



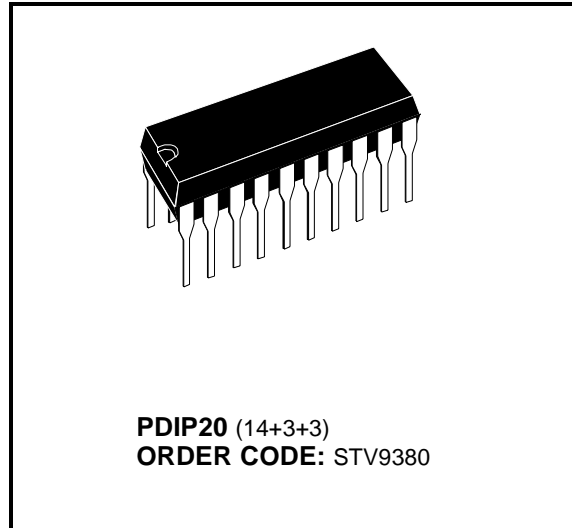
STV9380

CLASS-D VERTICAL DEFLECTION AMPLIFIER FOR TV AND MONITOR APPLICATION

TARGET SPECIFICATION

FEATURES

- High Efficiency Power Amplifier
- No Heatsink
- Split Supply
- Flyback Generator
- Output Current up to 2.5 APP
- Flyback Voltage up to 65V
- Suitable for DC Coupling Application

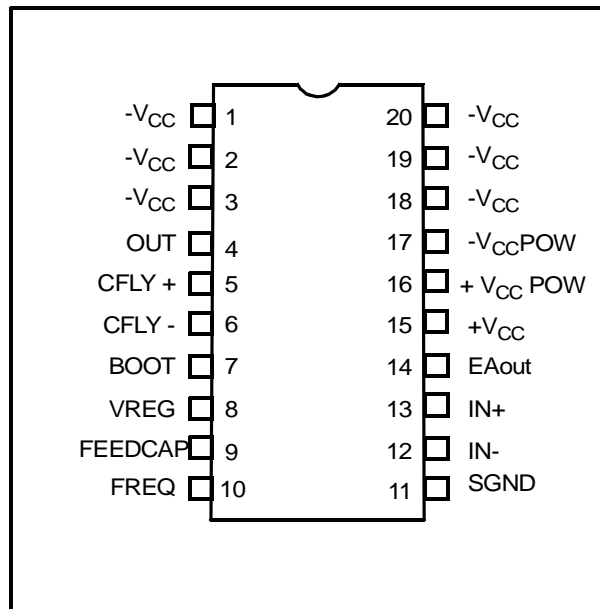


DESCRIPTION

Designed for monitors and TVs, the STV9380 is a class-D vertical deflection booster assembled in PDIP20 Package.

It operates with supplies up to +/- 16V, provides up to 2.5 App output current to drive the yoke. Fly-back voltage is close to 65V.

PIN CONNECTION



Version 1.1

1 - PIN FUNCTIONS

| Pin Number | Name | Function |
|------------|----------------------|-------------------------------------|
| 1 | -V _{CC} | Negative supply |
| 2 | -V _{CC} | Negative supply |
| 3 | -V _{CC} | Negative supply |
| 4 | OUT | PWM Output |
| 5 | CFLY+ | Flyback capacitor |
| 6 | CFLY- | Flyback capacitor |
| 7 | BOOT | Bootstrap capacitor |
| 8 | VREG | Internal voltage regulator |
| 9 | FEEDCAP | Feed-back integrated capacitor |
| 10 | FREQ | Frequency setting resistor |
| 11 | SGND | Signal Ground |
| 12 | IN- | Error amplifier inverting input |
| 13 | IN+ | Error amplifier non-inverting input |
| 14 | EA out | Error amplifier output |
| 15 | +V _{CC} | Positive supply |
| 16 | +V _{CC} POW | Positive Power supply |
| 17 | -V _{CC} POW | Negative Power supply |
| 18 | -V _{CC} | Negative supply |
| 19 | -V _{CC} | Negative supply |
| 20 | -V _{CC} | Negative supply |

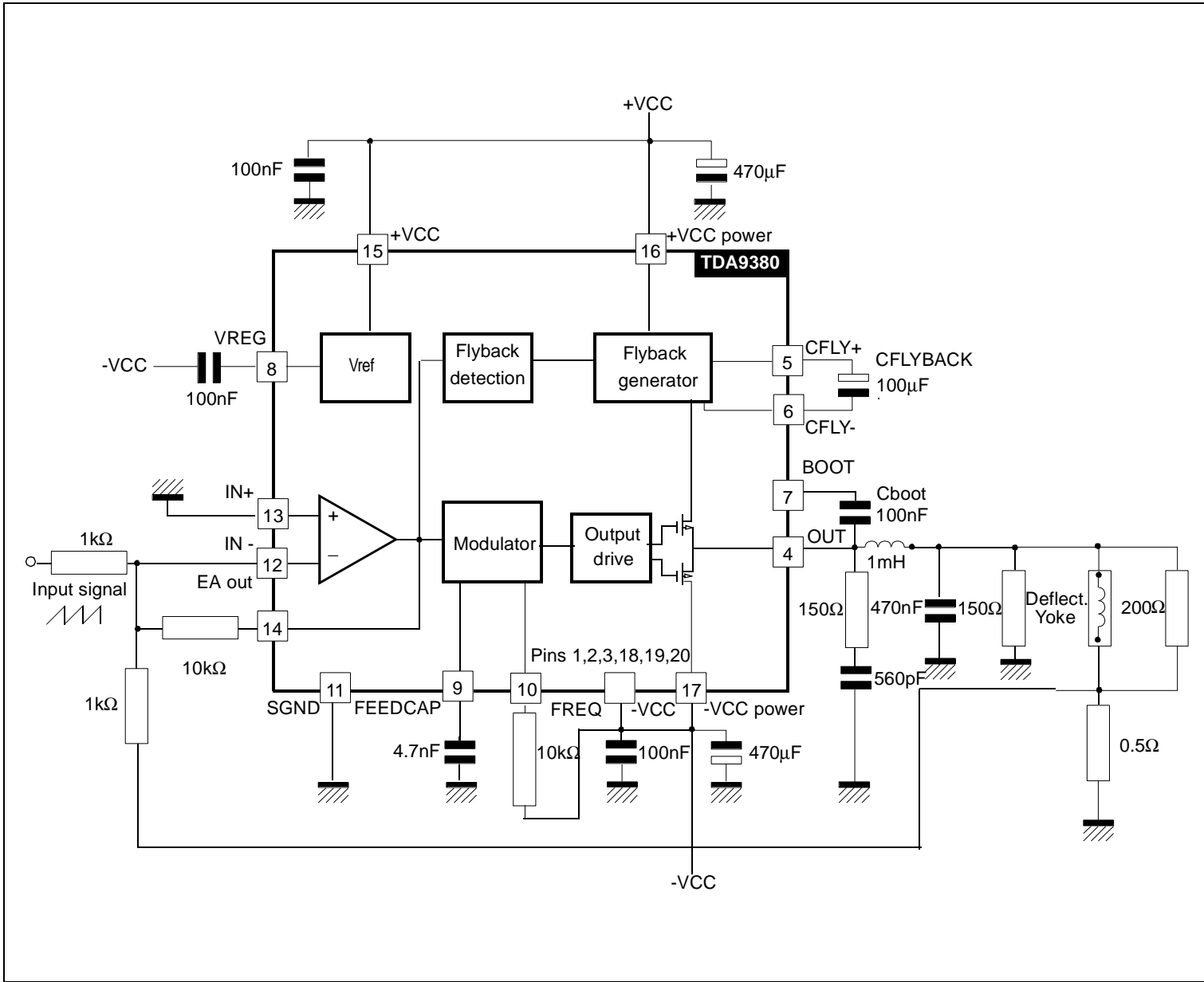
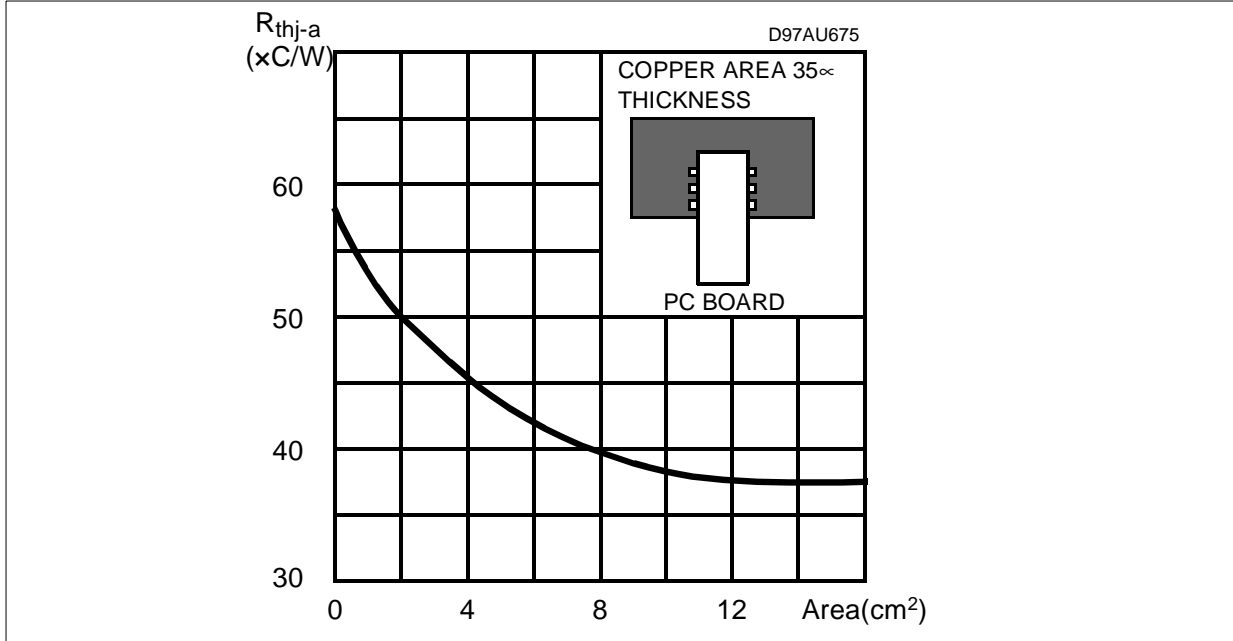


Figure 1. Test and Application Circuit

Figure 2. Rth with “on board” Square Heatsink vs. copper area



2 - ABSOLUTE MAXIMUM RATING

| Symbol | Parameter | Value | Unit |
|----------------|----------------------------------------------------------------------------------|-------------|-------------|
| VCC | DC Supply Voltage | ± 18 | V |
| T_{stg}, T_j | Storage and Junction Temperature | -40 to +150 | $^{\circ}C$ |
| T_{op} | Operating Temperature Range | 0 to +70 | $^{\circ}C$ |
| VESD | ESD Susceptibility - Human Body Model (100 pF discharge through 1.5 k Ω) | ± 2 | kV |
| Iout | Output current | ± 1.6 | A |

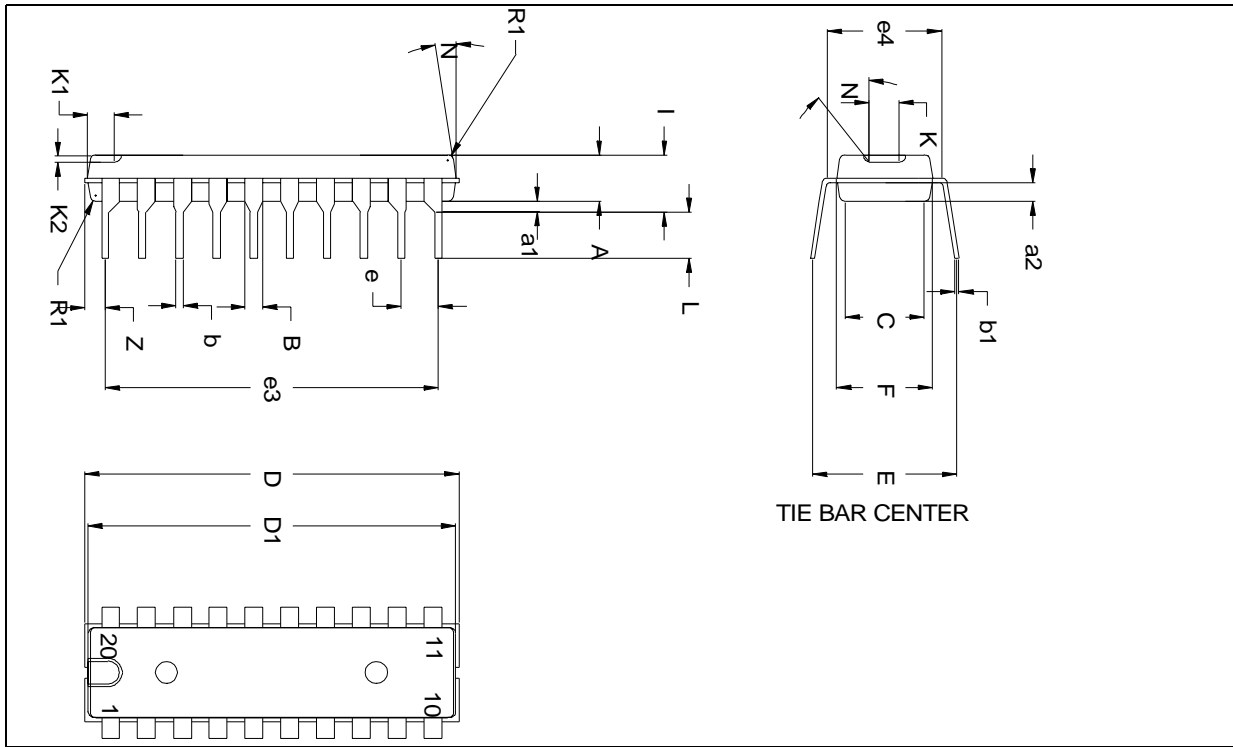
3 - THERMAL DATA

| Symbol | Parameter | Value | Unit |
|---------------|----------------------------------------|-------|---------------|
| $R_{thj-amb}$ | Thermal resistance Junction to ambient | 80 | $^{\circ}C/W$ |
| $R_{thj-pin}$ | Thermal Resistance Junction to Pin | 12 | $^{\circ}C/W$ |

4 - ELECTRICAL CHARACTERISTICS (refer to Figure 1 on page 3)T_{amb} = 25°C unless otherwise specified, V_{cc} = ±12V

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Units |
|-----------------------------------|-----------------------------------------------------------------|----------------------|------|------|-------|-------|
| V _{cc} | Supply range | | ±10 | | ±16 | V |
| I _{out} | Maximum recommended output current | | | | ±1.25 | A |
| I _q | Quiescent supply current | Input voltage = 0 | | TBD | TBD | mA |
| I ₁₃ , I ₁₂ | Amplifier Input bias current | | | -0.1 | | µA |
| V _{OS} | Output Offset voltage | Input voltage = 0 | -50 | | +50 | mV |
| SVR | Supply voltage rejection | TBD | | TBD | | dB |
| Fly _{thr} | Flyback detection threshold positive slope | V(14) | | 1.5 | | V |
| Fly _{thf} | Flyback detection threshold negative slope | V(14) | | 0.5 | | V |
| η | Efficiency = P _o /(P _o + P _d) | P _o = 3 W | | TBD | | |
| F _{sw} | Switching frequency | | 120 | 140 | 160 | kHz |
| F _{sw - op} | Switching frequency operative range | | 100 | | 200 | kHz |
| R _{freq} | Frequency controller resistor range | | 7 | 10 | 14 | kΩ |

5 - PACKAGE MECHANICAL DATA



| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|-------|-------|--------|-------|-------|
| | Typ. | Min. | Max. | Typ. | Min. | Max. |
| A | 3.30 | 3.18 | 3.43 | 0.130 | 0.125 | 0.135 |
| a1 | 0.762 | 0.508 | 1.016 | 0.030 | 0.020 | 0.040 |
| a2 | 1.30 | | | 0.051 | | |
| B | 1.27 | 0.85 | 1.40 | 0.050 | 0.033 | 0.055 |
| b | 0.508 | 0.45 | 0.53 | 0.020 | 0.018 | 0.021 |
| b1 | 0.43 | 0.38 | 0.48 | 0.017 | 0.015 | 0.019 |
| C | | 5.20 | 6.00 | | 0.205 | 0.236 |
| D | 24.65 | 24.55 | 24.77 | 0.970 | 0.966 | 0.975 |
| D1 | 24.38 | 24.33 | 24.45 | 0.959 | 0.958 | 0.962 |
| E | 8.80 | 8.40 | 9.10 | 0.346 | 0.331 | 0.358 |
| e | 2.54 | 2.29 | 2.79 | 0.100 | 0.090 | 0.110 |
| e3 | 22.86 | 22.60 | 23.11 | 0.900 | 0.890 | 0.910 |
| e4 | 7.62 | 7.36 | 7.87 | 0.300 | 0.290 | 0.310 |
| F | 6.35 | 6.22 | 6.47 | 0.250 | 0.245 | 0.255 |
| I | 4.06 | 3.81 | 4.31 | 0.160 | 0.150 | 0.170 |
| L | 3.30 | 3.00 | 3.70 | 0.130 | 0.118 | 0.146 |
| N | 10d | | | 10d | | |
| R1 | 0.40 | | | 0.016 | | |
| K | 2.00 | 1.90 | 2.16 | 0.079 | 0.075 | 0.085 |
| K1 | 2.40 | 2.30 | 2.50 | 0.094 | 0.090 | 0.098 |
| K2 | 0.50 | 0.45 | 0.55 | 0.020 | 0.018 | 0.022 |
| Z | | | 1.27 | | | 0.050 |

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