

TV Vertical Deflection Output Amplifier

Technology: Bipolar

Features

- Output peak current, $I_5 = 2.5 \text{ A}$
- Flyback current, peak to peak, $I_3 = 4 \text{ A}$
- Thermal protection, $T_j \geq 140^\circ\text{C}$

Case: 7 leads special plastic case

Block diagram

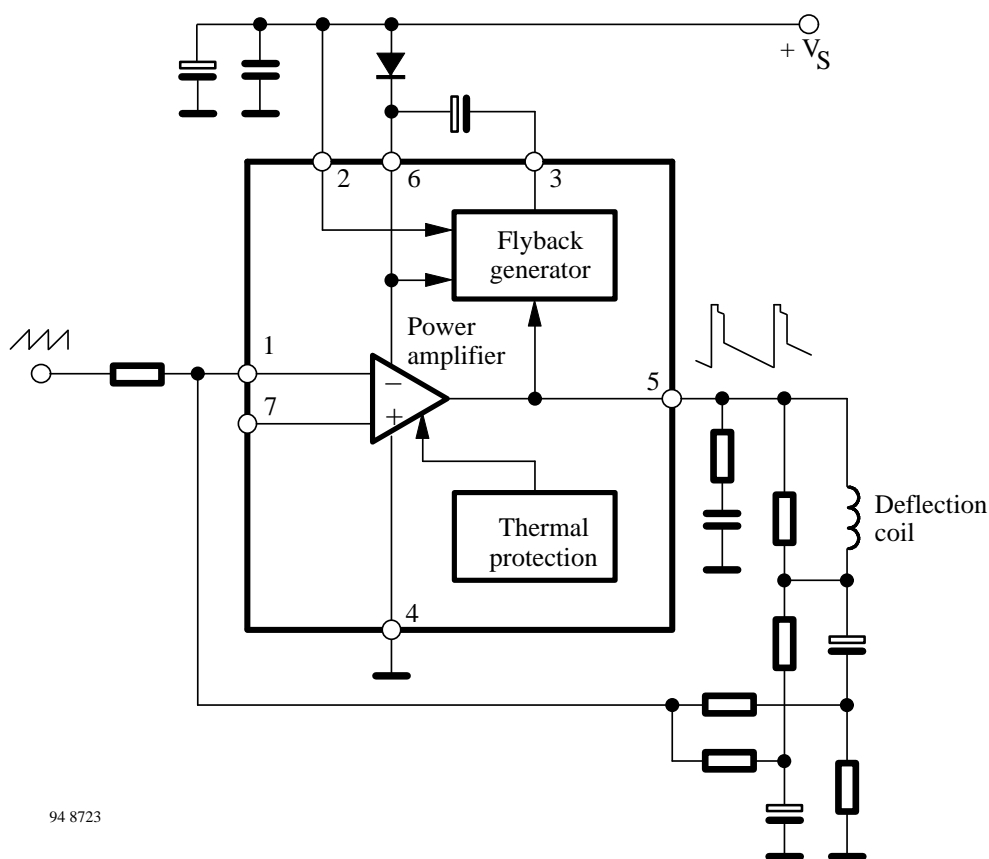


Figure 1 Block diagram

Pin Configuration

| Pin | Function |
|-----|-------------------|
| 1 | Inverted input |
| 2 | Supply voltage |
| 3 | Flyback generator |
| 4 | Ground |

| Pin | Function |
|-----|---------------------|
| 5 | Output |
| 6 | Output stage supply |
| 7 | Non inverted input |

Absolute Maximum Ratings

| Parameters | Symbol | Value | Unit |
|---|-----------|-----------------|------------------|
| Supply voltage Pin 2 | V_S | 40 | V |
| Flyback peak voltage Pins 5 and 6 | $V_{5,6}$ | 70 | V |
| Voltage at pin 3 | V_3 | V_S | V |
| Input voltage Pins 1 and 7 | $V_{1,7}$ | V_S | V |
| Output peak current: t = 2 ms, non repetitive f = 50/60 Hz, t < 10 μ s f = 50/60 Hz, t > 10 μ s Pin 5 | I_O | 3 3.5 2.5 | A |
| DC current at pin 3, @ $V_5 < V_2$ | I_3 | 100 | mA |
| Flyback current peak to peak, f = 50/60 Hz, $t_{fly} \leq 1.5$ ms Pin 3 | I_3 | 4 | A |
| Power dissipation, $T_{case} = 70^\circ\text{C}$ | P_{tot} | 20 | W |
| Storage temperature | T_{stg} | - 40 to + 150 | $^\circ\text{C}$ |
| Junction temperature | T_j | - 40 to + 150 | $^\circ\text{C}$ |

Thermal Resistance

| Parameters | Symbol | Maximum | Unit |
|---------------|------------|---------|------|
| Junction case | R_{thJC} | 3 | K/W |

Electrical Characteristics

$V_S = 35$ V, $T_{amb} = 25^\circ\text{C}$, (see test circuits)

| Parameters | Test Conditions / Pin | Symbol | Min | Typ | Max | Unit |
|---|---|-----------|-----|----------|------------|------------------|
| Quiescent current | $I_3 = 0, I_S = 0$ Pin 2 | I_2 | | 15 | 20 | mA |
| | $I_3 = 0, I_S = 0$ Pin 6 figure 2 | I_6 | | 30 | 45 | |
| Input quiescent current | $V_1 = 1$ V Pin 1 figure 3 | $-I_1$ | | 0.5 | 1 | μA |
| Saturation voltage to GND (Pin 4) | $I_3 = 20$ mA Pin 3 figure 4 | V_{3-4} | | 0.5 | 1.1 | V |
| Output voltage | $V_S = 35$ V, $R_f = 39$ k Ω Pin 5 figure 5 | V_5 | | 18 | | V |
| Saturation voltage to GND (Pin 4) | $I_5 = 1.2$ A Pin 5 $I_5 = 2.0$ A figure 6 | V_{5-4} | | 0.35 | 0.7 | V |
| | | | | 0.6 | 1.1 | |
| Saturation voltage to supply (Pin 6) | $I_5 = -1.2$ A Pin 5 $I_5 = -2.0$ A figure 7 | V_{5-6} | | 1 1.2 | 1.5 1.8 | V |
| Junction temperature for thermal shut down | | T_j | | 140 | | $^\circ\text{C}$ |

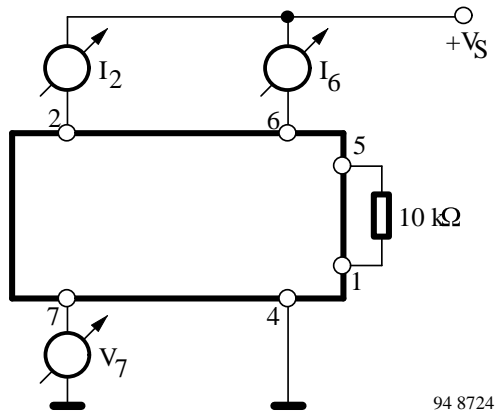


Figure 2

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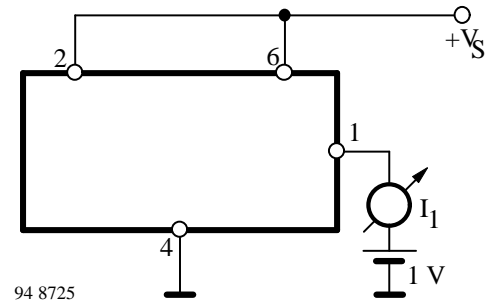


Figure 3

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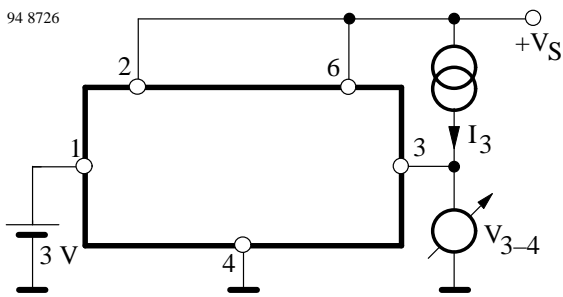


Figure 4

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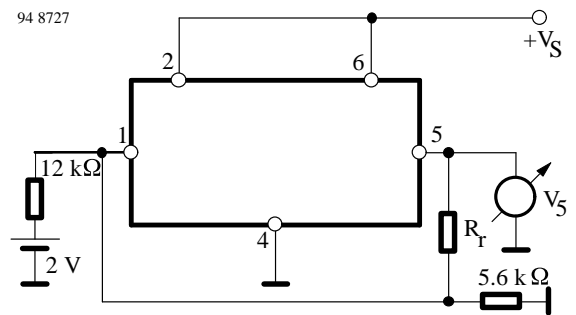


Figure 5

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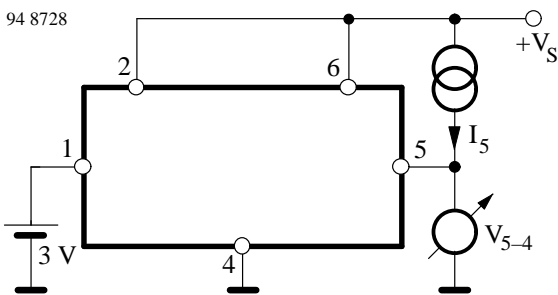


Figure 6

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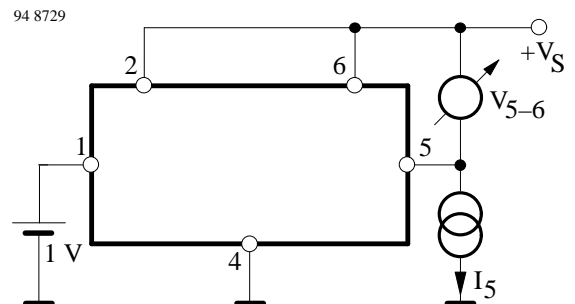
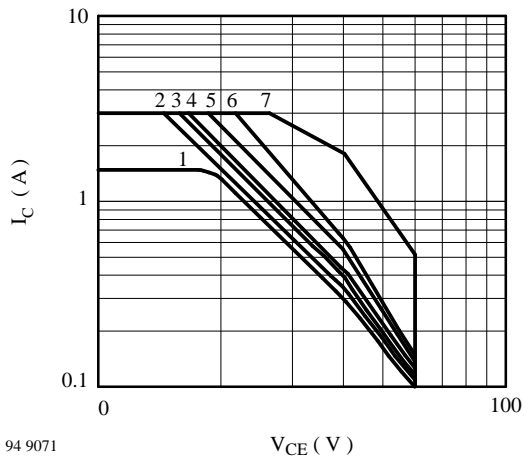


Figure 7

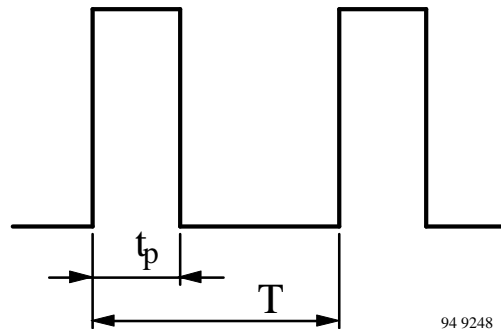
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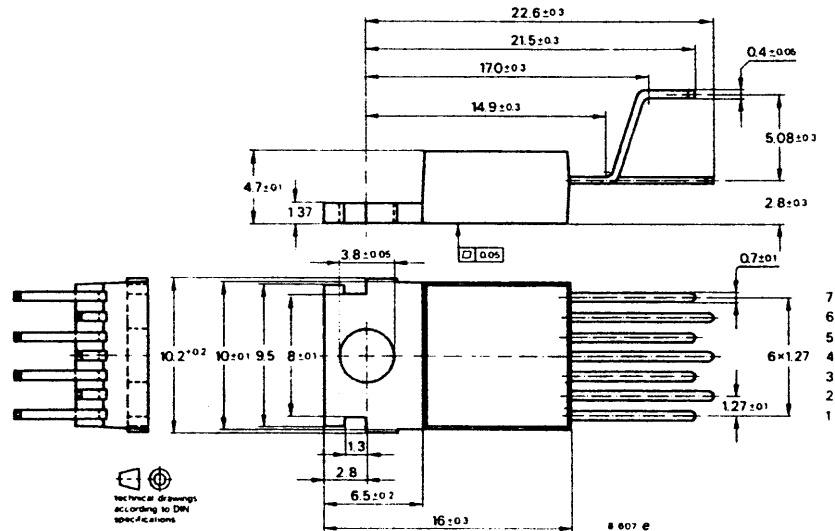
Typical SOAR curves
 $I_C = I_5, V_{CE} = V_5$ and
 $I_C = -I_5, V_{CE} = V_6 - V_5$

| Curve no. | t_p | $t_p : T$ |
|-----------|--------|-----------|
| 1 | DC | |
| 2 | 10 ms | 1 : 2 |
| 3 | 10 ms | 1 : 4 |
| 4 | 1 ms | 1 : 2 |
| 5 | 1 ms | 1 : 4 |
| 6 | 1 ms | 1 : 20 |
| 7 | 0.2 ms | 1 : 10 |



Dimensions in mm

Package: 7 leads special plastic case



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