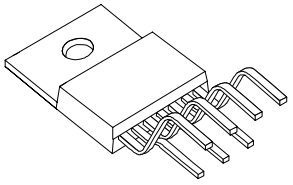
T8172 **LINEAR INTEGRATED CIRCUIT**

VERTICAL DEFLECTION OUTPUT CIRCUIT



TO-220Z7

*Pb-free plating product number: T8172L

■ DESCRIPTION

The UTC **T8172** is a monolithic integrated circuit and designed for Color and B/W TV, Monitors and Displays application. The IC is a differential input, single ended output amplifier with a flyback generator. It is intended to directly drive vertical windings of deflection coils with high efficiency.

■ FEATURES

* Power Amplifier
* Thermal Protection Circuit
* Flyback Generator
* Low cross-over distortion

■ APPLICATIONS

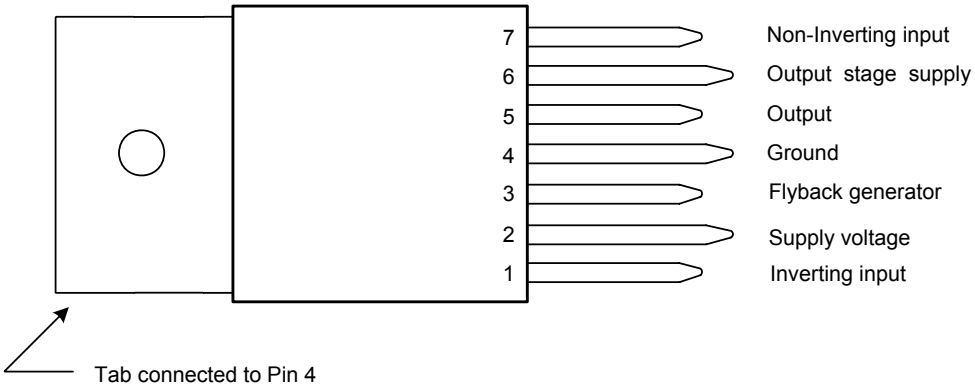
* Vertical deflection for monitors and TVs

■ ORDERING INFORMATION

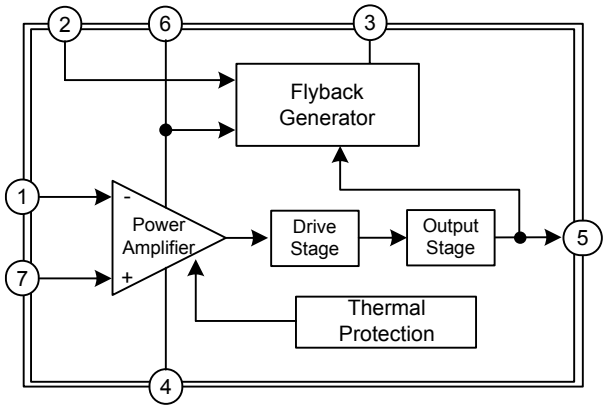
Order Number		Package	Packing
Normal	Lead Free Plating		
T8172-TB7-T	T8172L-TB7-T	TO-220Z7	Tube

T8172L-TB7-T (1)Packing Type (2)Package Type (3)Lead Plating	(1) T: Tube (2) TB7: TO-220Z7 (3) Lead Free Plating, Blank: Pb/Sn

■ PIN CONFIGURATIONS



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage (pin 2)	V_{CC}	35	V
Flyback Peak Voltage	V_5, V_6	60	V
Voltage at Pin 3	V3	+ V_{CC}	
Amplifier Input Voltage	V_1, V_7	+ V_{cc} – 0.5	V
Output Peak Current (non repetitive, t = 2 ms)	$I_{O(PEAK)}$	2.5	A
Output Peak Current (f = 50 or 60 Hz, t ≤ 10 us)	$I_{O(PEAK)}$	3	A
Output Peak Current (f = 50 or 60 Hz, t > 10 us)	$I_{O(PEAK)}$	2	A
Pin 3 DC Current at V_5 <V_2	I_3	100	mA
Pin 3 Peak to Peak Flyback Current (f = 50 or 60 Hz, t_{fb} ≤ 1.5 ms)	I_3	3	A
Total Power Dissipation (T_C = 90 °C)	P_D	20	W
Junction Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-40~+150	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

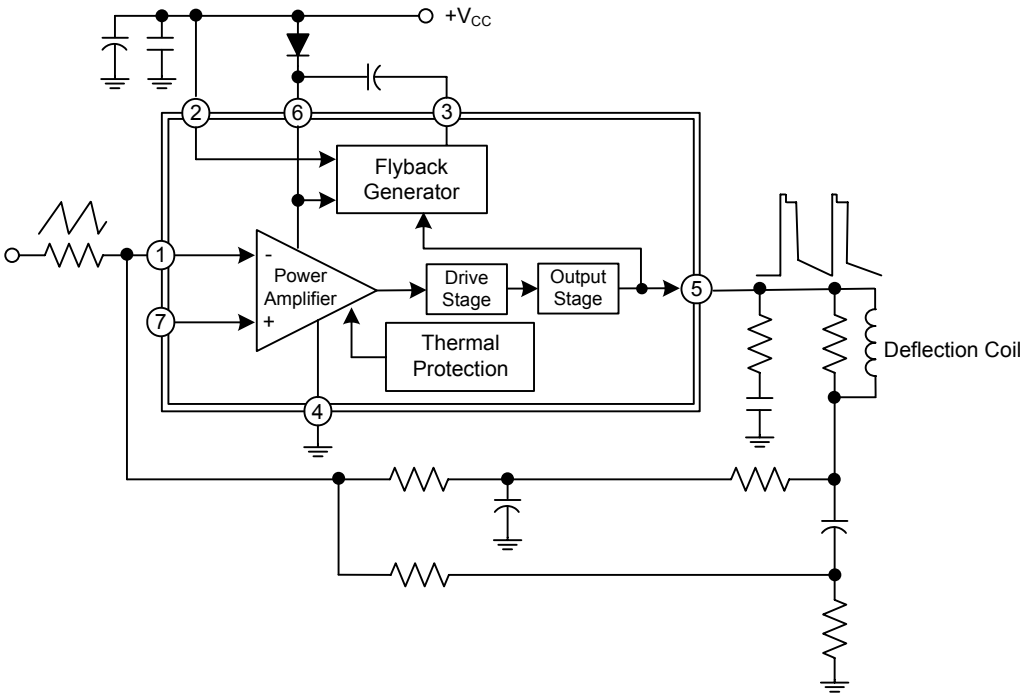
■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Thermal Resistance Junction-Case	θ_{JC}	3	°C/W

■ ELECTRICAL CHARACTERISTICS (T_a = 25°C, V_{CC} = 35V, unless otherwise specified)

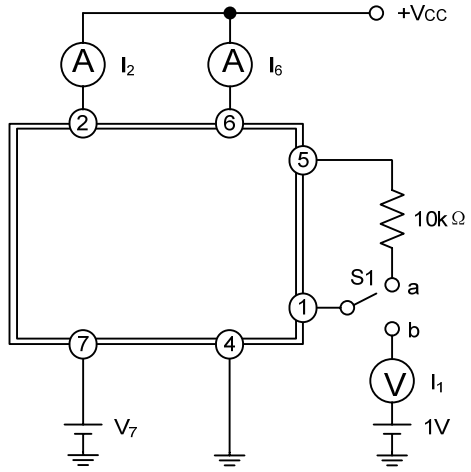
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Pin 2 Quiescent Current	I_2	I_3 =0, I_5 =0		8	16	mA
Pin 6 Quiescent Current	I_6	I_3 =0, I_5 = 0		16	36	mA
Amplifier Input Bias Current	I_1	V_1 = 1V, V_7 = 2V		-0.1	-1	μA
		V_1 = 2V, V_7 = 1V		-0.1	-1	μA
Pin 3 Saturation Voltage to GND	V_{3L}	I_3 = 20mA		1	1.5	V
Quiescent Output Voltage	V_5	V_{CC} = 35V, Ra =39kW		18		V
Output Saturation Voltage to GND	V_{5L}	I_5 = 1.2A		1	1.4	V
		I_5 = 0.7A		0.7	1	V
Output Saturation Voltage to Supply	V_{5H}	-I_5 = 1.2A		1.6	2.2	V
		-I_5 = 0.7A		1.3	1.8	V
Thermal Shutdown Junction Temperature	T_J			140		°C

■ APPLICATION CIRCUIT



■ TEST CIRCUIT

FOR DC Test Circuit



S_1 : (a) I_2 and I_6 ; (b) I_1

Figure 1. Measurement of I_1 ; I_2 ; I_6

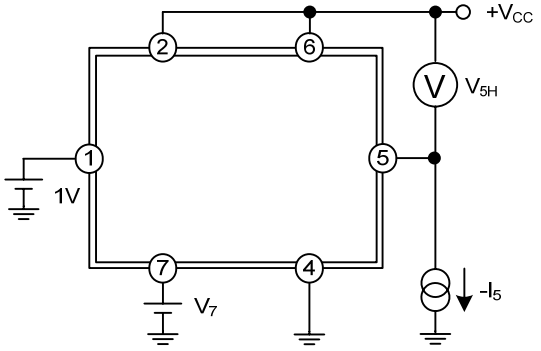
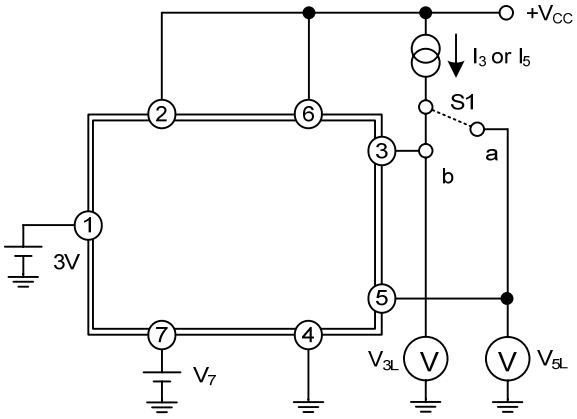


Figure 2. Measurement of V_{5H}



S_1 : (a) V_{3L} ; (b) V_{5L}

Figure 3. Measurement of V_{3L} ; V_{5L}

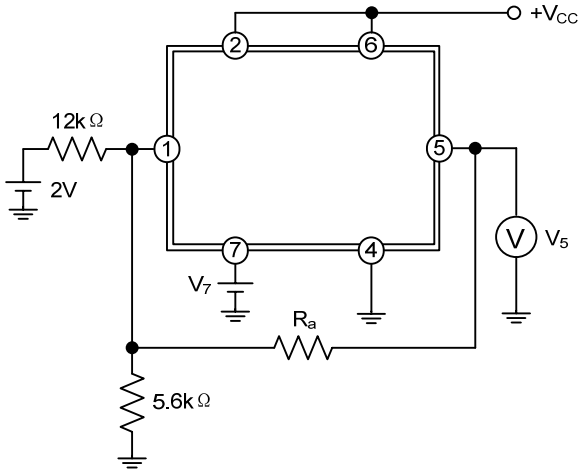


Figure 4. Measurement of V_5