

## VERTICAL DEFLECTION BOOSTER

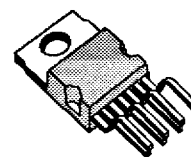
- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.0A<sub>PP</sub>
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- SUITABLE FOR DC COUPLING APPLICATION

### DESCRIPTION

Designed for monitors and high performance TVs, the STV9379 vertical deflection booster delivers flyback voltages up to 90V.

The STV9379 operates with supplies up to 42V and provides up to 2A<sub>PP</sub> output current to drive the yoke.

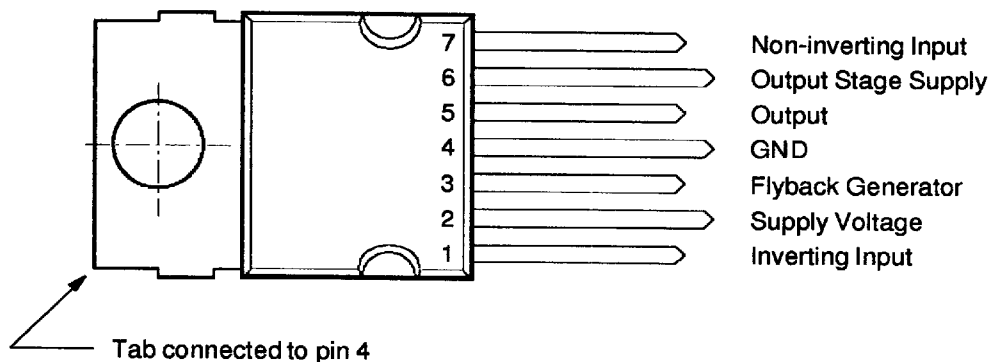
The STV9379 is offered in HEPTAWATT package.



**HEPTAWATT**  
(Plastic Package)

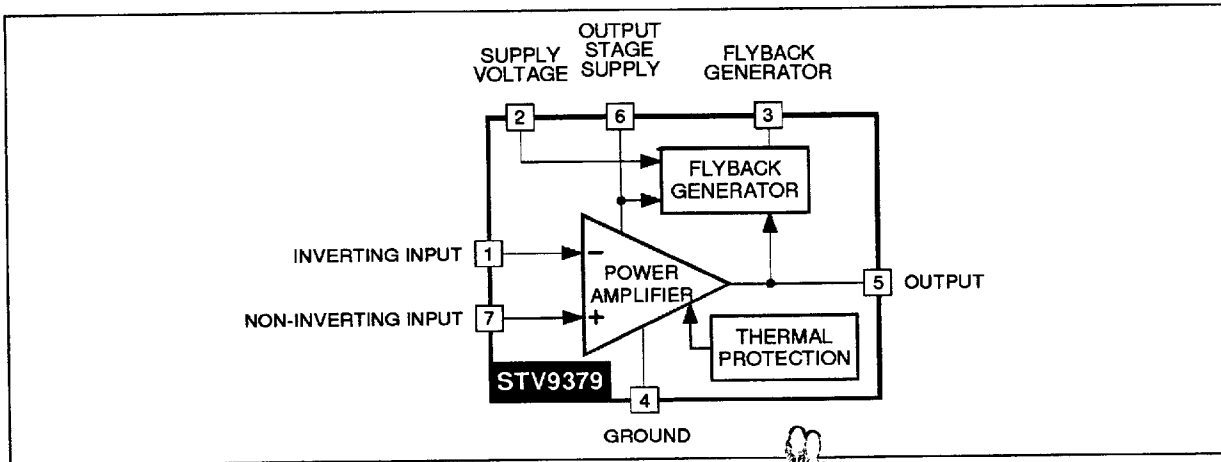
**ORDER CODE : STV9379**

### PIN CONNECTIONS



9879-01.EPS

# BLOCK DIAGRAM



9379-02.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) ( $t < 1\text{ms}$ ) | 1.5            | A    |
| $I_3$      | Maximum Source Current ( $t < 1\text{ms}$ )                       | 1.5            | A    |
| $V_{ESD}$  | Electrostatic Handling for all pins (see note 4)                  | 300            | V    |
| $T_{oper}$ | Operating Ambient Temperature                                     | - 20, + 75     | °C   |
| $T_{stg}$  | Storage Temperature                                               | - 40, + 150    | °C   |
| $T_j$      | Junction Temperature                                              | +150           | °C   |

9379-01.TBL

- Notes :**
1. Versus GND.
  2. The output current can reach 4A peak for  $t \leq 10\mu\text{s}$  (up to 120Hz).
  3. Provided SOAR is respected (see Figures 1 and 2).
  4. Equivalent to discharging a 200pF capacitor through a  $0\Omega$  series resistor.

# 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   |
| $\Delta T_t$  | Hysteresis on $T_t$                   | 10    | °C   |
| $T_{jr}$      | Recommended Max. Junction Temperature | 120   | °C   |

9379-02.TBL

## ELECTRICAL CHARACTERISTICS

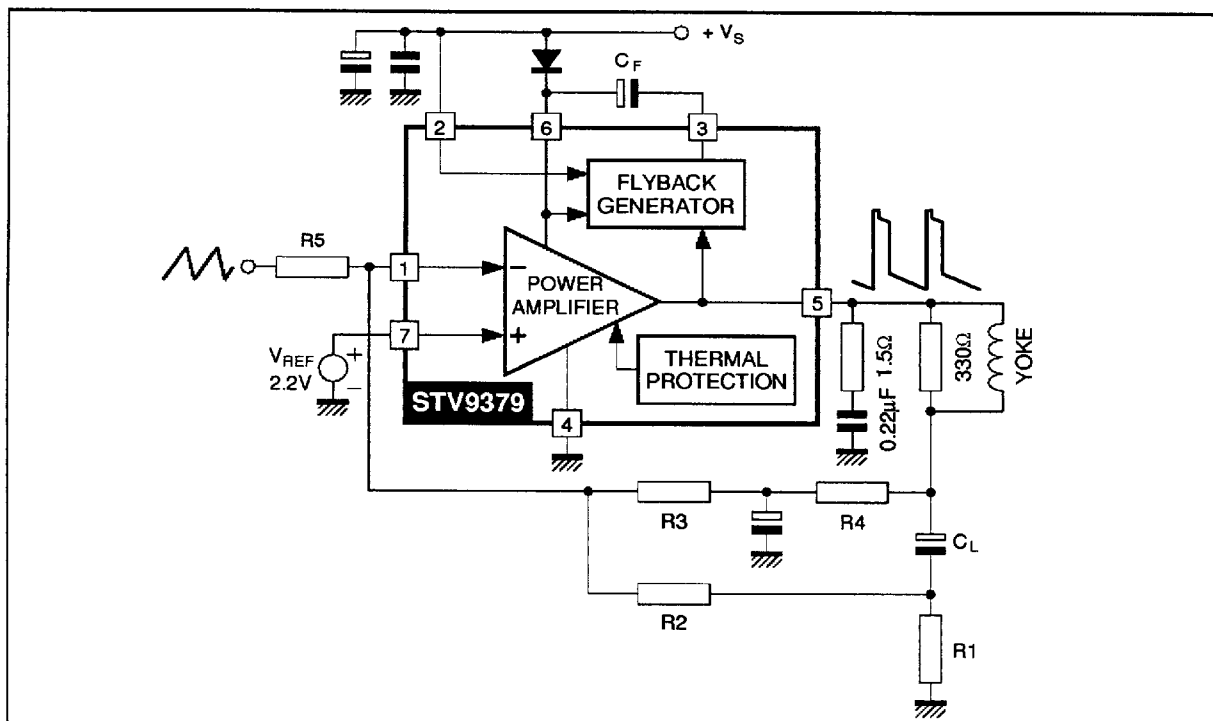
( $V_S = 42V$ ,  $T_A = 25^{\circ}C$ , unless otherwise specified)

| Symbol               | Parameter                                         | Test Conditions                            | Min. | Typ.   | Max. | Unit  |
|----------------------|---------------------------------------------------|--------------------------------------------|------|--------|------|-------|
| V <sub>S</sub>       | Operating Supply Voltage Range                    |                                            | 10   |        | 42   | V     |
| I <sub>2</sub>       | Pin 2 Quiescent Current                           | I <sub>3</sub> = 0, I <sub>5</sub> = 0     |      | 10     | 20   | mA    |
| I <sub>6</sub>       | Pin 6 Quiescent Current                           | I <sub>3</sub> = 0, I <sub>5</sub> = 0     | 5    | 10     | 30   | mA    |
| I <sub>O</sub>       | Max. Peak Output Current                          |                                            |      |        | 1    | A     |
| I <sub>1</sub>       | Amplifier Bias Current                            | V <sub>1</sub> = 25V, V <sub>7</sub> = 26V |      | - 0.15 | - 1  | μA    |
| I <sub>7</sub>       | Amplifier Bias Current                            | V <sub>1</sub> = 26V, V <sub>7</sub> = 25V |      | - 0.15 | - 1  | μA    |
| V <sub>IO</sub>      | Offset Voltage                                    |                                            |      |        | 7    | mV    |
| ΔV <sub>IO</sub> /dt | Offset Drift versus Temperature                   |                                            |      | - 10   |      | μV/°C |
| GV                   | Voltage Gain                                      |                                            | 80   |        |      | dB    |
| V <sub>5L</sub>      | Output Saturation Voltage to GND (Pin 4)          | I <sub>5</sub> = 1A                        |      | 1      | 1.5  | V     |
| V <sub>5H</sub>      | Output Saturation Voltage to Supply (Pin 6)       | I <sub>5</sub> = -1A                       |      | 1.6    | 2.1  | V     |
| V <sub>D5 - 6</sub>  | Diode Forward Voltage between Pins 5-6            | I <sub>5</sub> = 1A                        |      | 1.5    | 2    | V     |
| V <sub>D3 - 2</sub>  | Diode Forward Voltage between Pins 3-2            | I <sub>3</sub> = 1A                        |      | 1.5    | 2    | V     |
| V <sub>3L</sub>      | Saturation Voltage on Pin 3                       | I <sub>3</sub> = 20mA                      |      | 0.8    | 1.2  | V     |
| V <sub>3SH</sub>     | Saturation Voltage to Pin 2 (2nd part of flyback) | I <sub>3</sub> = -1A                       |      | 2.1    | 2.9  | V     |

|   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
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## APPLICATION CIRCUITS

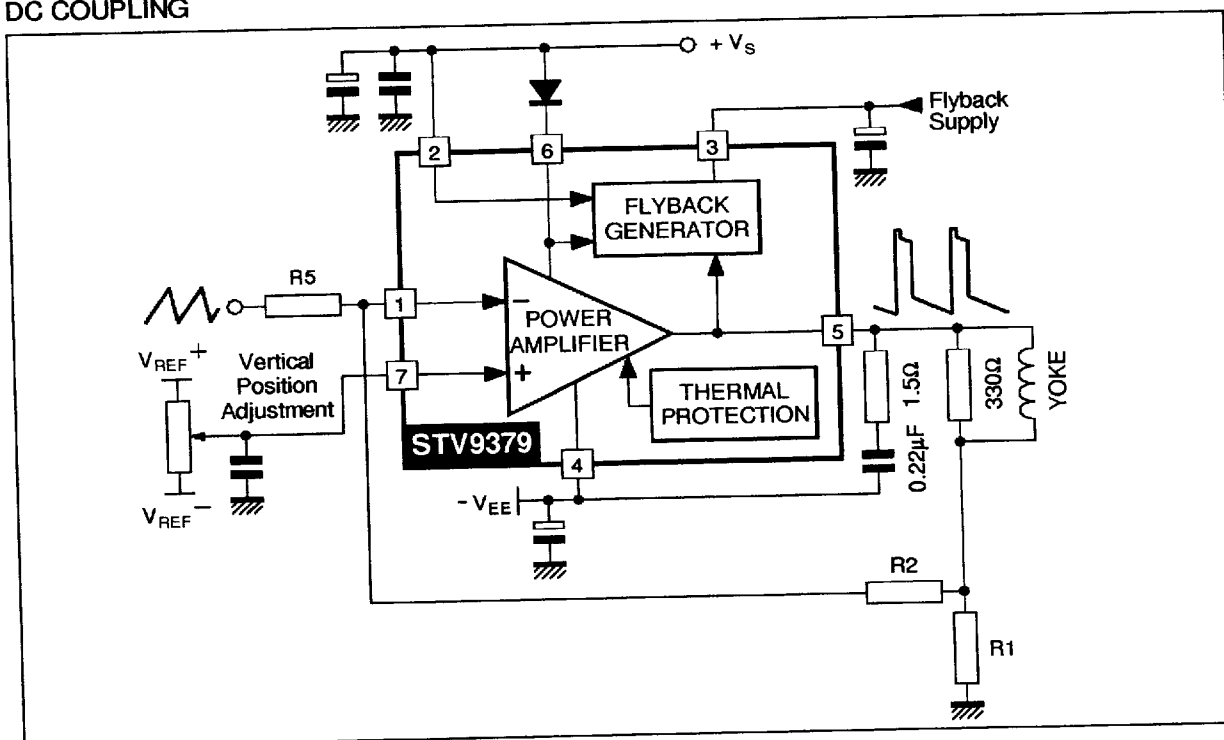
## AC COUPLING



1

# APPLICATION CIRCUITS (continued)

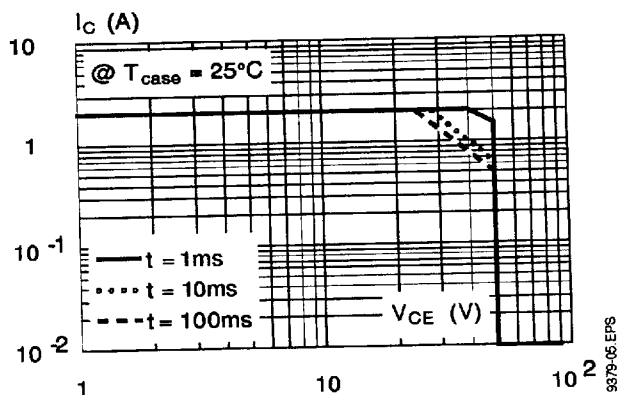
## DC COUPLING



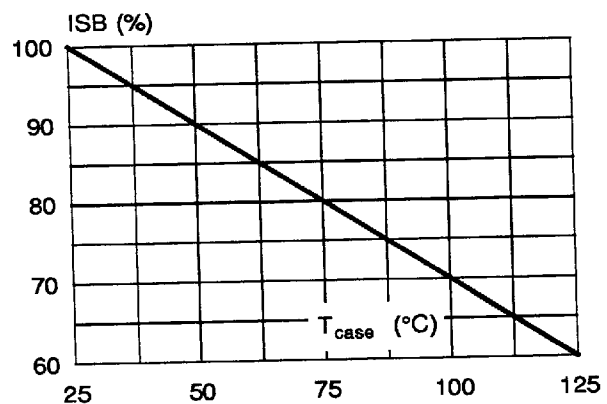
9379-04.EPS

**Figure 1 :** Output Transistors SOA  
(for secondary breakdown)

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

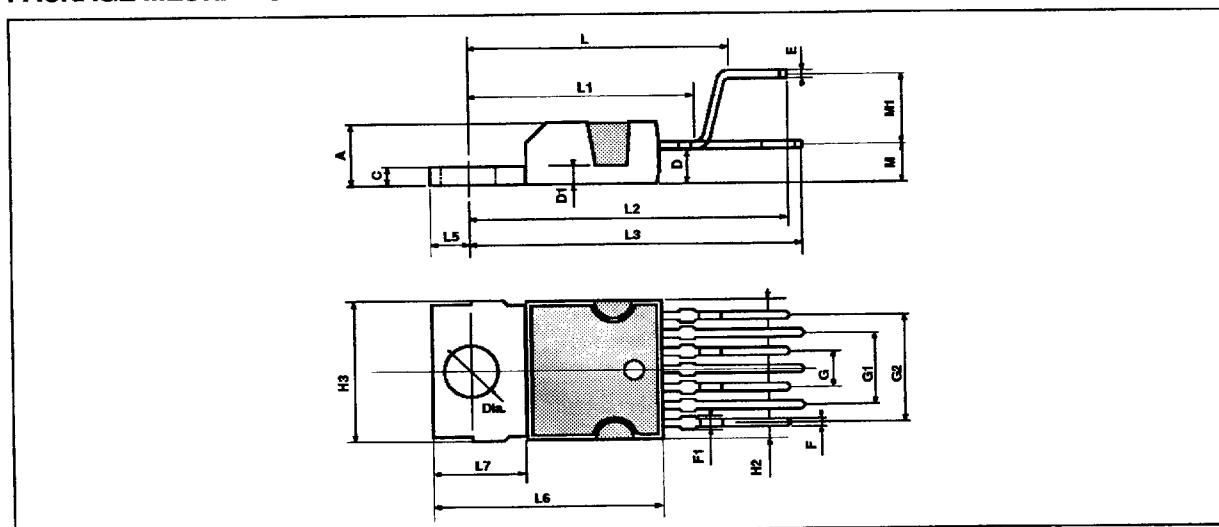


9379-05.EPS



9379-06.EPS

## 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         |       | 0.8  | 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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