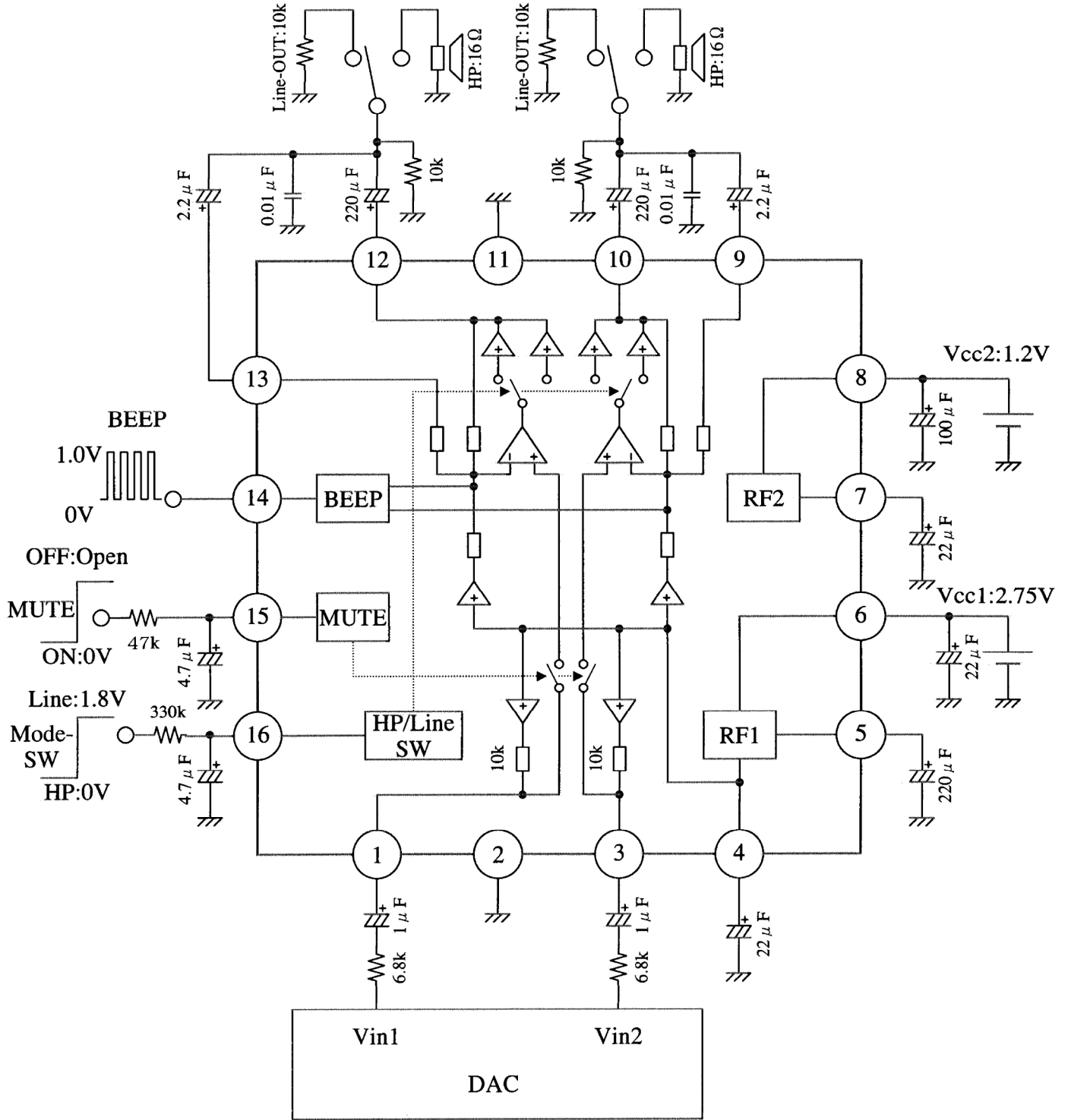
### ■ Application

- Low Frequency Amplifier

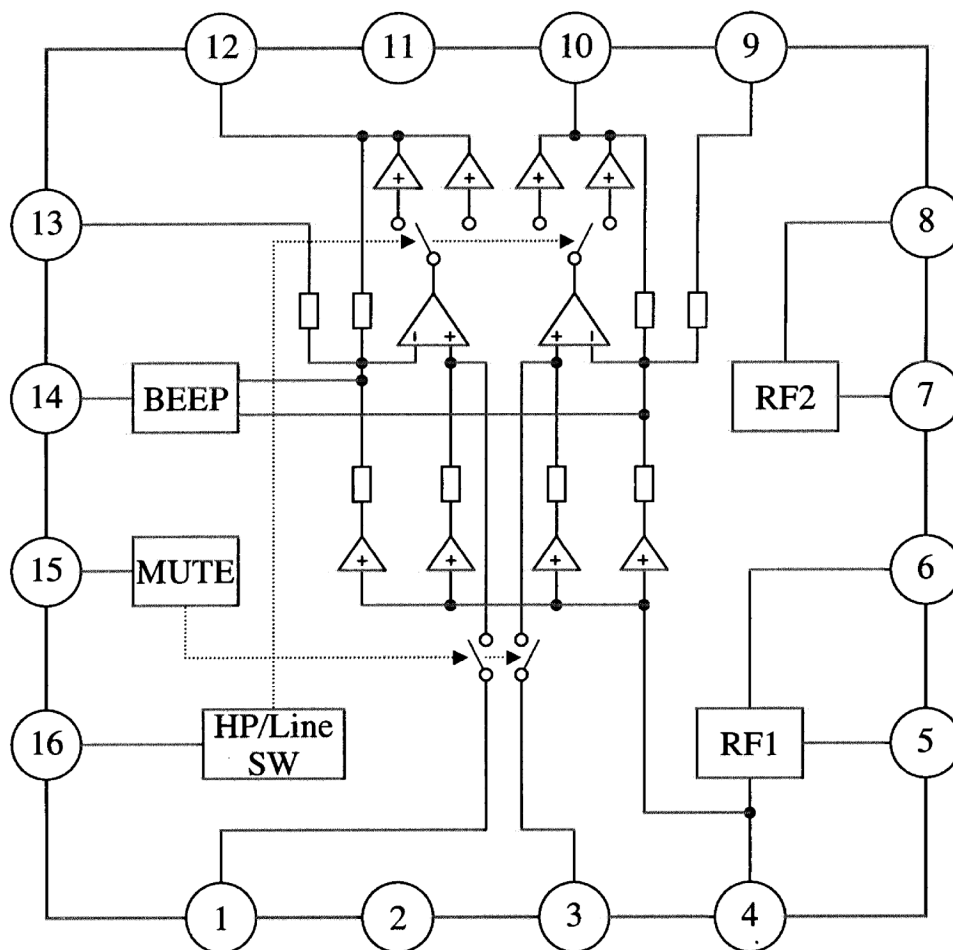
### ■ Package

- Quadrangle - 16Pin Plastic Package ( QFN type )

■ Application Circuit



■ Block Diagram



■ Pin Descriptions

| Pin No. | Function                                | Pin No. | Function          |
|---------|---|---------|-------------------|
| 1       | Ch.1 input                              | 9       | Ch.2 sense output |
| 2       | GND ( Input )                           | 10      | Ch.2 power output |
| 3       | Ch.2 input                              | 11      | GND ( Output )    |
| 4       | Half V <sub>CC1</sub> reference voltage | 12      | Ch.1 power output |
| 5       | Ripple filter                           | 13      | Ch.1 sense output |
| 6       | V <sub>CC1</sub>                        | 14      | BEEP output       |
| 7       | Half V <sub>CC2</sub> reference voltage | 15      | Muting output     |
| 8       | V <sub>CC2</sub>                        | 16      | HP / Line control |

### ■ Absolute Maximum Ratings

| No. | Parameter                              | Symbol           | Rating                                   | Unit             | Note |
|-----|--|------------------|--|------------------|------|
| 1   | Storage temperature                    | $T_{\text{stg}}$ | -55 to +150                              | °C               | *1   |
| 2   | Operating ambient temp                 | $T_{\text{opr}}$ | -25 to +75                               | °C               |      |
| 3   | Operating ambient atmospheric pressure | $P_{\text{opr}}$ | $1.013 \times 10^5 \pm 0.61 \times 10^5$ | Pa               |      |
| 4   | Operating constant gravity             | $G_{\text{opr}}$ | 9 810                                    | m/s <sup>2</sup> |      |
| 5   | Operating shock                        | $S_{\text{opr}}$ | 4 900                                    | m/s <sup>2</sup> |      |
| 6   | Supply voltage 1                       | $V_{\text{CC1}}$ | 4.6                                      | V                |      |
| 7   | Supply current 1                       | $I_{\text{CC1}}$ | 100                                      | mA               |      |
| 8   | Supply voltage 2                       | $V_{\text{CC2}}$ | 4.6                                      | V                |      |
| 9   | Supply current 2                       | $I_{\text{CC2}}$ | 200                                      | mA               |      |
| 10  | Power dissipation                      | $P_{\text{D}}$   | 292                                      | mW               | *2   |

Note ) \*1 :  $T_a = 25^\circ\text{C}$  except storage temperature and operating ambient temperature.

\*2 : At  $T_a = 75^\circ\text{C}$  on PCB of the standard, 50 mm × 50 mm × 0.8 tmm glass-epoxy.

### ■ Operating Supply Voltage Range

|                                |                  |            |
|--------------------------------|------------------|------------|
| Operating Supply Voltage Range | $V_{\text{CC1}}$ | 2.0 to 4.5 |
|                                | $V_{\text{CC2}}$ | 0.9 to 4.5 |

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