

TV VERTICAL DEFLECTION BOOSTER

ADVANCE DATA

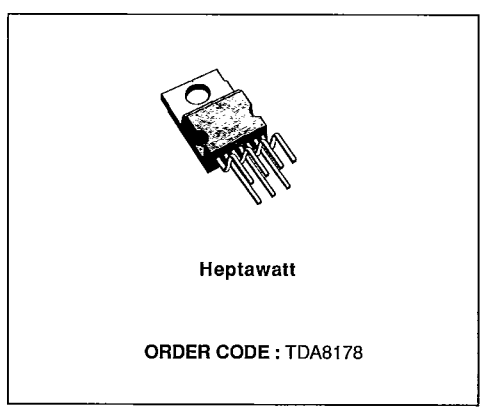
- POWER AMPLIFIER
- FLYBACK GENERATOR (105V PEAK)
- THERMAL PROTECTION
- REFERENCE VOLTAGE
- CURRENT LIMITED TO GND

DESCRIPTION

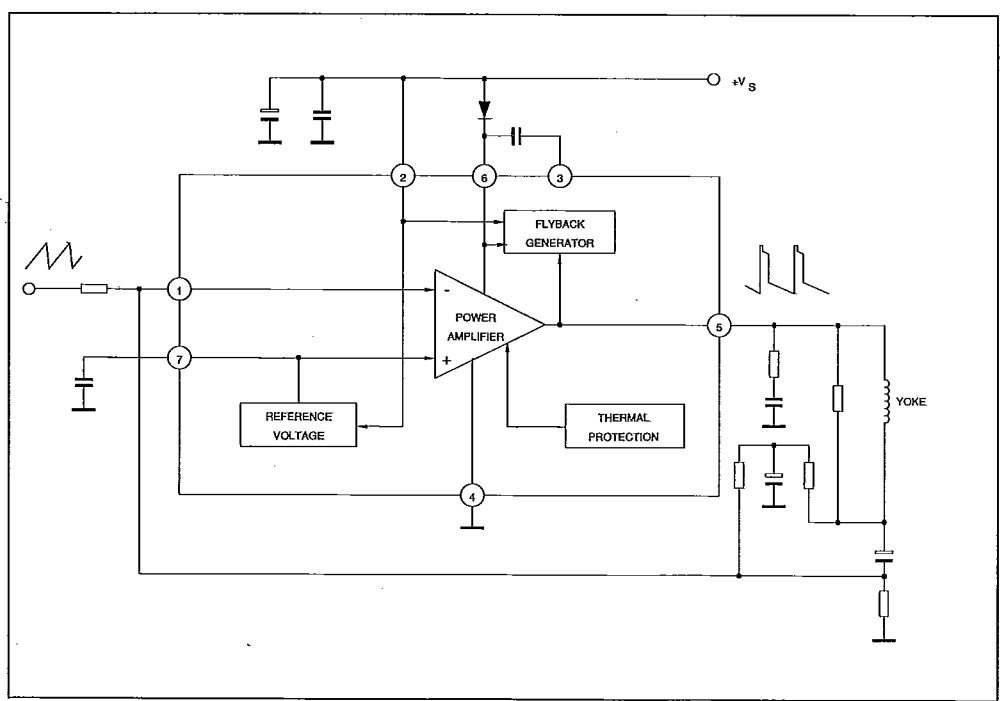
Designed for Monitors and high performance TVs, the TDA8178 vertical deflection booster delivers fly-back voltages up to 105V.

The TDA8178 operates with supplies up to 50V and provides up to 2App output current drive to yoke.

The TDA8178 is offered in HEPTAWATT package.



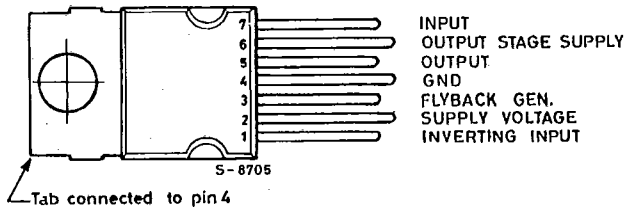
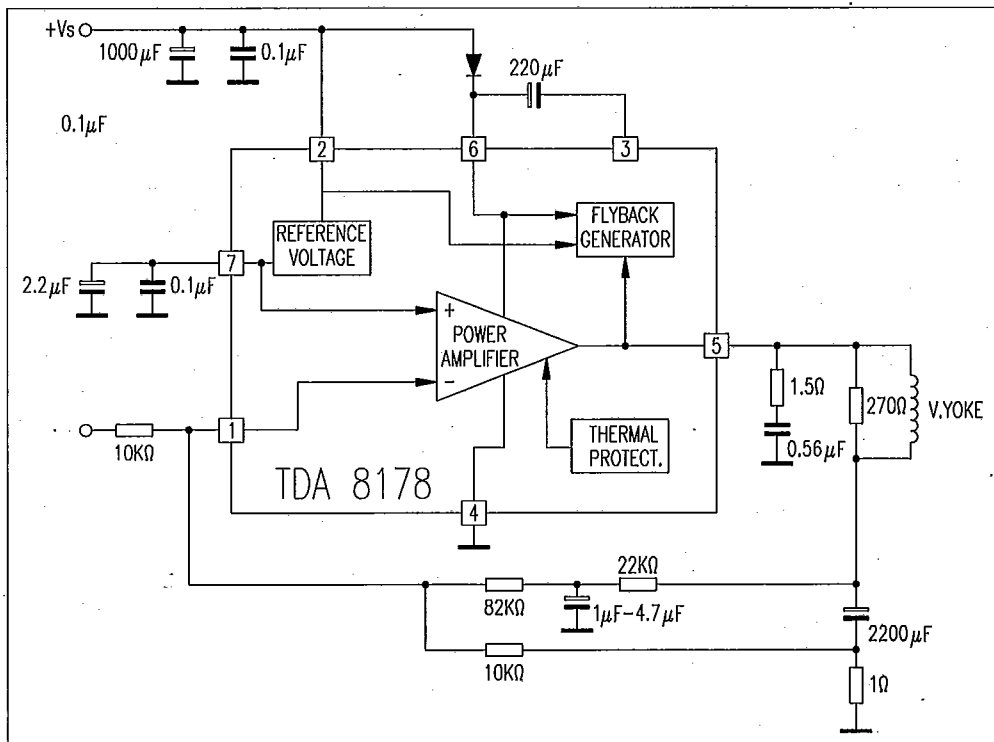
BLOCK DIAGRAM



PIN CONNECTION (top view)

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APPLICATION CIRCUIT ($V_S = 50V$)

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ELECTRICAL CHARACTERISTICS

(refer to the test circuits, $V_s = 48V$, $T_{amb} = 25^\circ C$, unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_s	Operating Supply Voltage Range		10		48	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	$V_1 = 1V$		- 0.2	- 1	μA
V_3	Pin 3 Saturation to GND	$I_3 = 20mA$		1.3	1.8	V
V_5	Quiescent Output Voltage	$V_s = 48V$ $R_a = 3.9K\Omega$		24.2		V
		$V_s = 35V$ $R_a = 5.6K\Omega$		17.5		V
V_{5L}	Output Saturation Voltage to GND	$I_5 = 1A$		1.2	1.5	V
V_{5H}	Output Saturation Voltage to Supply	$- I_5 = 1A$		2.2	2.6	V
V_{D5-6}	Diode Forward Voltage between Pins 5-6	$I_D = 1A$		1.5		V
V_{D3-2}	Diode Forward Voltage between Pins 3-2	$I_D = 1A$		1.5		V
V_7	Internal Reference		2.15	2.2	2.25	V
$\Delta V_7/\Delta V_s$	Reference Voltage Drift Versus V_s	$V_s = 10$ to $48V$		1	2	mV/V
K_T	Reference Voltage Drift Versus T_J	$K_T = \frac{\Delta V_7 \cdot 10^6}{\Delta T_J \cdot V_7}$ $T_J = 0$ to $125^\circ C$		100	150	ppm/ $^\circ C$
R_1	Input Resistance			200		$K\Omega$
T_J	Junction Temperature for Thermal Shutdown			140		$^\circ C$

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_s	Supply Voltage (pin 2)	50	V
V_5, V_6	Flyback Peak Voltage	105	V
V_1, V_7	Amplifier Input Voltage	$+ V_s$	
I_O	Output Peak Current (non repetitive, $t = 2ms$)	2	A
I_O	Output Peak Current at $f = 50$ or $60Hz$ $t \leq 10\mu s$	2	A
I_O	Output Peak Current at $f = 50$ or $60Hz$ $t > 10\mu s$	1.8	A
I_3	Pin 3 DC at $V_5 < V_2$	100	mA
I_3	Pin 3 Peak Flyback Current at $f = 50$ or $60Hz$, $t_{fly} \leq 1.5ms$	1.8	A
P_{tot}	Total Power Dissipation at $T_{case} = 70^\circ C$	20	W
T_{stg}	Storage Temperature	- 40 to 150	$^\circ C$
T_J	Junction Temperature	0 to 150	$^\circ C$

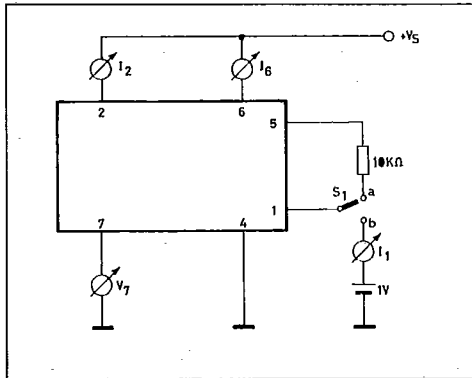
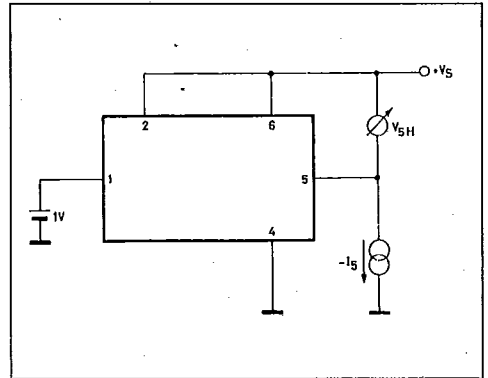
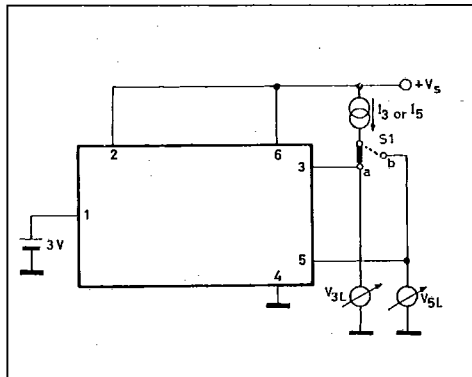
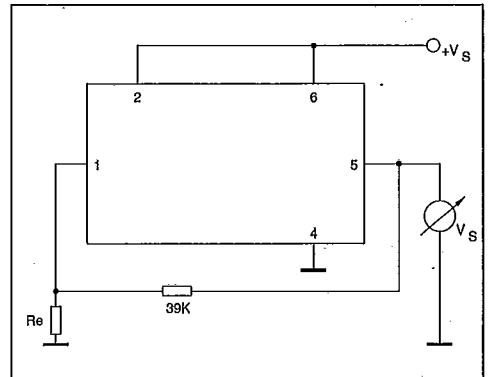
THERMAL DATA

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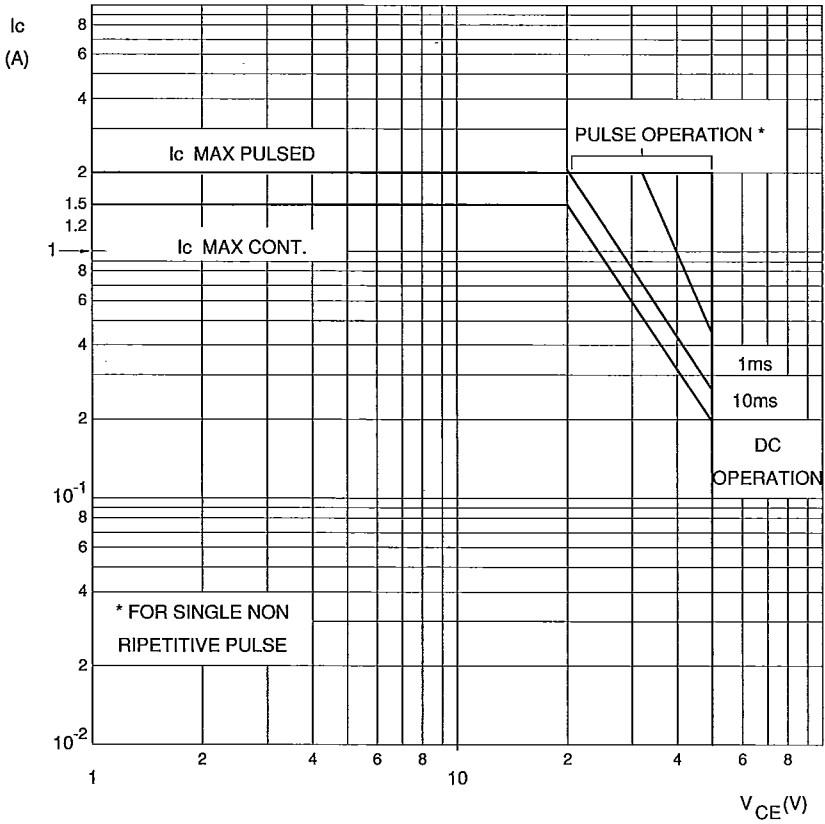
$R_{th\ j-c}$	Junction-case Thermal Resistance	Max	3	$^{\circ}C/W$
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Figure 1 : DC Test Circuits.

Figure 1a : Measurement of I_1 ; I_2 ; I_6 ; V_7 ; $\Delta V_7/\Delta V_S$.S1 : (a) I_2 and I_6 ; (b) I_7 .Figure 1b : Measurement of V_{5H} .Figure 1c : Measurement of V_{3L} , V_{5L} .S1 : (a) V_{3L} ; (b) V_{5L} .Figure 1d : Measurement of V_5 .

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Figure 2 : SOA of Each Output Power Transistor at 25°C amb.



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