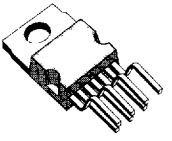
SGS-THOMSON MICROELECTRONICS

TDA8175

TV VERTICAL DEFLECTION OUTPUT CIRCUIT

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



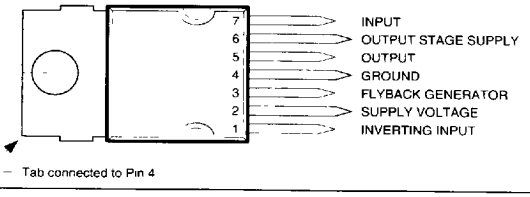
HEPTAWATT
(Plastic Package)

ORDER CODE : TDA8175

DESCRIPTION

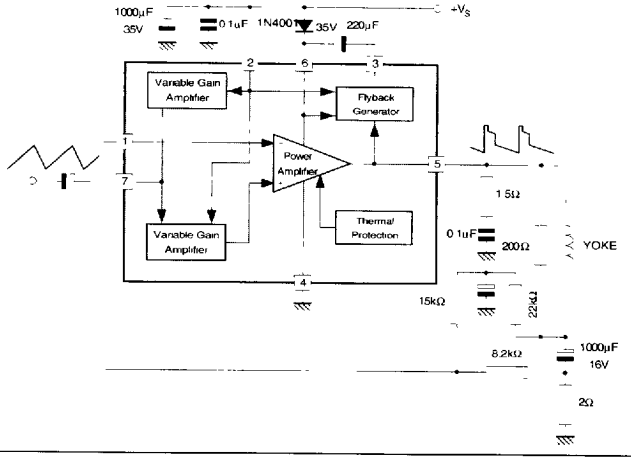
The TDA8175 is a monolithic integrated circuit in HEPTAWATT package. It is a high efficiency power booster for direct driving of vertical windings of TV yokes. It is intended for use in Color and B & W television sets as well as in monitors and displays.

PIN CONNECTIONS



8175 01 EPS

BLOCK DIAGRAM



8175 02 EPS

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_1, V_7	Amplifier Input Voltage	$+V_S$	
I_O	Output Peak Current (non-repetitive, t = 2ms)	2.5	A
I_O	Output Peak Current at : f = 50 or 60Hz, $t \leq 10\mu s$ f = 50 or 60Hz, $t > 10\mu s$	 3 2	 A A
I_3	Pin 3 DC Current at V5 < V2	100	mA
I_3	Pin 3 Peak-to-peak Flyback Current at f = 50 or 60Hz, $t_{fly} \leq 1.5ms$	3	A
P_{tot}	Total Power Dissipation at $T_{case} = 70°C$	20	W
T_j, T_{stg}	Storage and Junction Temperature	-40, +150	°C

8175-01 TBL

THERMAL DATA

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

8175-02 TBL

ELECTRICAL CHARACTERISTICS (V_S = 35V, 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 = 1V		-0.1	-1	µA
V_3	Pin 3 Saturation to GND	I_3 = 20mA		1	1.5	V
V_5	Quiescent Output Voltage	V_S = 35V, R_a = 39kΩ		19		V
V_5	Output Saturation Voltage to GND	I_5 = 1.2A I_5 = 0.7A		1 0.7	1.4 1	V V
V_5	Output Saturation Voltage to Supply	$-I_5$ = 1.2A $-I_5$ = 0.7A		1.6 1.3	2.2 1.8	V V
V_O	Ramp Amplitude versus Voltage Supply	22V < V_S < 30V		4		%/V
G	AC Gain	V_S = 26V	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

8175-03 TBL

THERMAL PROTECTION

The thermal protection circuit intervenes when the die temperatures reaches 150°C and turns-off the output power device.

PUMPING COMPENSATION

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