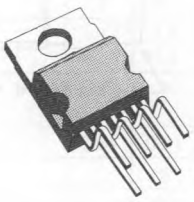
SGS-THOMSON MICROELECTRONICS

TDA8175

TV VERTICAL DEFLECTION OUTPUT CIRCUIT

- POWER AMPLIFIER
- FLYBACK GENERATOR
- AUTOMATIC PUMPING COMPENSATION
- THERMAL PROTECTION
- REFERENCE VOLTAGE



Heptawatt

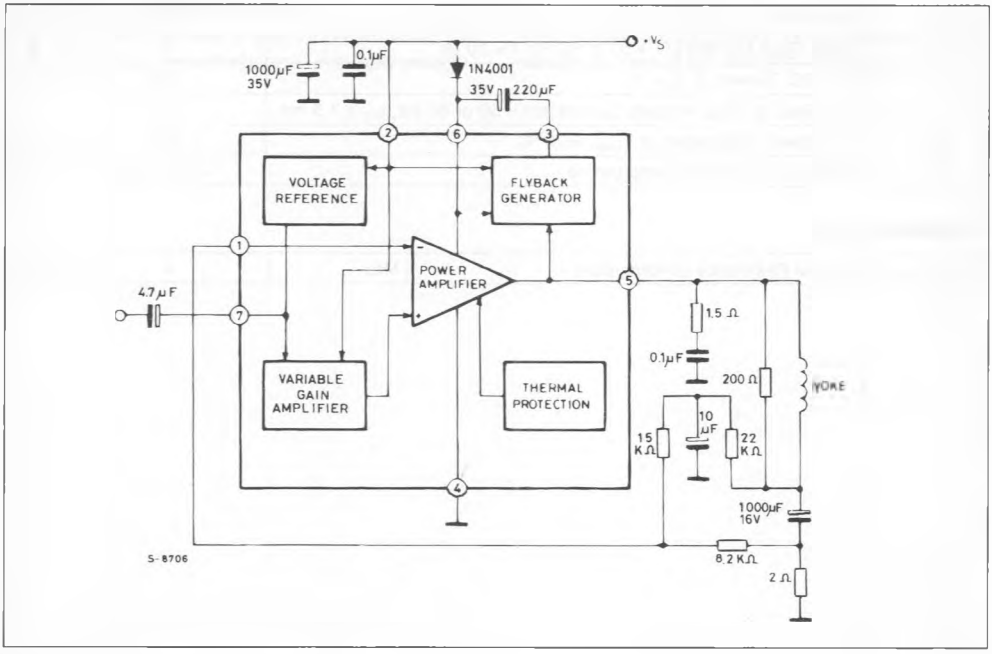
ORDER CODE : TDA8175

DESCRIPTION

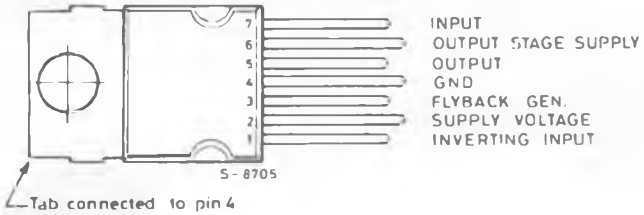
The TDA8175 is a monolithic integrated circuit in HEPTAWATT package. It is a high efficiency power booster for direct driving of vertical windings of TV yokes.

It is intended for use in Color and B & W television sets as well as in monitors and displays.

BLOCK DIAGRAM



CONNECTION DIAGRAM (top view)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage (pin 2)	35	V
V_5, V_6	Flyback Peak Voltage	60	V
V_3	Voltage at Pin 3	$+ V_s$	
V_{f1}, V_7	Amplifier Input Voltage	$+ V_s$	
I_o	Output Peak Current (non repetitive, t = 2 ms)	2.5	A
I_o	Output Peak Current at f = 50 or 60 Hz, $t \leq 10$ µs	3	A
I_o	Output Peak Current at f = 50 or 60 Hz, $t > 10$ µs	2	A
I_3	Pin 3 DC Current at $V_5 < V_2$	100	mA
I_3	Pin 3 Peak to Peak Flyback Current at f = 50 or 60 Hz, $t_{fly} \leq 1.5$ ms	3	A
P_{tot}	Total Power Dissipation at T_{case} = 70 °C	20	W
T_j, T_{stg}	Storage and Junction Temperature	– 40 to 150	°C

THERMAL DATA

$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	4	°C/W

ELECTRICAL CHARACTERISTICS (V_s = 35 V, T_{amb} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_2	Pin 2 Quiescent Current			18	36	mA
I_6	Pin 6 Quiescent Current			16	36	mA
I_1	Amplifier Input Bias Current	V_1 = 1 V		– 0.1	– 1	µA
V_3	Pin 3 Saturation to GND	I_3 = 20 mA		1	1.5	V
V_5	Quiescent Output Voltage	V_s = 35V R_a = 39 kΩ		19		V
V_5	Output Saturation Voltage to GND	I_5 = 1.2 A I_5 = 0.7 A		1 0.7	1.4 1	V V
V_5	Output Saturation Voltage to Supply	– I_5 = 1.2 A – I_5 = 0.7 A		1.6 1.3	2.2 1.8	V V
V_o	Ramp Amplitude Versus Voltage Supply	22 < V_s < 30 V		4		%/V
G	AC Gain	V_s = 26 V	0.54	0.61	0.67	V
V_o	DC Output Voltage Accuracy			8		%
V_7	Internal Bias			2.7		V
R_7	Input Resistance			50		kΩ
T_j	Junction Temperature for Thermal Shutdown			140		°C

THERMAL PROTECTION

The thermal protection circuit intervenes when the die temperature reaches 150 °C and turn off the output power device.

PUMPING COMPENSATION

The device incorporates a special preamplifier, the gain of which varies with changes in supply voltage. This function allows perfect compensation of height variations caused by changes in brightness.