

VERTICAL DEFLECTION BOOSTER

ADVANCE DATA

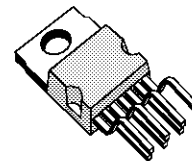
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.0A_{PP}
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- INTERNAL REFERENCE VOLTAGE

DESCRIPTION

Designed for monitors and high performance TVs, the STV9378 vertical deflection booster delivers flyback voltages up to 90V.

The STV9378 operates with supplies up to 42V and provides up to 2A_{pp} output current to drive the yoke.

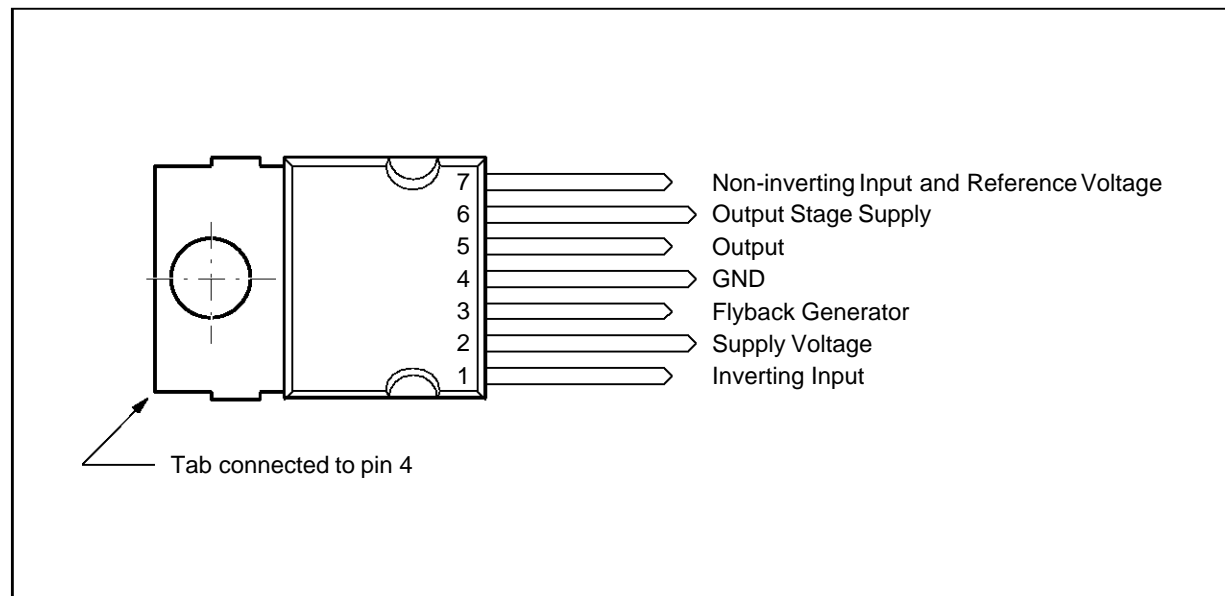
The STV9378 is offered in HEPTAWATT package.



HEPTAWATT
(Plastic Package)

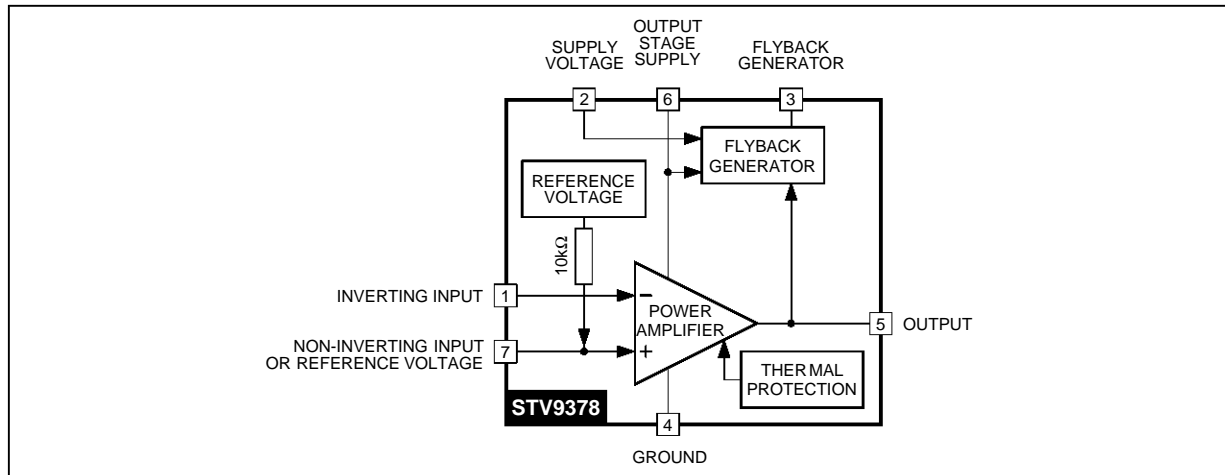
ORDER CODE : STV9378

PIN CONNECTIONS



9378-01.EPS

BLOCK DIAGRAM



9378-02.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 (first part of flyback) ($t < 1ms$) | 1.5 | A |
| I_3 | Maximum Source Current ($t < 1ms$) | 1.5 | A |
| T_{oper} | Operating Ambient Temperature | - 20, + 75 | °C |
| T_{stg} | Storage Temperature | - 40, + 150 | °C |
| T_j | Junction Temperature | +150 | °C |

9378-01.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 |

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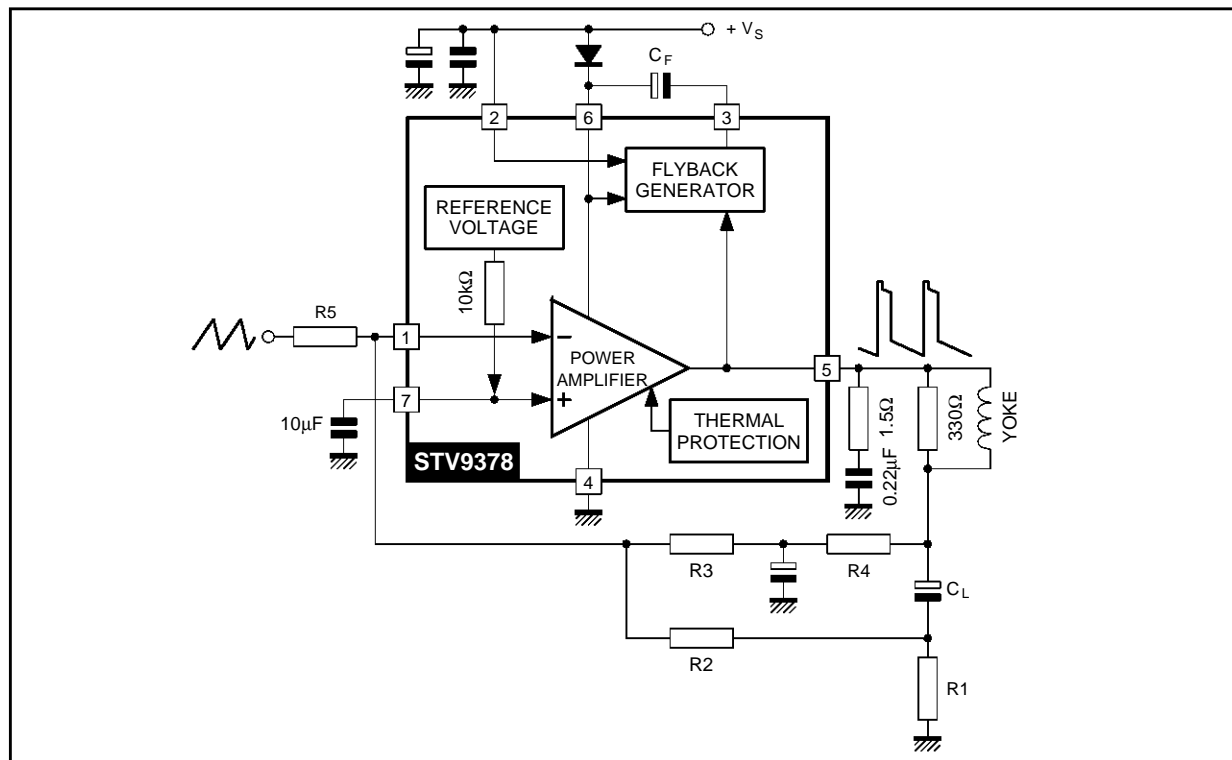
ELECTRICAL CHARACTERISTICS

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

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---------------------------------|---|---------------------|------|--------|------|-----------------|
| V_S | Operating Supply Voltage Range | | 10 | | 42 | V |
| 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_{D3-2} | Diode Forward Voltage between Pins 3-2 | $I_3 = 1A$ | | 1.5 | 2 | V |
| V_{3L} | Saturation Voltage on Pin 3 | $I_3 = 20mA$ | | 0.8 | 1.2 | V |
| V_{3SH} | Saturation Voltage to Pin 2 (2nd part of flyback) | $I_3 = -1A$ | | 2.1 | 2.9 | V |

9378-03.TBL

APPLICATION CIRCUIT



9378-03.EPS

Figure 1 : Output Transistors SOA
(for secondary breakdown)

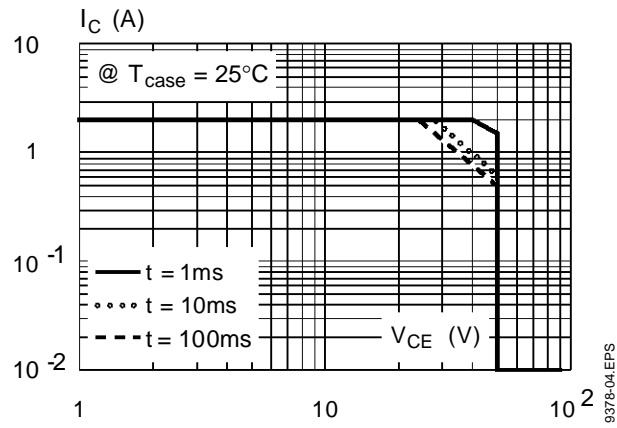
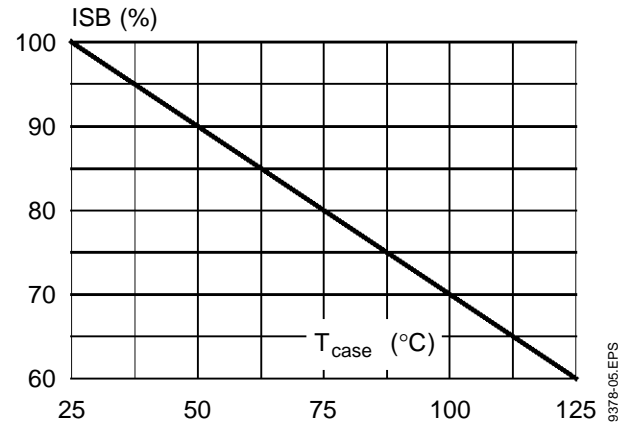
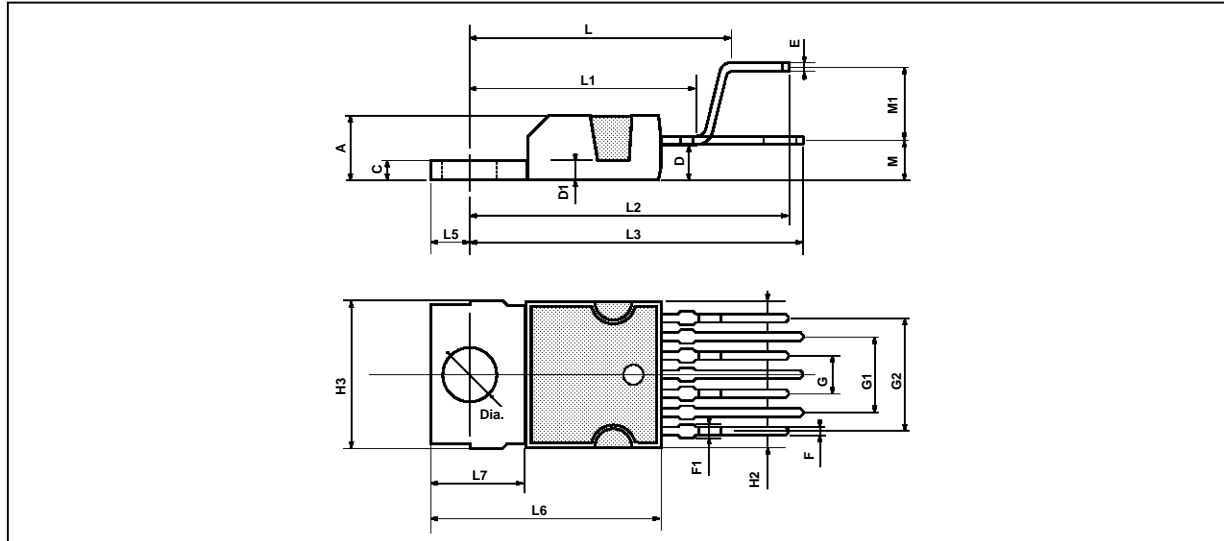


Figure 2 : Secondary Breakdown Temperature Derating Curve
(ISB = secondary breakdown current)



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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