



## T8172

## LINEAR INTEGRATED CIRCUIT

### VERTICAL DEFLECTION OUTPUT CIRCUIT

#### 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

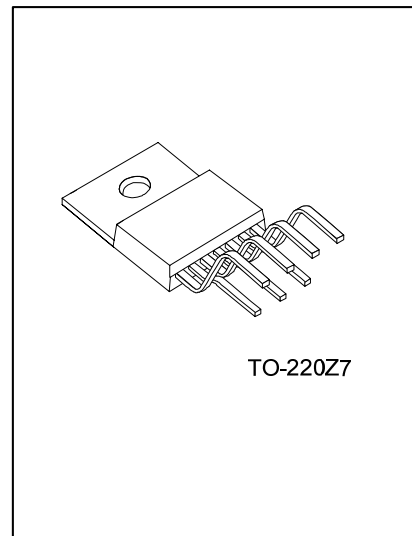
- \* Power Amplifier
- \* Thermal Protection Circuit
- \* Flyback Generator
- \* Low cross-over distortion

#### APPLICATIONS

- \* Vertical deflection for monitors and TVs

#### ORDERING INFORMATION

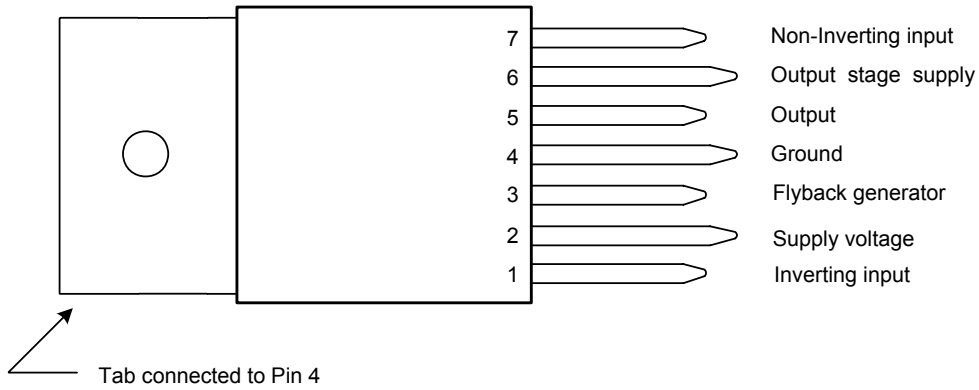
Order Number		Package	Packing
Normal	Lead Free Plating		
T8172-TB7-T	T8172L-TB7-T	TO-220Z7	Tube



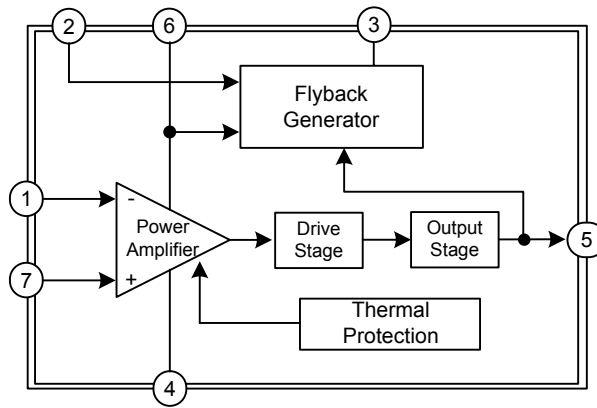
\*Pb-free plating product number: T8172L

<p>T8172L-TB7-T</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) T: Tube (2) TB7: TO-220Z7 (3) Lead Free Plating, Blank: Pb/Sn</p>
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## ■ 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	$V_3$	+ $V_{CC}$	
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, $t \leq 10$ 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, $t_{fb} \leq 1.5$ 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.

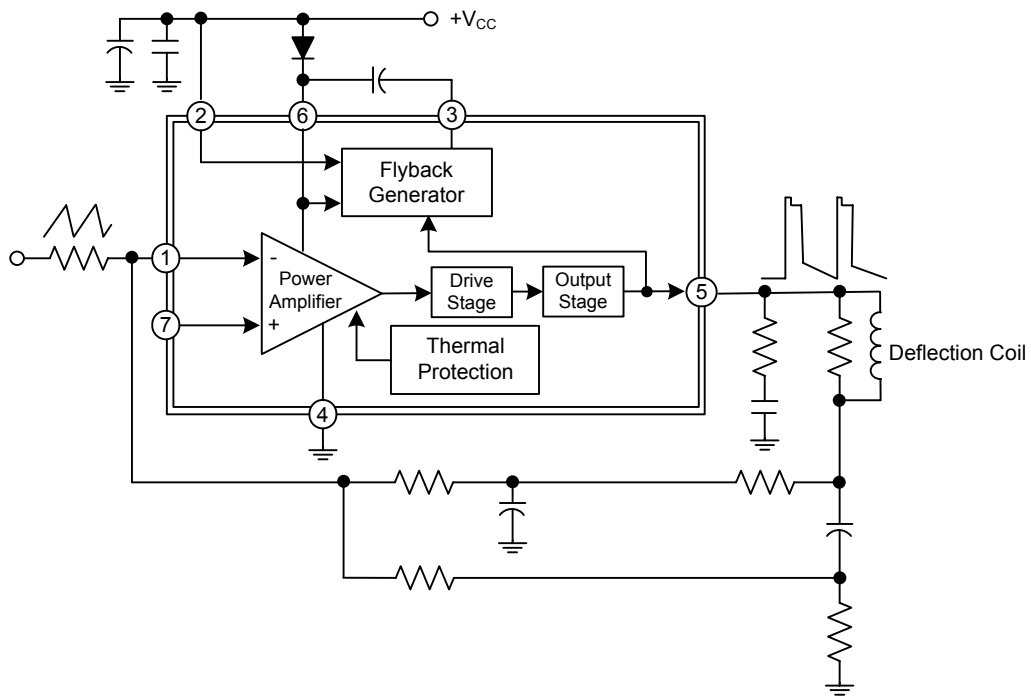
■ THERMAL DATA

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

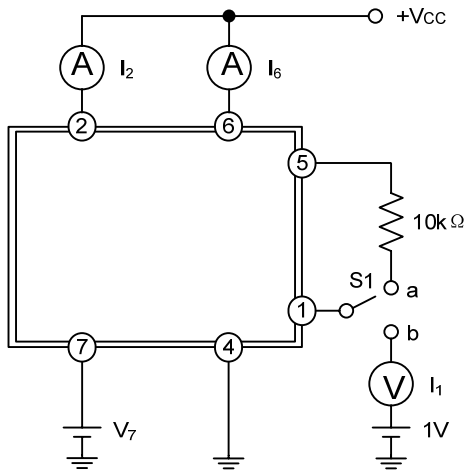
■ ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 35\text{V}$ , unless otherwise specified)

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	$I_1$	$V_1 = 1\text{V}, V_7 = 2\text{V}$		-0.1	-1	$\mu\text{A}$
		$V_1 = 2\text{V}, V_7 = 1\text{V}$		-0.1	-1	$\mu\text{A}$
Pin 3 Saturation Voltage to GND	$V_{3L}$	$I_3 = 20\text{mA}$		1	1.5	V
Quiescent Output Voltage	$V_5$	$V_{CC} = 35\text{V}, R_a = 39\text{k}\Omega$		18		V
Output Saturation Voltage to GND	$V_{5L}$	$I_5 = 1.2\text{A}$		1	1.4	V
		$I_5 = 0.7\text{A}$		0.7	1	V
Output Saturation Voltage to Supply	$V_{5H}$	$-I_5 = 1.2\text{A}$		1.6	2.2	V
		$-I_5 = 0.7\text{A}$		1.3	1.8	V
Thermal Shutdown Junction Temperature	$T_J$			140		°C

## ■ APPLICATION CIRCUIT



■ TEST CIRCUIT  
FOR DC Test Circuit



S1 : (a)  $I_2$  and  $I_6$  ; (b)  $I_1$   
Figure 1. Measurement of  $I_1$  ;  $I_2$  ;  $I_6$

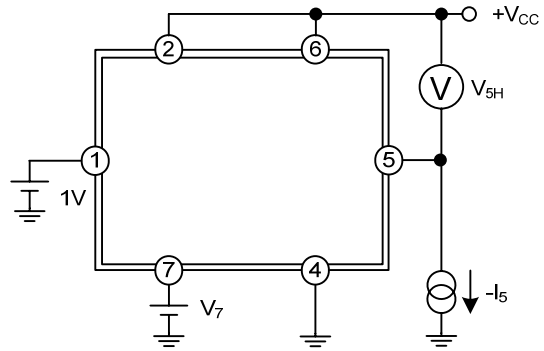
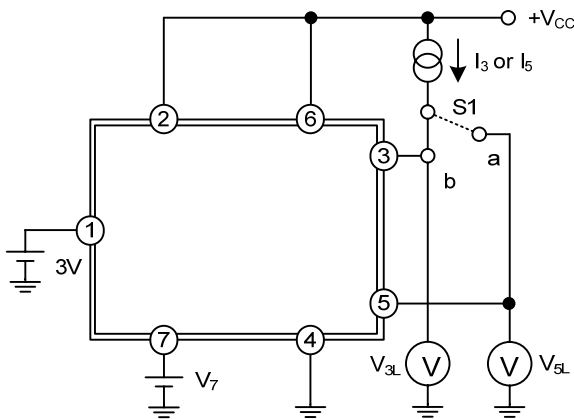


Figure 2. Measurement of  $V_{5H}$



S1 : (a)  $V_{3L}$  ; (b)  $V_{5L}$   
Figure 3. Measurement of  $V_{3L}$  ;  $V_{5L}$

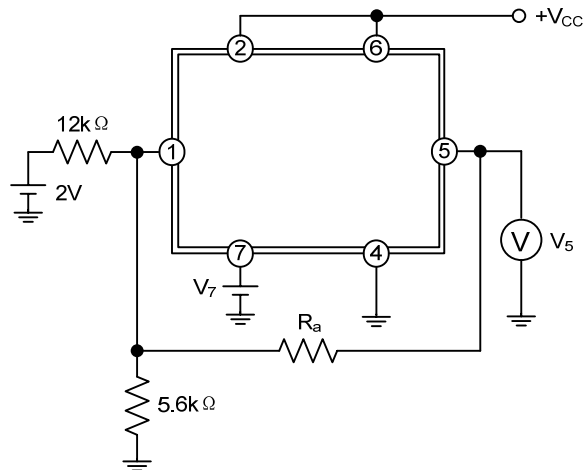


Figure 4. Measurement of  $V_5$

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