



STV9379FA

VERTICAL DEFLECTION BOOSTER

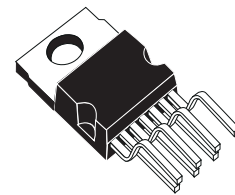
- POWER AMPLIFIER
- THERMAL PROTECTION
- OUTPUT CURRENT UP TO 2.6A_{PP}
- FLYBACK VOLTAGE UP TO 90V (on Pin 5)
- SUITABLE FOR DC COUPLING APPLICATION
- EXTERNAL FLYBACK SUPPLY

DESCRIPTION

Designed for monitors and high performance TVs, the STV9379FA vertical deflection booster can handle flyback voltage up to 90V. Further to 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 STV9379FA operates with supplies up to 42V and provides up to 2.6A_{PP} output current to drive the yoke.

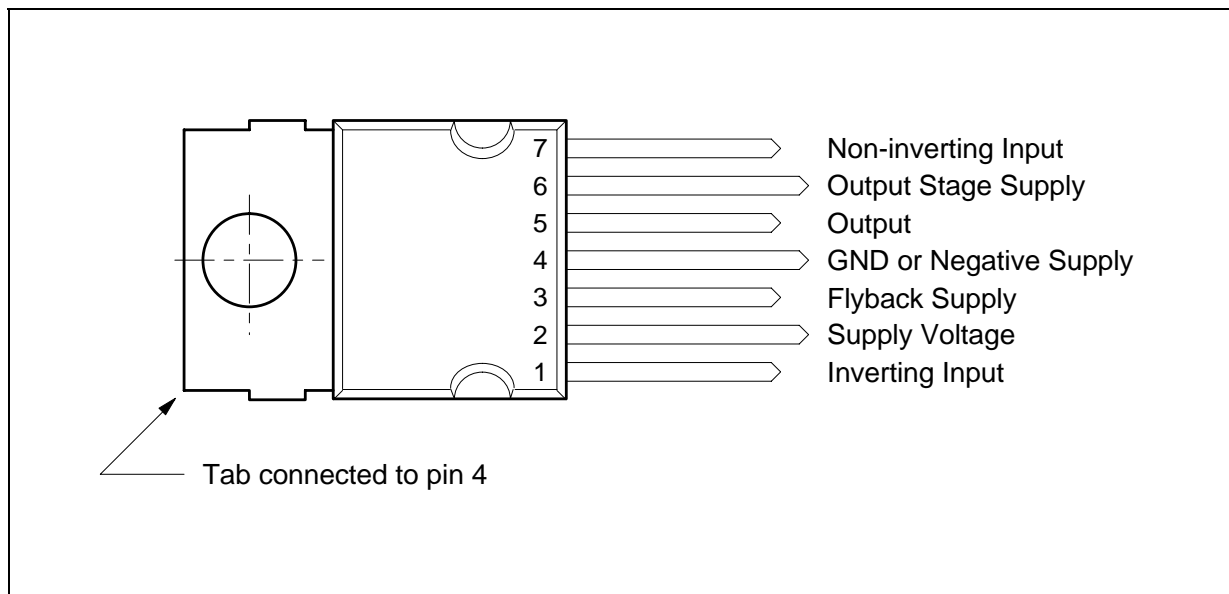
The STV9379FA is offered in HEPTAWATT package.



HEPTAWATT
(Plastic Package)

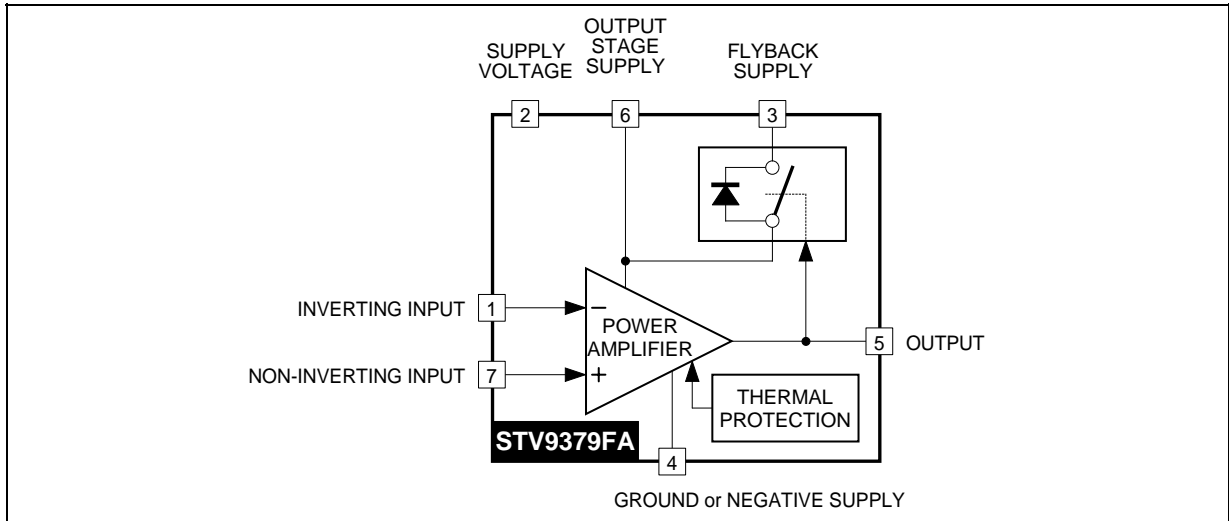
ORDER CODE : STV9379FA

PIN CONNECTIONS



9379FA01.EPS

BLOCK DIAGRAM



9379FA02.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) | 1.8 | A |
| I_3 | Maximum Sink Current ($t < 1\text{ms}$) | 1.8 | A |
| I_3 | Maximum Source Current ($t < 1\text{ms}$) (in the diode, see Block Diagram) (see note 2) | 1.8 | A |
| V_{ESD} | ESD susceptibility : EIAJ Norm (200pF discharged through 0Ω) | 300 | V |
| $V_3 - V_2$ | Voltage Difference between Flyback Supply and Supply Voltage | 50 | V |
| T_{oper} | Operating Ambient Temperature | - 20, + 75 | °C |
| T_{stg} | Storage Temperature | - 40, + 150 | °C |
| T_j | Junction Temperature | +150 | °C |

9379FA01.TBL

- Notes :**
1. Versus Pin 4.
 2. The output current can reach 5A peak for $t \leq 10\mu\text{s}$ (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 |

9379FA02.TBL

ELECTRICAL CHARACTERISTICS

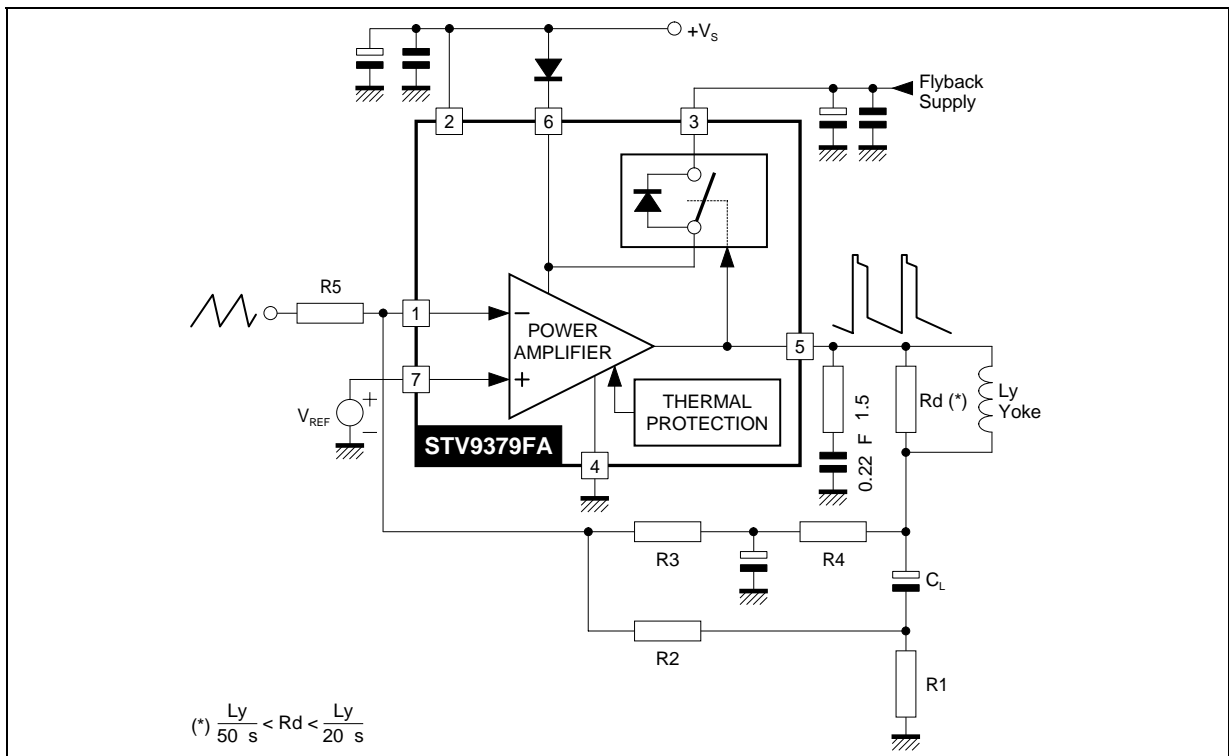
($V_S = 42V$, $T_A = 25^\circ C$, unless otherwise specified)

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|--------------------|--|------------------------|-------|--------|------|------------------|
| V_S | Operating Supply Voltage Range | Versus Pin 4 | 10 | | 42 | V |
| V_{3M} | Operating Flyback Supply Voltage ($V_{3M} \leq V_S + 50V$) | Versus Pin 4 | V_S | | 90 | V |
| I_2 | Pin 2 Quiescent Current | $I_3 = 0, I_5 = 0$ | | 13 | 20 | mA |
| I_6 | Pin 6 Quiescent Current | $I_3 = 0, I_5 = 0$ | 5 | 10 | 30 | mA |
| I_O | Max. Operating Peak Output Current | | | | 1.3 | A |
| I_1 | Amplifier Bias Current | $V_1 = 22V, V_7 = 23V$ | | - 0.15 | - 1 | μA |
| I_7 | Amplifier Bias Current | $V_1 = 23V, V_7 = 22V$ | | - 0.15 | - 1 | μA |
| V_{IO} | Offset Voltage | | | | 7 | mV |
| $\Delta V_{IO}/dt$ | Offset Drift versus Temperature | | | - 10 | | $\mu V/^\circ C$ |
| GV | Voltage Gain | | 80 | | | dB |
| V_{5L} | Output Saturation Voltage to GND (Pin 4) | $I_5 = 1.3A$ | | 1 | 1.6 | V |
| V_{5H} | Output Saturation Voltage to Supply (Pin 6) | $I_5 = - 1.3A$ | | 1.6 | 2.2 | V |
| V_{D5-6} | Diode Forward Voltage between Pins 5-6 | $I_5 = 1.3A$ | | 1.4 | 2.1 | V |
| V_{D3-6} | Diode Forward Voltage between Pins 3-6 | $I_3 = 1.3A$ | | 1.7 | 2.5 | V |
| V_{3-6} | Voltage Drop between Pins 3-6 (2nd part of flyback) | $I_3 = - 1.3A$ | | 2.9 | 3.6 | V |

9379FA03.TBL

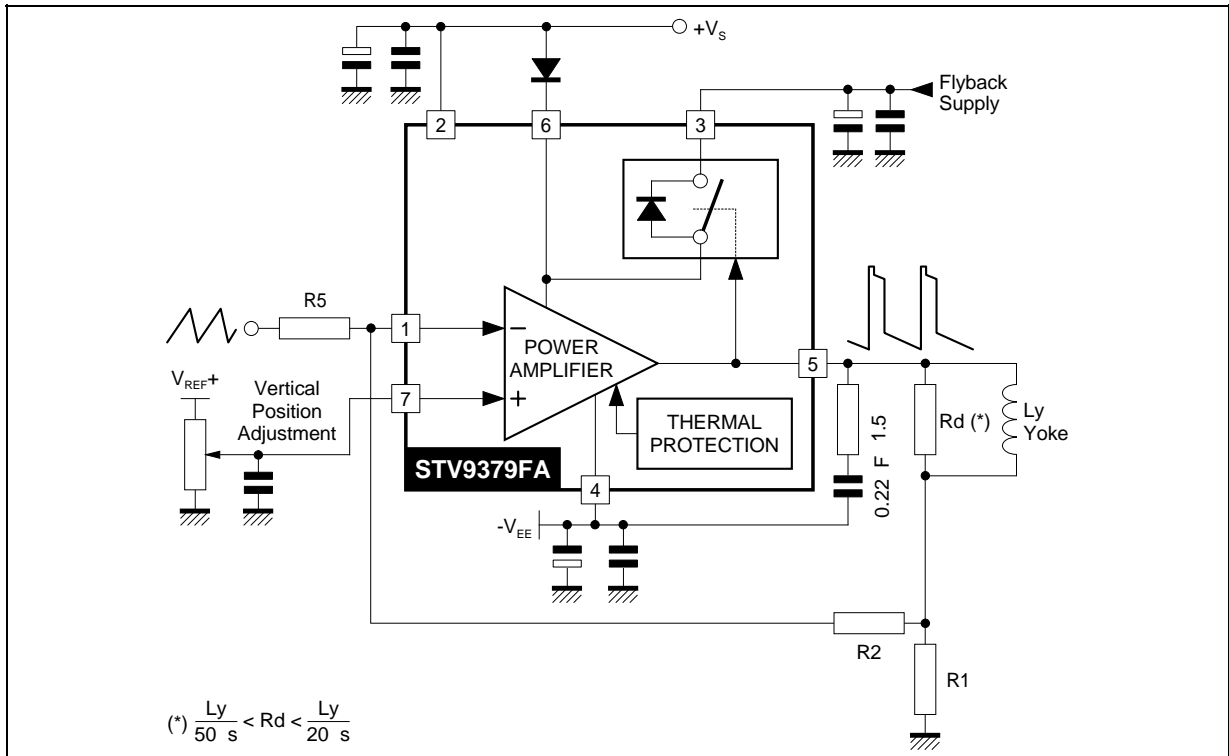
APPLICATION CIRCUITS

AC COUPLING



9379FA03.EPS

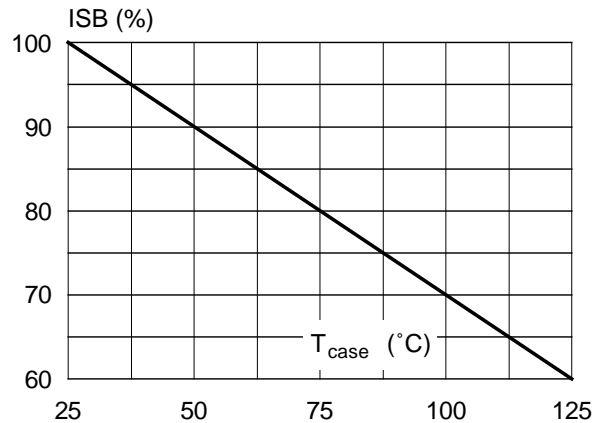
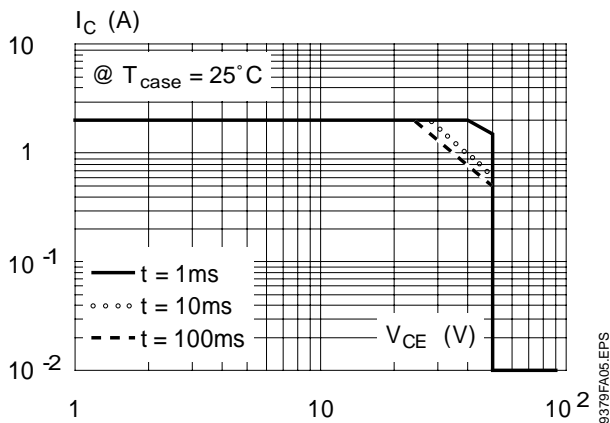
APPLICATION CIRCUITS (continued)
DC COUPLING



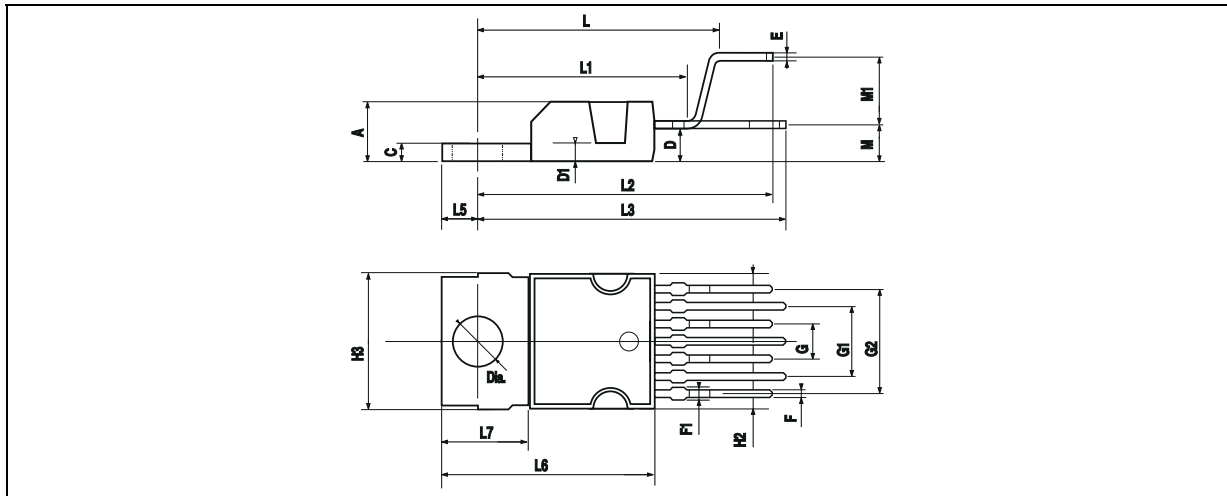
9379FA04.EPS

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 HEPTAWATT



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

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No licence is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 1998 STMicroelectronics - All Rights Reserved

Purchase of I²C Components of STMicroelectronics, conveys a license under the Philips I²C Patent. Rights to use these components in a I²C system, is granted provided that the system conforms to the I²C Standard Specifications as defined by Philips.

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - France - Germany - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.