

## TV VERTICAL DEFLECTION BOOSTER

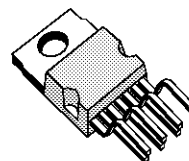
- POWER AMPLIFIER
- FLYBACK SUPPLY VOLTAGE SEPARATED
- THERMAL PROTECTION

### DESCRIPTION

Designed for monitors and high performance TVs, the TDA8179FS vertical deflection booster is able to work with a flyback voltage more than the double of  $V_s$ .

The TDA8179FS operates with supplies up to 42V, flyback output up to 92V and provides up to 2Aapp output current to drive to yoke.

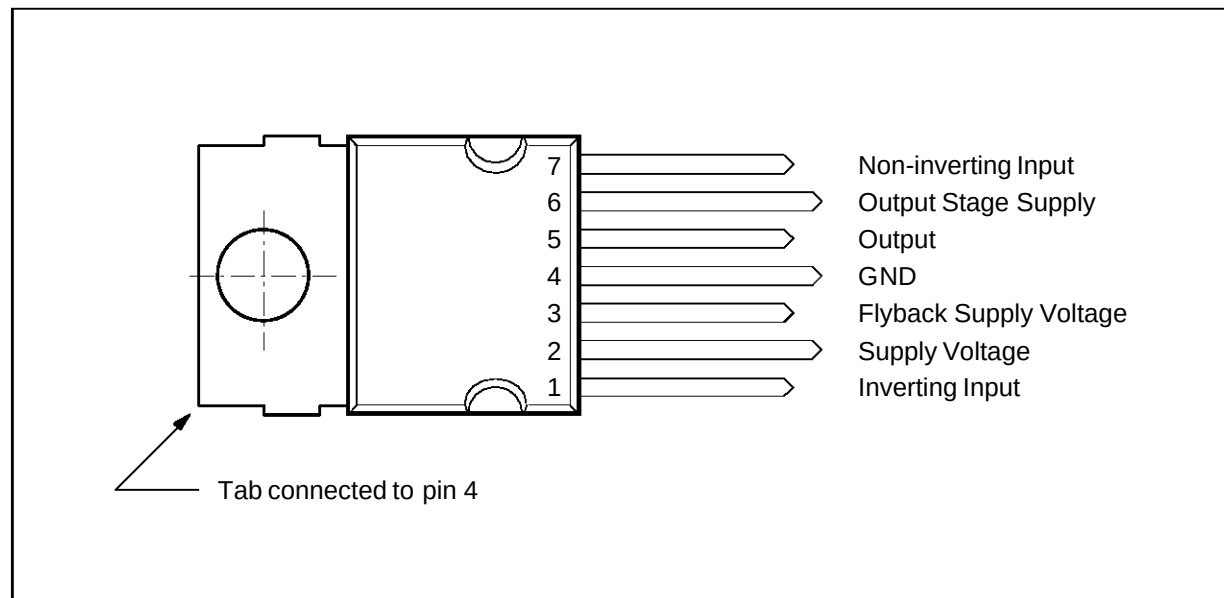
The TDA8179FS is offered in HEPTAWATT package.



**HEPTAWATT**  
(Plastic Package)

**ORDER CODE : TDA8179FS**

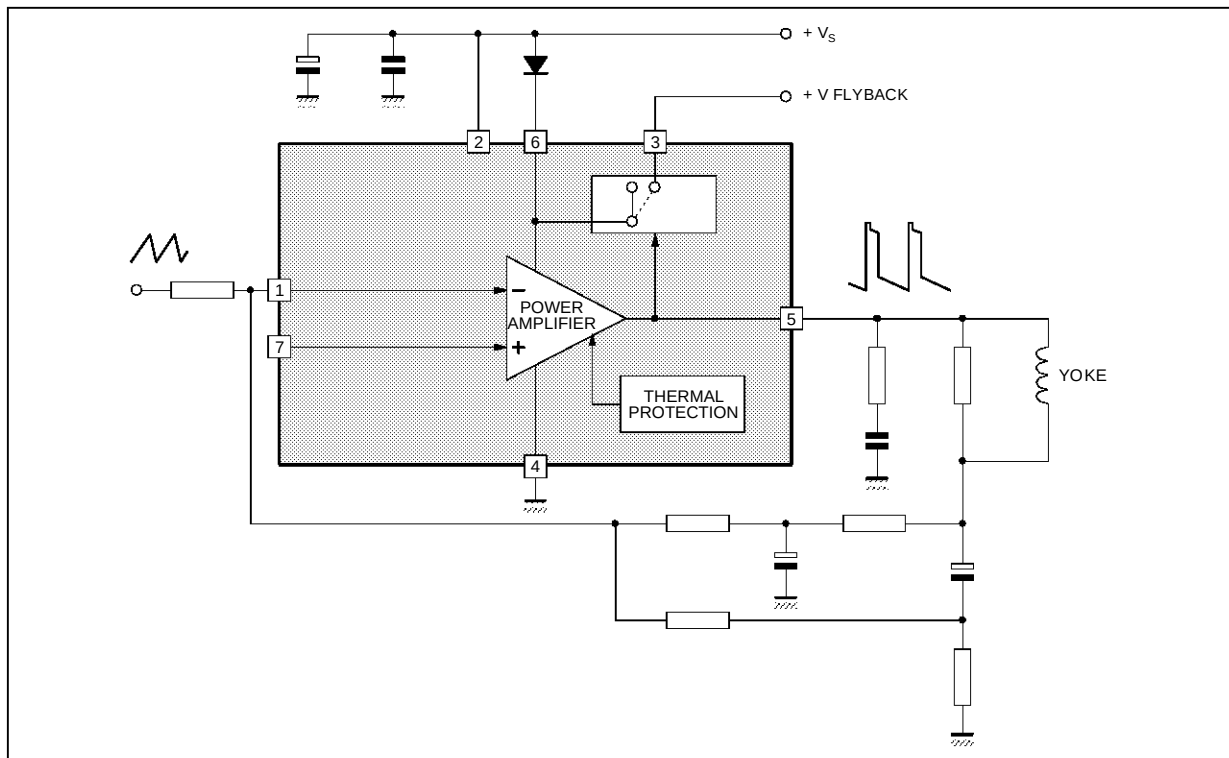
### PIN CONNECTIONS



8179F-01.EPS

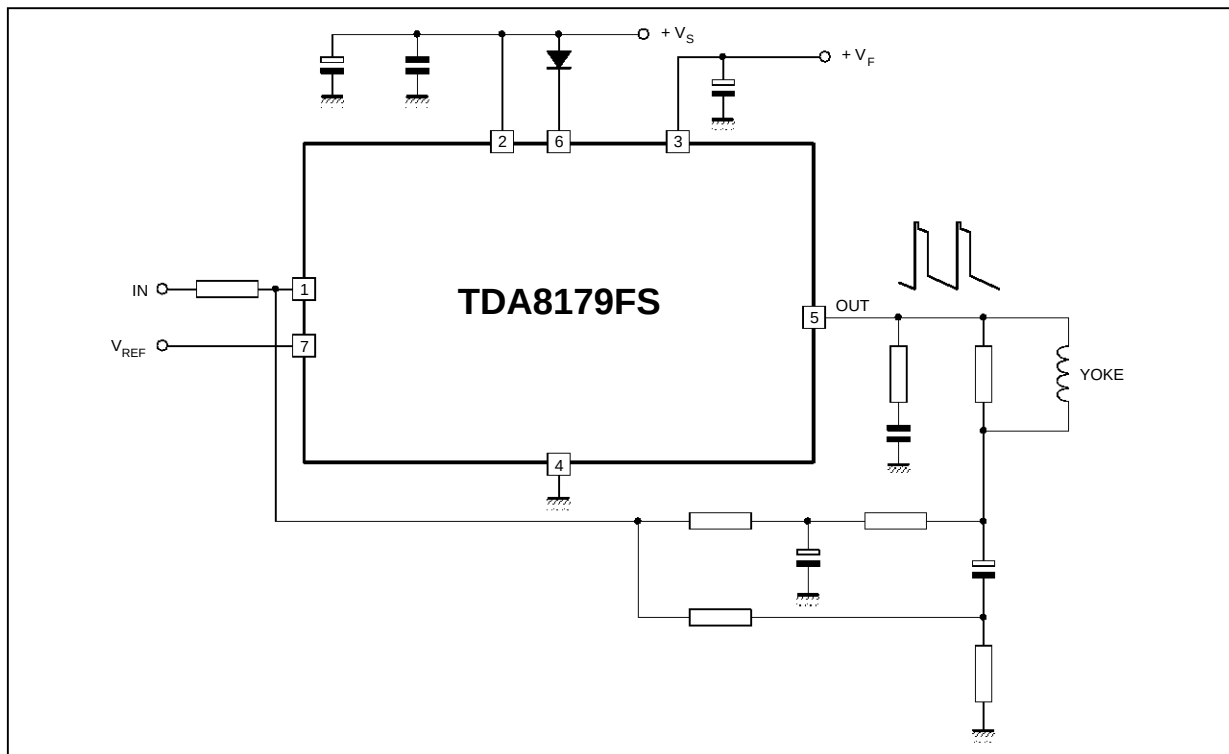
# TDA8179FS

## BLOCK DIAGRAM



8179F-02.EPS

## APPLICATION CIRCUIT



8179F-03.EPS

Note : For values see " Easy Design of Vertical Deflection Stages" (software available from our sales offices)

## ABSOLUTE MAXIMUM RATINGS

| Symbol      | Parameter                                                                                                                                                        | Value         | Unit             |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------|
| $V_S$       | Supply Voltage (pin 2)                                                                                                                                           | 50            | V                |
| $V_F$       | Flyback Supply Voltage                                                                                                                                           | 100           | V                |
| $V_F - V_S$ | Difference between Flyback Supply Voltage and Supply Voltage                                                                                                     | 50            | V                |
| $V_1, V_7$  | Amplifier Input Voltage                                                                                                                                          | + $V_S$       |                  |
| $I_O$       | Output Peak Current<br>Non-repetitive, $t = 2\text{ms}$<br>$f = 50$ or $60\text{Hz}$ , $t \leq 10\mu\text{s}$<br>$f = 50$ or $60\text{Hz}$ , $t > 10\mu\text{s}$ | 2<br>2<br>1.8 | A                |
| $I_3$       | Pin 3 Peak Flyback Current at $f = 50$ or $60\text{Hz}$ , $t_{fly} \leq 1.5\text{ms}$                                                                            | 1.8           | A                |
| $P_{tot}$   | Total Power Dissipation at $T_C = 70^\circ\text{C}$                                                                                                              | 20            | W                |
| $T_{stg}$   | Storage Temperature                                                                                                                                              | - 40, + 150   | $^\circ\text{C}$ |
| $T_j$       | Junction Temperature                                                                                                                                             | 0, +150       | $^\circ\text{C}$ |

8179F-01.TBL

## THERMAL DATA

| Symbol        | Parameter                             | Value | Unit               |
|---------------|---------------------------------------|-------|--------------------|
| $R_{th(j-c)}$ | Junction-case Thermal Resistance Max. | 3     | $^\circ\text{C/W}$ |

8179F-02.TBL

## ELECTRICAL CHARACTERISTICS

(V<sub>7</sub> = 2.2V, V<sub>S</sub> = 42V, T<sub>A</sub> = 25 $^\circ\text{C}$ , unless otherwise specified)

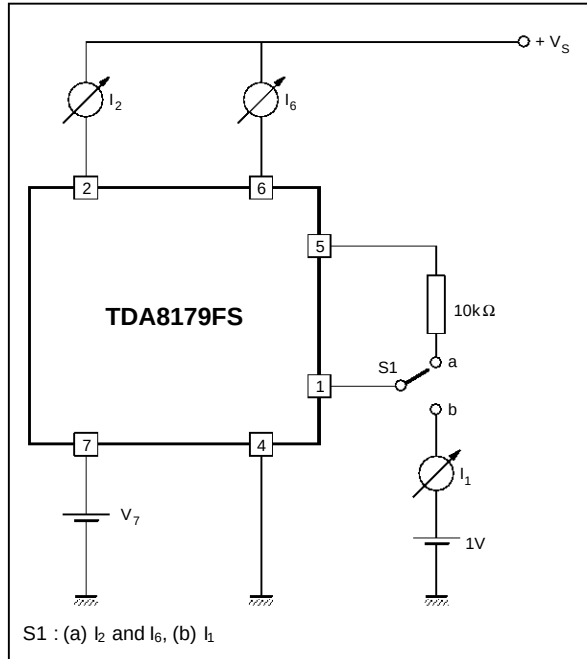
(refer to the test circuits - see Figure 1 next page)

| 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                   | $I_3 = 0$ $I_5 = 0$                                                                          |            | 20           | 40         | mA               |
| $I_1$      | Amplifier Bias Current                    | $V_1 = 1\text{V}$                                                                            |            | - 0.2        | - 1        | $\mu\text{A}$    |
| $V_5$      | Quiescent Output Voltage                  | $V_S = 42\text{V}$ $R_a = 3.9\text{k}\Omega$<br>$V_S = 35\text{V}$ $R_a = 5.6\text{k}\Omega$ | 23.4<br>17 | 24.2<br>17.8 | 25<br>18.5 | V                |
| $V_{5L}$   | Output Saturation Voltage to GND          | $I_5 = 1\text{A}$                                                                            |            | 1.2          | 1.5        | V                |
| $V_{5H}$   | Output Saturation Voltage to Supply       | - $I_5 = 1\text{A}$                                                                          |            | 2.2          | 2.6        | V                |
| $V_{D5-6}$ | Diode Forward Voltage between Pins 5-6    | $I_D = 1\text{A}$                                                                            |            | 1.5          | 3          | V                |
| $V_{D3-6}$ | Diode Forward Voltage between Pins 3-6    | $I_D = 1\text{A}$                                                                            |            | 1.5          | 3          | V                |
| $R_1$      | Input Resistance                          |                                                                                              |            | 200          |            | $\text{k}\Omega$ |
| $T_j$      | Junction Temperature for Thermal Shutdown |                                                                                              |            | 140          |            | $^\circ\text{C}$ |

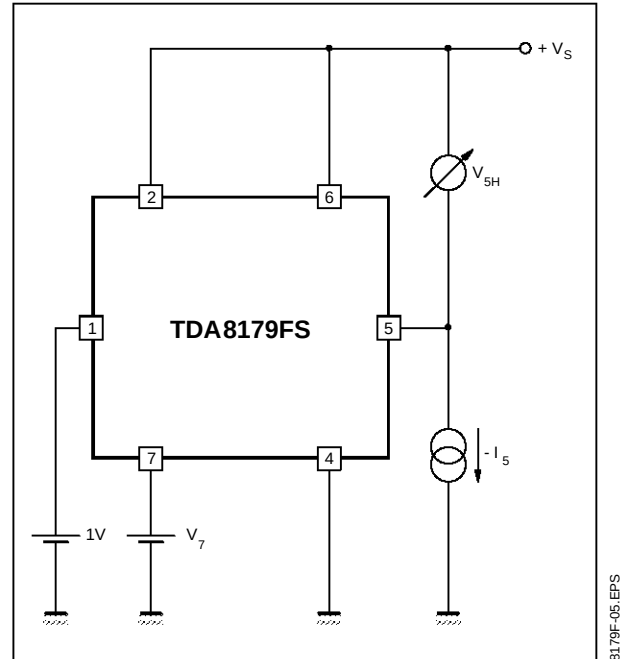
8179F-03.TBL

**FIGURE 1 : DC Test Circuits**

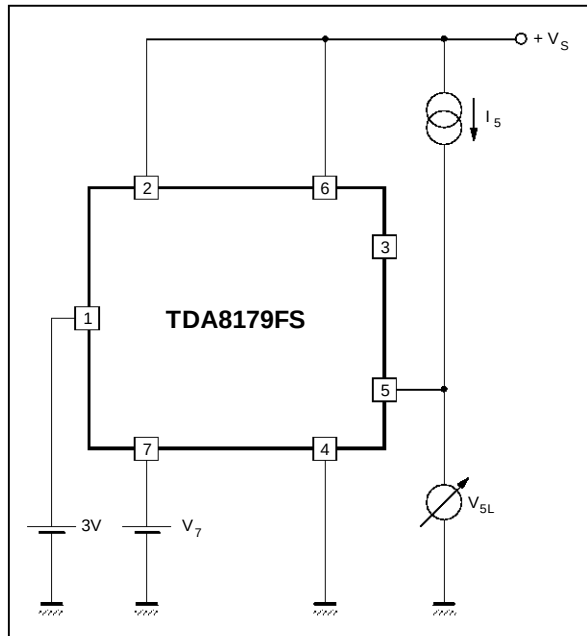
**Figure 1a : Measurement of  $I_1$ ,  $I_2$ ,  $I_6$**



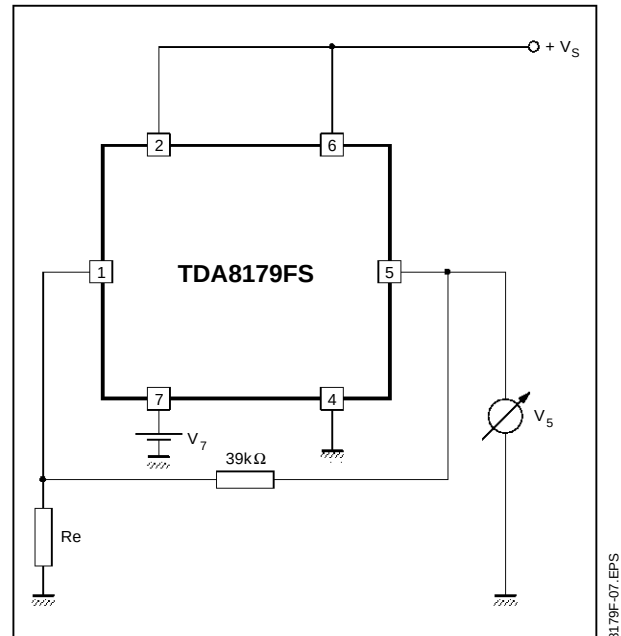
**Figure 1b : Measurement of  $V_{5H}$**

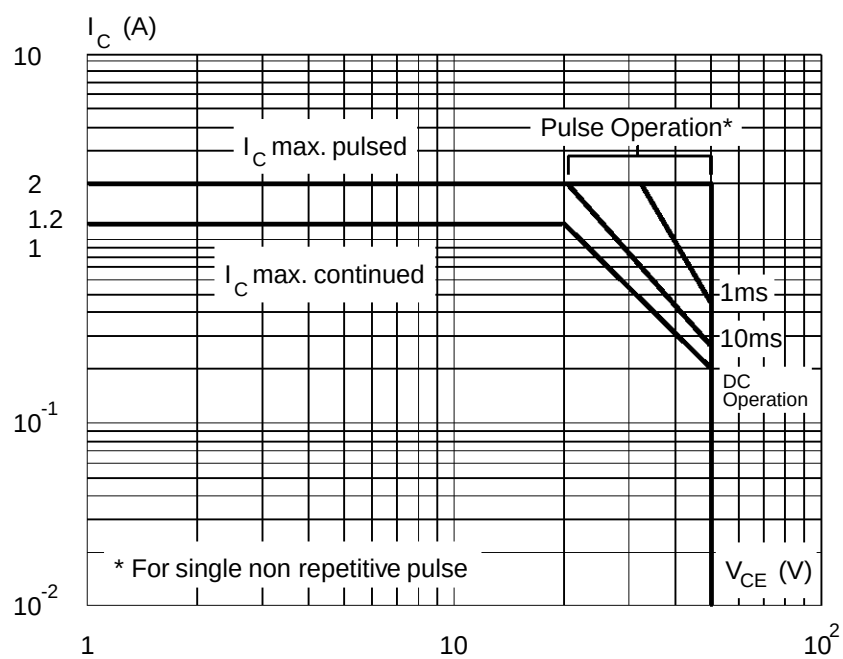


**Figure 1c : Measurement of  $V_{5L}$**



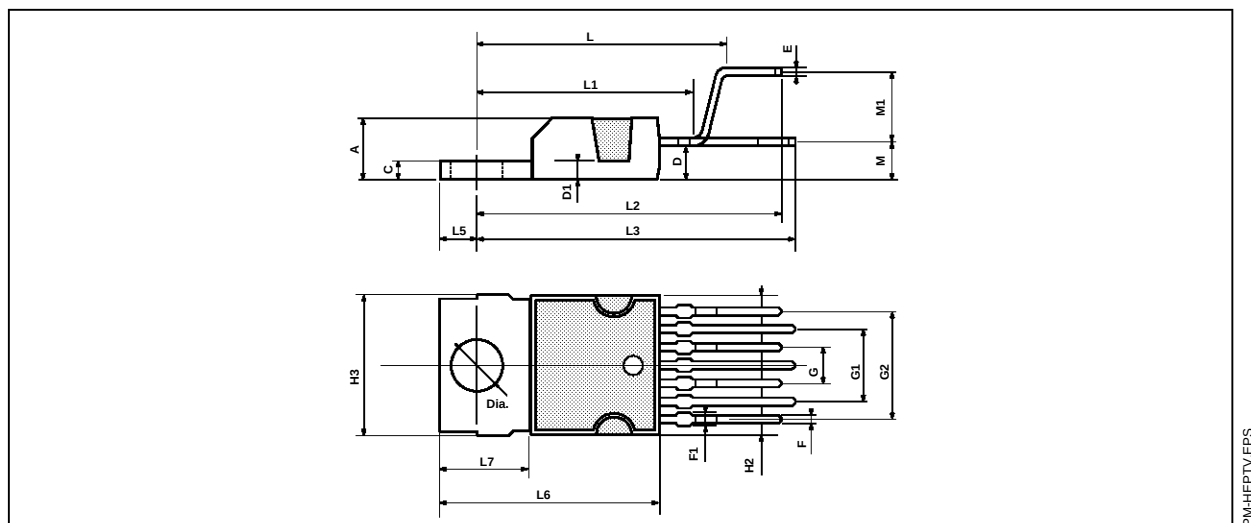
**Figure 1d : Measurement of  $V_5$**



**Figure 2** : SOA of Each Output Power Transistor at  $T_A = 25^\circ\text{C}$ 

8179F-08.EPS

### PACKAGE MECHANICAL DATA : HEPTAWATT



| 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 |

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