



## A2804

## LINEAR INTEGRATED CIRCUIT

### ZERO VOLTAGE SWITCH

#### DESCRIPTION

The UTC **A2804** is a TRIAC controller providing a complete solution for temperature controlled electric panel heaters, cookers, film processing baths etc.

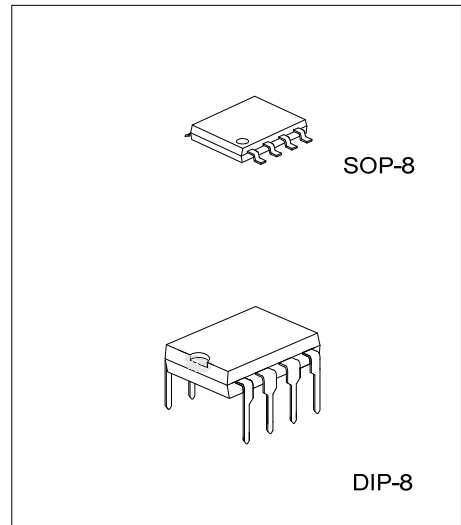
Switching occurs at the zero voltage point in order to minimize radio frequency interference. The device is suitable for mains-on-line operation and requires minimal components.

#### FEATURES

- \*Easy operation either through the AC line or a DC supply.
- \*Supply voltage control.
- \*Very few external components.
- \*Symmetrical burst control-No DC current components in the load circuit
- \*Negative output current pulse up to 250mA-short circuit protection.
- \*Reference voltage output

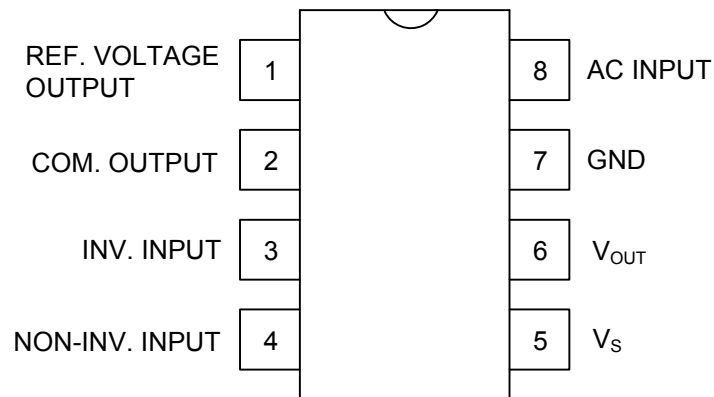
#### ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
A2804L-D08-T	A2804G-D08-T	DIP-8	Tube
A2804L-S08-R	A2804G-S08-R	SOP-8	Tape Reel
A2804L-S08-T	A2804G-S08-T	SOP-8	Tube

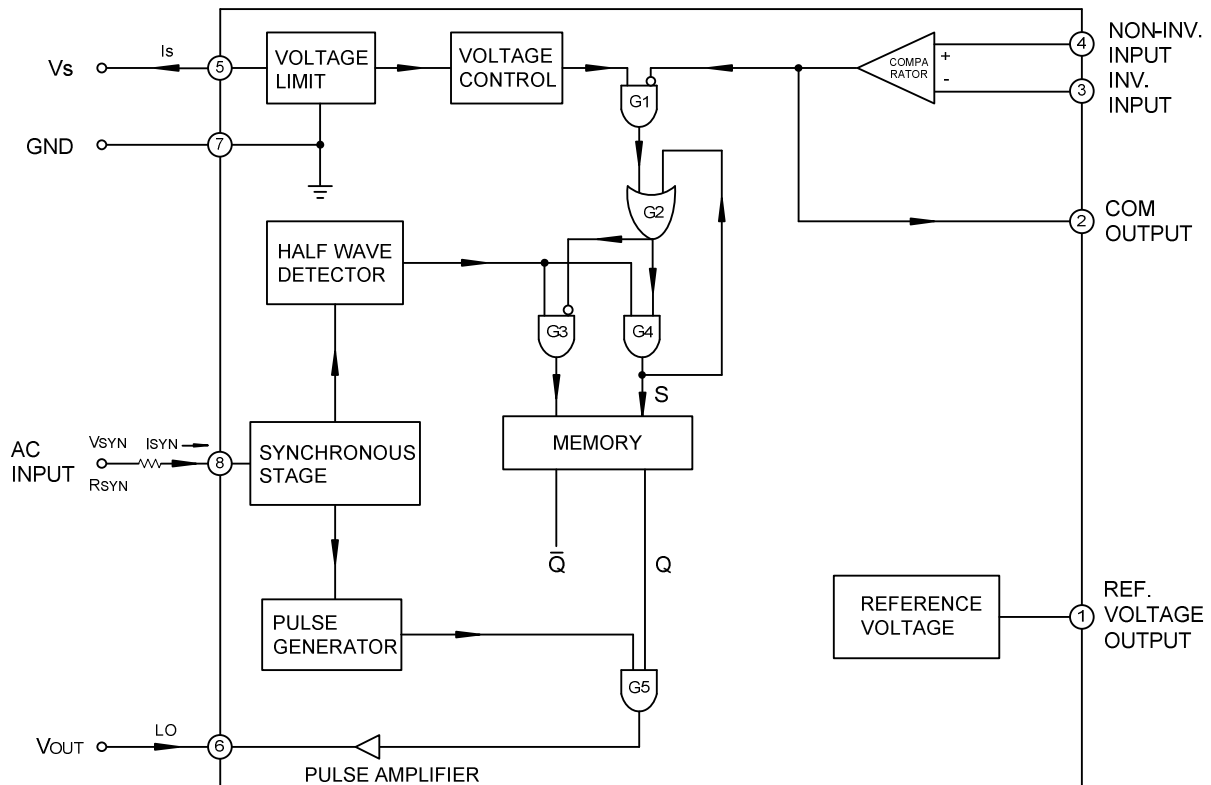


<p>A2804L-D08-T</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) G: Halogen Free, L: Lead Free</p>
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## ■ PIN CONFIGURATION



## ■ BLOCK DIAGRAM



■ **ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified.)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$-V_S$	8.2	V
Input Voltage	$V_{IN}$	$\leq IV_{SI}$	V
Supply Current	$-I_S$	40 <sub>(AVERAGE)</sub>	mA
Synchronous Current	$I_{SYN}$	5.0 <sub>(RMS)</sub>	mA
Power Dissipation	$P_D$	350	mW
Junction Temperature	$T_J$	125	$^{\circ}\text{C}$
Operating Ambient Temperature	$T_{OPR}$	-20 ~ +70	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-65 ~ +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

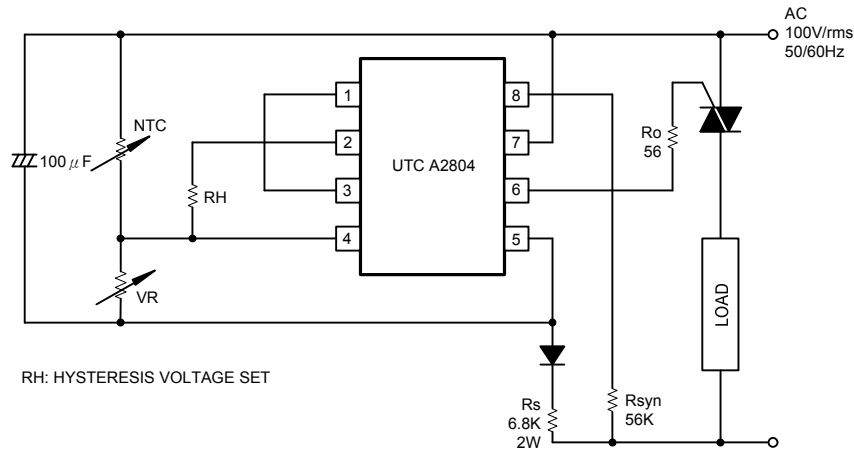
Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ **ELECTRICAL CHARACTERISTICS** ( $V_S=8.0\text{V}$ ,  $V_{SYN}=100 \sim 115\text{V}_{RMS}$ ,  $T_A=25^{\circ}\text{C}$ ,  $f=50/60\text{Hz}$ )

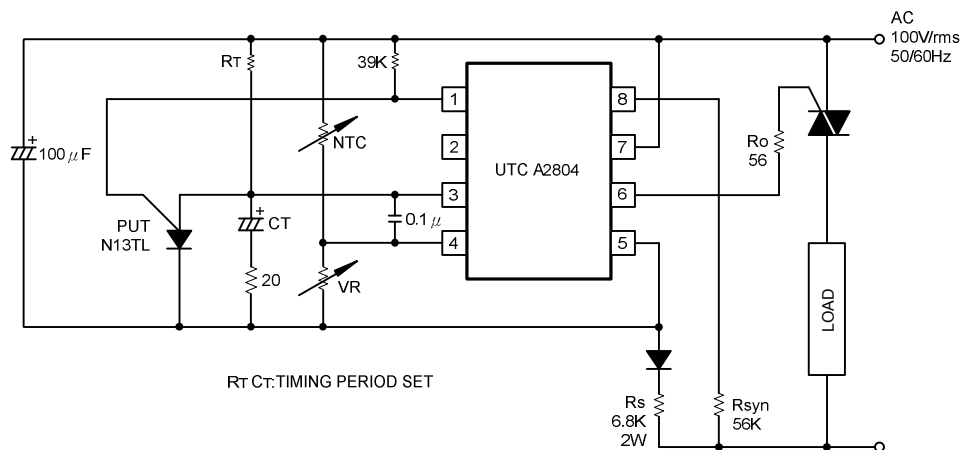
PARAMETER	SYMBOL	PIN NO.	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}$	6	$I_{OUT} \leq 150\text{mA}$	4.2	5.2	7.0	V
Input Offset Voltage	$V_{I(OFF)}$	3, 4			2.0	$\pm 5.0$	mV
Supply Voltage 1	$-V_{S1}$	5	$I_S=2.5\text{mA}$ , $R_{SYN}=56\text{K}$	7.2		8.4	V
Supply Voltage 2	$-V_{S2}$	5	$I_S=20\text{mA}$ , $R_{SYN}=56\text{K}$	8		8.9	V
Common Mode Input Voltage	$-V_{I(CM)}$	3, 4		0		5.7	V
Reference Voltage	$-V_R$	1	$I_R \leq 1\mu\text{A}$		3.6		V
Circuit Current	$-I_S$	5	$R_{SYN}=56\text{K}$	1.0	2.0	3.0	mA
Synchronous Current	$I_{SYN}$	8		0.3			mA
Output Current	$I_{OUT}$	6	$R_{OUT} \leq 25$	150	180		mA
Output Leakage Current	$I_{LO}$	6				$\pm 2.0$	$\mu\text{A}$
Input Bias Current	$I_{I(BIAS)}$	3, 4			0.5	$\pm 1.0$	$\mu\text{A}$
Output Leakage Current	$I_{LC}$	2				$\pm 0.2$	$\mu\text{A}$
Output Pulse Width	$T_{PULSE}$	6	$R_{SYN}=56\text{K}$	150	200	250	$\mu\text{s}$

## ■ TYPICAL APPLICATIONS

### ON-OFF TEMPERATURE CONTROL



### TIME PROPORTIONAL TEMPERATURE CONTROL



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