

VERTICAL DEFLECTION BOOSTER

ADVANCE DATA

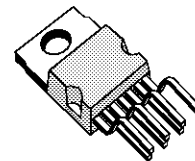
- POWER AMPLIFIER
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.0A_{PP}
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE
- EXTERNAL FLYBACK SUPPLY

DESCRIPTION

Designed for monitors and high performance TVs, the STV9378F vertical deflection booster can handle flyback voltage up to 90V. More than this it is possible to have a flyback voltage which is more than the double of the supply (Pin 2). This allows to decrease the power consumption or to decrease the flyback time for a given supply voltage.

The STV9378F operates with supplies up to 42V and provides up to 2A_{pp} output current to drive the yoke.

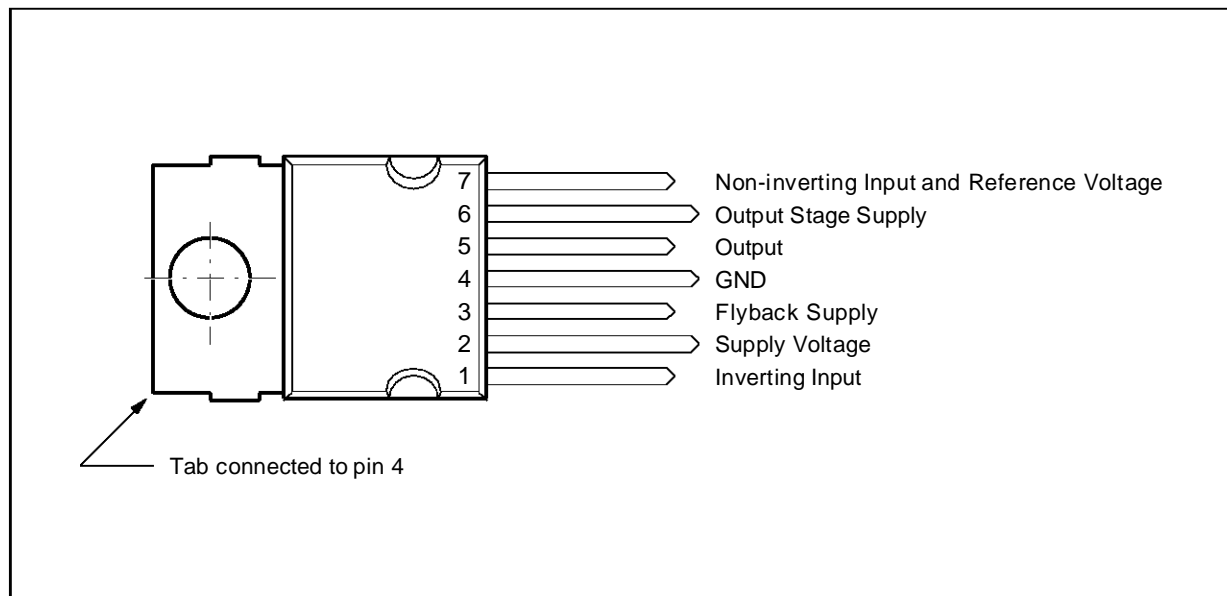
The STV9378F is offered in HEPTAWATT package.



HEPTAWATT
(Plastic Package)

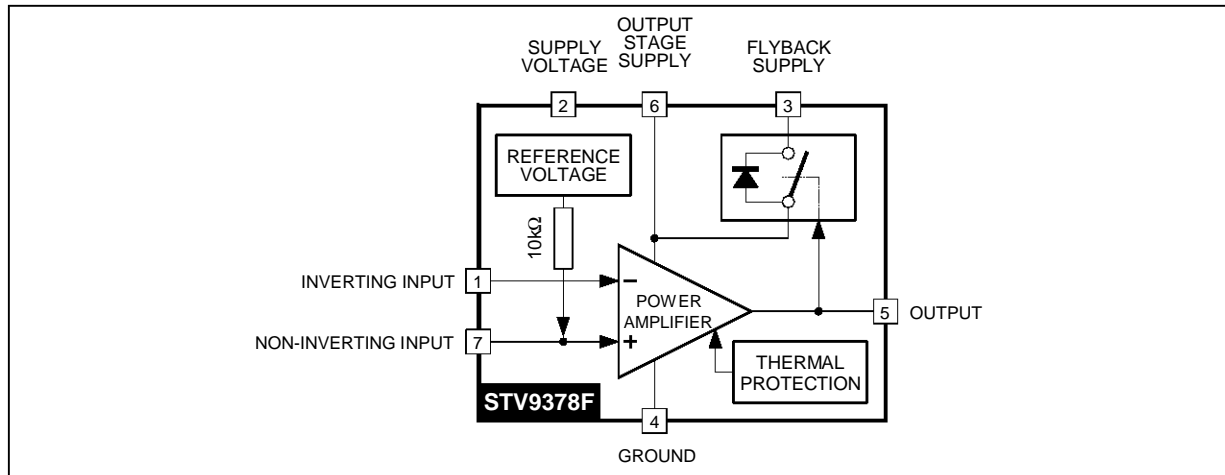
ORDER CODE : STV9378F

PIN CONNECTIONS



9378F-01.EPS

BLOCK DIAGRAM



9378F-02.EPS

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-------------|--|----------------|------|
| V_S | Supply Voltage (Pin 2) (see note 1) | 50 | V |
| V_6 | Flyback Peak Voltage (Pin 6) (see note 1) | 100 | V |
| V_1, V_7 | Amplifier Input Voltage (Pins 1-7) (see note 1) | - 0.3, + V_S | V |
| I_O | Maximum Output Peak Current (see notes 2 and 3) | 1.5 | A |
| I_3 | Maximum Sink Current ($t < 1ms$) | 1.5 | A |
| I_3 | Maximum Source Current ($t < 1ms$) (in the diode, see Block Diagram) | 1.5 | A |
| $V_3 - V_2$ | Voltage Difference between Flyback Supply and Supply Voltage | 70 | V |
| T_{oper} | Operating Ambient Temperature | - 20, + 75 | °C |
| T_{stg} | Storage Temperature | - 40, + 150 | °C |
| T_j | Junction Temperature | +150 | °C |

9378F-01.TBL

- Notes :**
1. Versus GND.
 2. The output current can reach 4A peak for $t \leq 10\mu s$ (up to 120Hz).
 3. Provided SOAR is respected (see Figures 1 and 2).

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|---------------|---------------------------------------|--------|------|
| $R_{th(j-c)}$ | Junction-case Thermal Resistance | Max. 3 | °C/W |
| T_t | Temperature for Thermal Shutdown | 150 | °C |
| ΔT_t | Hysteresis on T_t | 10 | °C |
| T_{jr} | Recommended Max. Junction Temperature | 120 | °C |

9378F-02.TBL

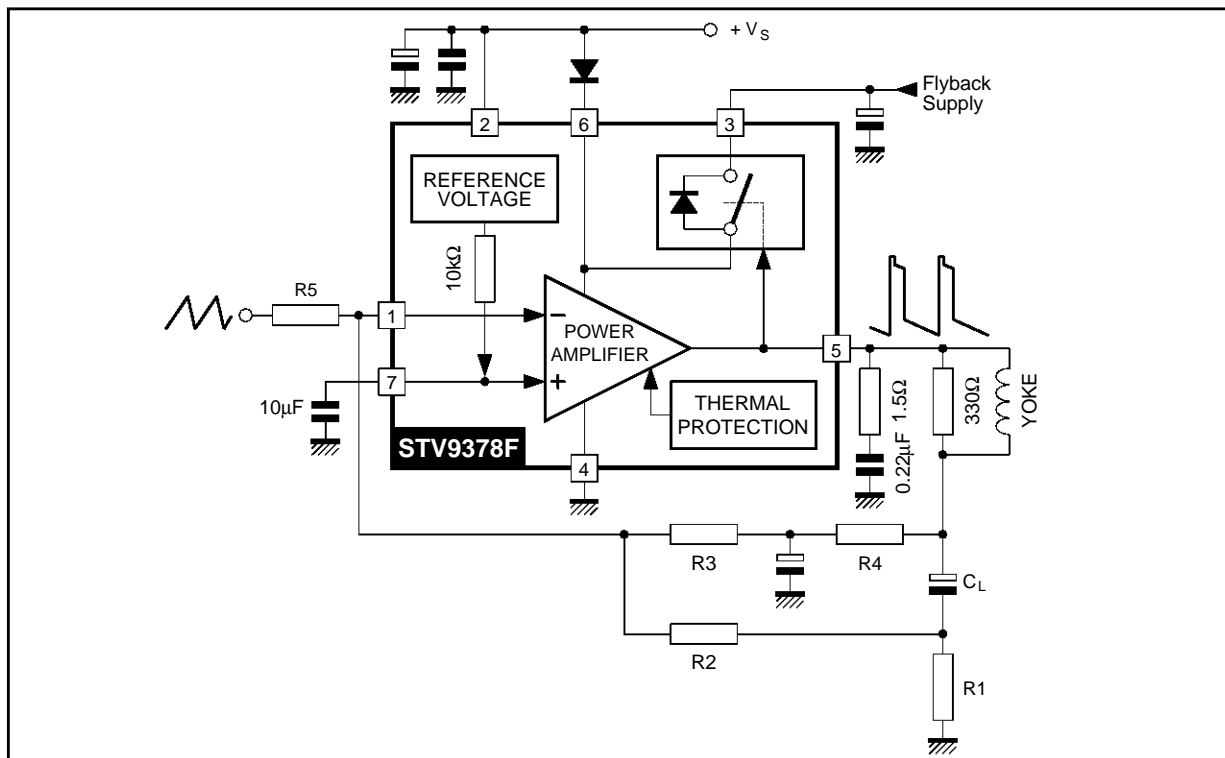
ELECTRICAL CHARACTERISTICS

($V_S = 42V$, $T_A = 25^\circ C$, unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|---|---------------------|-------|--------|------|-----------------|
| V_S | Operating Supply Voltage Range | | 10 | | 42 | V |
| V_{3M} | Operating Flyback Supply Voltage | | V_S | | 90 | V |
| I_2 | Pin 2 Quiescent Current | $I_3 = 0, I_5 = 0$ | | 10 | 20 | mA |
| I_6 | Pin 6 Quiescent Current | $I_3 = 0, I_5 = 0$ | 5 | 10 | 30 | mA |
| I_O | Max. Peak Output Current | | | | 1 | A |
| I_1 | Amplifier Bias Current | $V_1 = 1V$ | | - 0.15 | - 1 | μA |
| V_7 | Internal Reference Voltage | | 2.2 | 2.3 | 2.4 | V |
| $\frac{\Delta V_7}{\Delta V_S}$ | Reference Voltage Drift versus V_S | $V_S = 24$ to $42V$ | | 2 | 4 | mV/V |
| Kt | Reference Voltage Drift versus T_j | | | 100 | 150 | ppm/ $^\circ C$ |
| GV | Voltage Gain | | 80 | | | dB |
| V_{5L} | Output Saturation Voltage to GND (Pin 4) | $I_5 = 1A$ | | 1 | 1.5 | V |
| V_{5H} | Output Saturation Voltage to Supply (Pin 6) | $I_5 = - 1A$ | | 1.6 | 2.1 | V |
| V_{D5-6} | Diode Forward Voltage between Pins 5-6 | $I_5 = 1A$ | | 1.5 | 2 | V |
| V_{D3-6} | Diode Forward Voltage between Pins 3-6 | $I_3 = 1A$ | | 1.5 | 2 | V |
| V_{3-6} | Voltage Drop between Pins 3-6 (2nd part of flyback) | $I_3 = - 1A$ | | 2.1 | 2.9 | V |

9378F-03.TEL

APPLICATION CIRCUIT



9378F-03.EPS

Figure 1 : Output Transistors SOA
(for secondary breakdown)

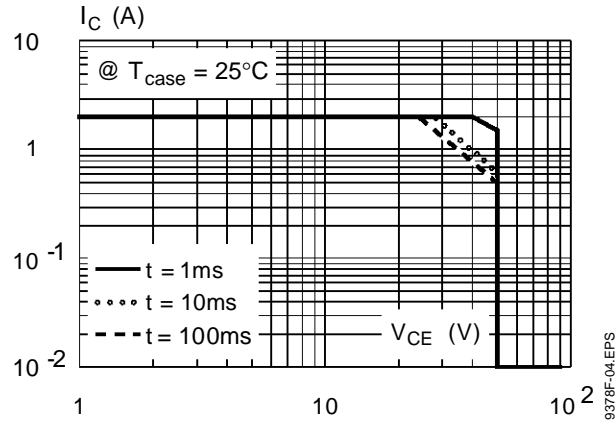
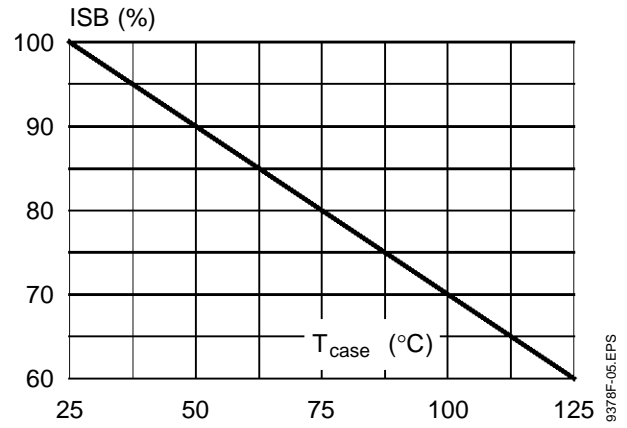
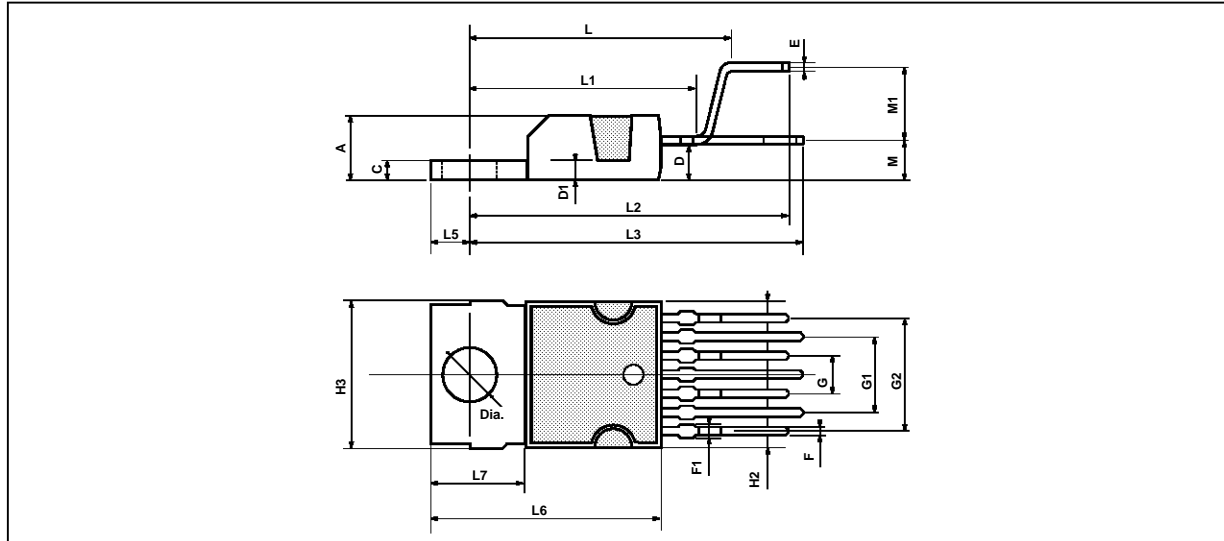


Figure 2 : Secondary Breakdown Temperature Derating Curve
(ISB = secondary breakdown current)



PACKAGE MECHANICAL DATA : 7 PINS - PLASTIC HEPTAWAT



PM-HEPTV.EPS

| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|-------|------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 4.8 | | | 0.189 |
| C | | | 1.37 | | | 0.054 |
| D | 2.4 | | 2.8 | 0.094 | | 0.110 |
| D1 | 1.2 | | 1.35 | 0.047 | | 0.053 |
| E | 0.35 | | 0.55 | 0.014 | | 0.022 |
| F | 0.6 | | 08 | 0.024 | | 0.031 |
| F1 | | | 0.9 | | | 0.035 |
| G | 2.41 | 2.54 | 2.67 | 0.095 | 0.100 | 0.105 |
| G1 | 4.91 | 5.08 | 5.21 | 0.193 | 0.200 | 0.205 |
| G2 | 7.49 | 7.62 | 7.8 | 0.295 | 0.300 | 0.307 |
| H2 | | | 10.4 | | | 0.409 |
| H3 | 10.05 | | 10.4 | 0.396 | | 0.409 |
| L | | 16.97 | | | 0.668 | |
| L1 | | 14.92 | | | 0.587 | |
| L2 | | 21.54 | | | 0.848 | |
| L3 | | 22.62 | | | 0.891 | |
| L5 | 2.6 | | 3 | 0.102 | | 0.118 |
| L6 | 15.1 | | 15.8 | 0.594 | | 0.622 |
| L7 | 6 | | 6.6 | 0.236 | | 0.260 |
| M | | 2.8 | | | 0.110 | |
| M1 | | 5.08 | | | 0.200 | |
| Dia. | 3.65 | | 3.85 | 0.144 | | 0.152 |

HEPTV.TBL

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