

- FM receiver back-end of the CA404/CA407 FM receiver chip set.
- Can drive both centertapped (eg: speaker) and non-centertapped loads
- Low voltage (1.1 volt) operation for single battery cell applications
- Low power consumption
- Fast response when gated. Data outputs valid within 2 ms of gating on
- Separate enables for speech path and audio power amplifier, for flexibility. Can select speech or tone output

The CA407 is a modified version of the CA406, with the primary difference between the two lying in the audio output stage. Whereas the audio output stage of the CA406 is configured to drive a centertapped load, such as a speaker, the audio output stage of the CA407 is configured to drive either centertapped or non-centertapped loads.

Except where noted in this datasheet, the information in the CA404/CA406 datasheet also applies to the CA407.

Two output configurations of the CA407 are shown in Figure 2. In Figure 2a, the audio output stage drives a 16Ω centertapped load (speaker) with a 0-peak swing at either output of 0.8 Volts minimum (battery voltage is 1.3 Volts). Distortion at that signal level is typically 3%. The circuit in Figure 2b, with two external PNP transistors, gives a 0-peak swing at either output of $V_{BATT} - (2 * V_{CE(sat)})$ without the use of transformers or a centertapped load. Using 2N4403 or equivalent for the PNPs into an 8Ω load, the output circuit in Figure 2b will give about the same swing and distortion as the numbers given above for the circuit in Figure 2a. The two 0.1 μF capacitors provide frequency compensation.

The CA407 ALERT IN interface schematic (Figure 4) has also changed somewhat from the CA406.

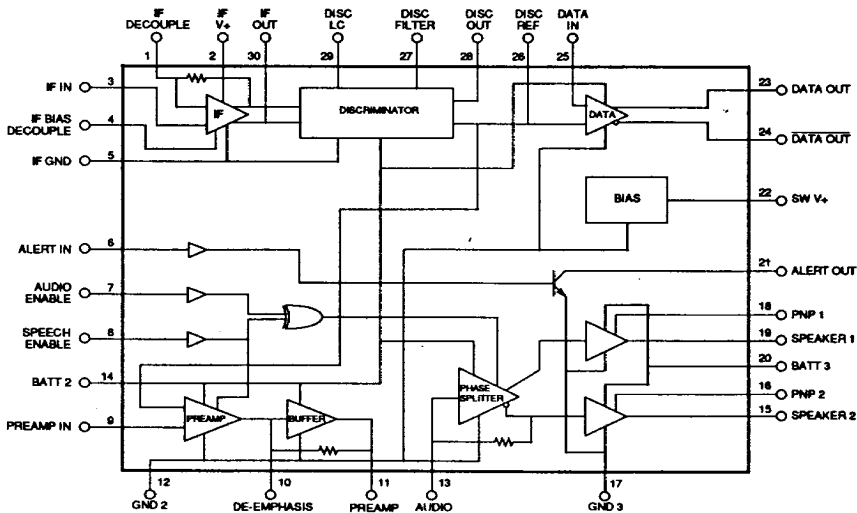
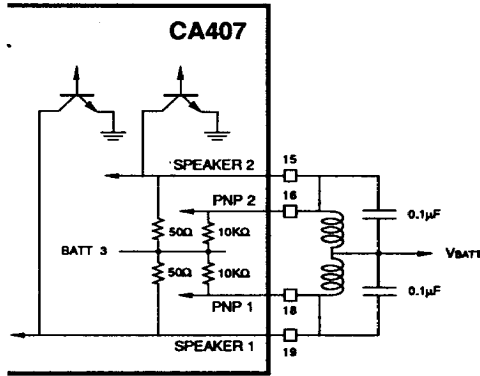
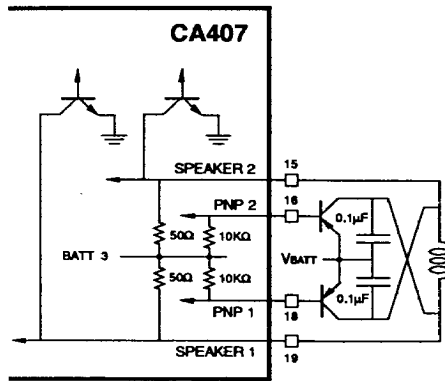


Figure 1 : CA407 BLOCK DIAGRAM



a) Audio Output: Centertapped Load (16Ω Speaker)



b) Audio Output: Non-centertapped Load (Note external PNPs)

Figure 2 : CA407 OUTPUT CONFIGURATIONS

1	IF DECOUPLE	15	GND 3
2	IF V+	16	PNP 1
3	IF IN	17	SPEAKER 1
4	IF GND	18	BATT 3
5	ALERT IN	19	ALERT OUT
6	AUDIO ENABLE	20	SW V+
7	SPEECH ENABLE	21	DATA OUT
8	PREAMP IN	22	DATA OUT
9	DE-EMPHASIS	23	DATA IN
10	PREAMP OUT	24	DISCRIMINATOR REF
11	AUDIO IN	25	DISCRIMINATOR FILTER
12	BATT 2	26	DISCRIMINATOR OUT
13	SPEAKER 2	27	DISCRIMINATOR LC
14	PNP 2	28	IF OUT

1	IF DECOUPLE	16	PNP 2
2	IF V+	17	GND 3
3	IF IN	18	PNP 1
4	IF BIAS DECOUPLE	19	SPEAKER 1
5	IF GND	20	BATT 3
6	ALERT IN	21	ALERT OUT
7	AUDIO ENABLE	22	SW V+
8	SPEECH ENABLE	23	DATA OUT
9	PREAMP IN	24	DATA OUT
10	DE-EMPHASIS	25	DATA IN
11	PREAMP OUT	26	DISCRIMINATOR REF
12	GND 2	27	DISCRIMINATOR FILTER
13	AUDIO IN	28	DISCRIMINATOR OUT
14	BATT 2	29	DISCRIMINATOR LC
15	SPEAKER 2	30	IF OUT

a) CA407 L-28

b) CA407 30-LEAD VINSON QUILL

The quill package is available for samples only.

Figure 3 : CA407 PIN CONFIGURATIONS for DIFFERENT PACKAGES

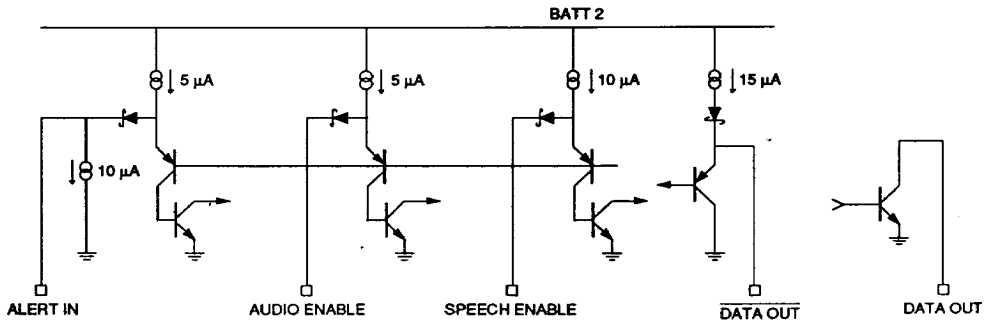


Figure 4 : CA407 INTERFACE SCHEMATICS