

# A.F. AMPLIFIER

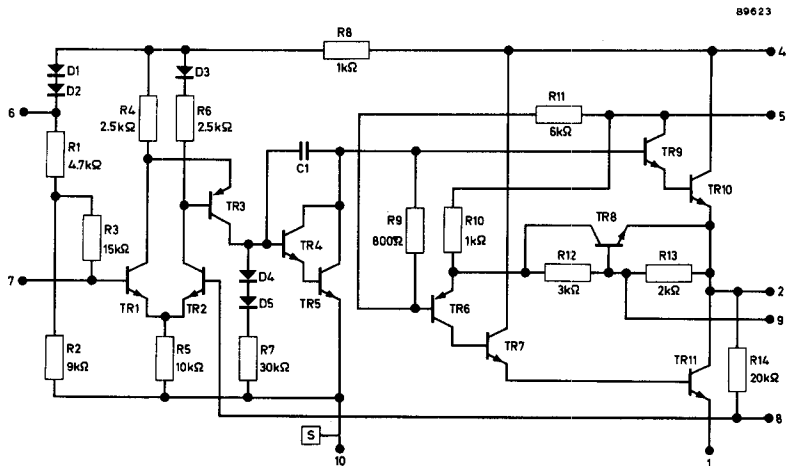
# TAA300

The TAA300 is a monolithic integrated circuit for use as a complete A.F. amplifier. With a supply voltage of 9V, outputs of up to 1W are obtainable into a load impedance of 8Ω. A voltage range of 4.5 to 9V coupled with very low crossover distortion and low current drain makes this circuit ideal for battery operation.

## QUICK REFERENCE DATA

|  |     |    |
|--|-----|----|
| Supply voltage (nom.)                    | 9.0 | V  |
| Output power (typ.)                      | 1.0 | W  |
| Input signal for $P_{out} = 1.0W$ (typ.) | 8.5 | mV |
| Input impedance (typ.)                   | 15  | kΩ |
| Load impedance                           | 8.0 | Ω  |
| Total current drain (quiescent) (typ.)   | 8.0 | mA |

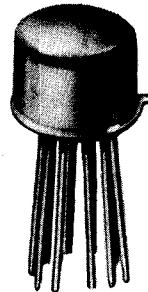
## EQUIVALENT CIRCUIT



## OUTLINE

Conforms to J. E. D. E. C. TO-74

For details see page 5



## RATINGS

Limiting values of operation according to the absolute maximum system.

### Electrical

#### Voltages

|     |    |     |   |      |
|-----|----|-----|---|------|
| Pin | to | Pin |   |      |
| 2   |    | 1   | } | 10.5 |
| 4   |    | 1   |   |      |
| 4   |    | 2   |   |      |
| 2   |    | 9   | } | 6.0  |
| 7   |    | 8   |   |      |
| 8   |    | 7   |   |      |

#### Currents

|     |  |       |    |
|-----|--|-------|----|
| Pin |  |       |    |
| 1   |  | - 600 | mA |
| 2   |  | ± 600 | mA |
| 4   |  | + 600 | mA |

#### Power

|                        |  |     |    |
|------------------------|--|-----|----|
| $P_{tot}$ (see page 6) |  | 800 | mW |
|------------------------|--|-----|----|

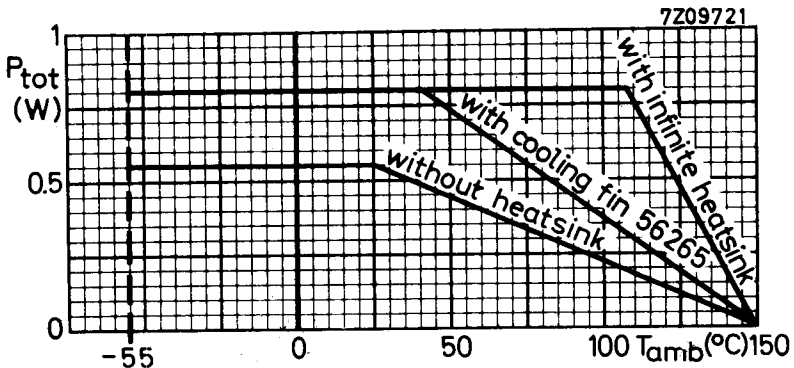
### Temperature

|                            |  |      |    |
|----------------------------|--|------|----|
| $T_{stg}$ min.             |  | - 55 | °C |
| $T_{stg}$ max.             |  | 150  | °C |
| $T_{amb}$ min. (operating) |  | - 55 | °C |
| $T_{amb}$ max. (operating) |  | 150  | °C |

### ACCESSORIES

Cooling fin type - 56265 (see page 5)

Use mounted on blackened 16s.w.g. aluminium plate 20cm<sup>2</sup>.



ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$  unless otherwise stated).

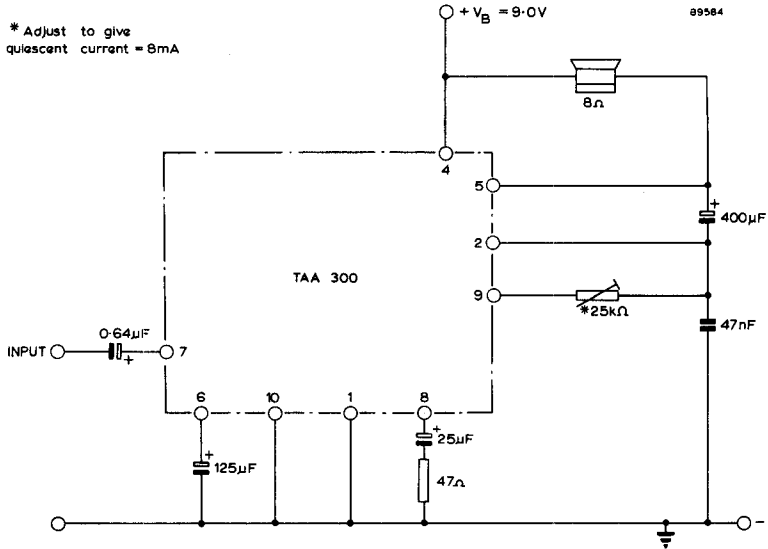
Measured in test circuit Fig. 2

Supply voltage = 9.0V

|           |   | Min. | Typ. | Max. |            |
|-----------|---|------|------|------|------------|
| $P_{out}$ | Output power<br>$d_{tot} = 10\%$  | -    | 1.0  | -    | W          |
| B         | Bandwidth (-3dB)  | -    | 25   | -    | kHz        |
|           | Total current drain (no signal<br>and excluding output transistors)   | -    | 4.0  | -    | mA         |
|           | Total d.c. drain at $P_{out} = 1.0\text{W}$   | -    | 180  | -    | mA         |
| $d_{tot}$ | Total distortion<br>$P_{out} = 0.5\text{W}$   | -    | 0.7  | 3    | %          |
| $V_{in}$  | Input signal<br>$P_{out} = 1.0\text{W}$<br>$= 0.5\text{W}$  | -    | 8.5  | -    | mV         |
|           |   | -    | -    | 8.5  | mV         |
| $Z_{in}$  | Input impedance   | 10   | 15   | -    | k $\Omega$ |
| $\eta$    | Efficiency  | -    | 60   | -    | %          |
| S/N       | Signal-to-noise ratio<br>related to $P_{out} = 1.0\text{W}$<br>$R_{source} = 2.0\text{k}\Omega$ , B = 30Hz to 15kHz | 70   | 75   | -    | dB         |
| $P_N$     | Noise output power<br>input short-circuited,<br>B = 30Hz to 15Hz  | -    | 10   | 20   | nW         |
|           | Preset resistor for $I_{tot} = 8.0\text{mA}$<br>(see test circuit page 4)   | 4.0  | -    | 25   | k $\Omega$ |



## TEST CIRCUIT



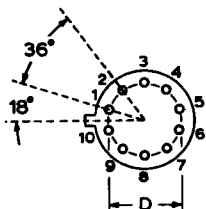
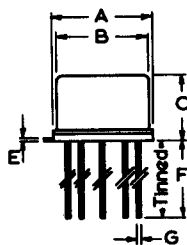
To present high-frequency instability, the following precautions must be taken.

- Keep the lead inductance from the positive voltage supply to pin 4 to a minimum.
- Because of the high internal resistance of batteries (especially at end of life) a large capacitance should be connected between pin 4 and ground.
- A capacitor of at least 47nF should be connected between pin 2 and ground to prevent instability of the lower Darlington output transistor (see also test circuit).
- Avoid coupling between output and input leads (especially those carrying signals from a high-impedance source). This coupling can be reduced by using short leads, shielded input cable or by limiting the upper frequency to 15kHz by means of a capacitor of 560pF between pin 7 and ground.

## OUTLINE AND DIMENSIONS

Conforms to B.S. 3934 SO-44B/SB10-1

J.E.D.E.C. TO-74



Millimetres

|   | Min. | Nom. | Max. |
|---|------|------|------|
| A | 8.64 | 8.90 | 9.40 |
| B | 7.75 | 8.15 | 8.50 |
| C | -    | -    | 5.33 |
| D | -    | 5.08 | -    |
| E | -    | 0.40 | -    |
| F | 12.7 | -    | 21   |
| G | -    | 0.43 | -    |

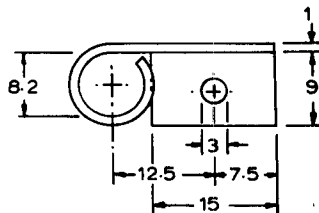
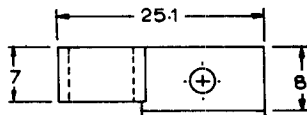
Pin No. 10 connected to envelope

10 pins on 360° spaced equally

ACCESSORY - Part No. 56265

**B7485**

Material  
blackened aluminium



Dimensions in mm.



