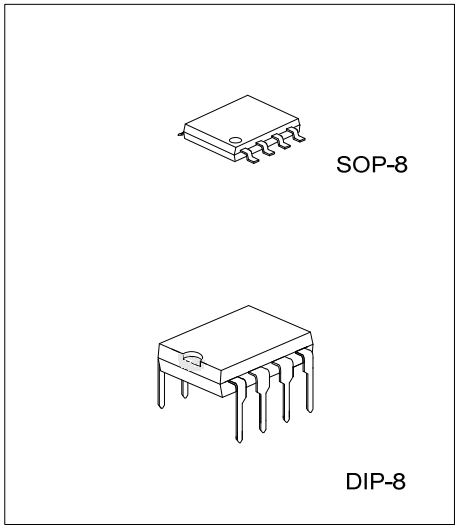
# A2804

*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

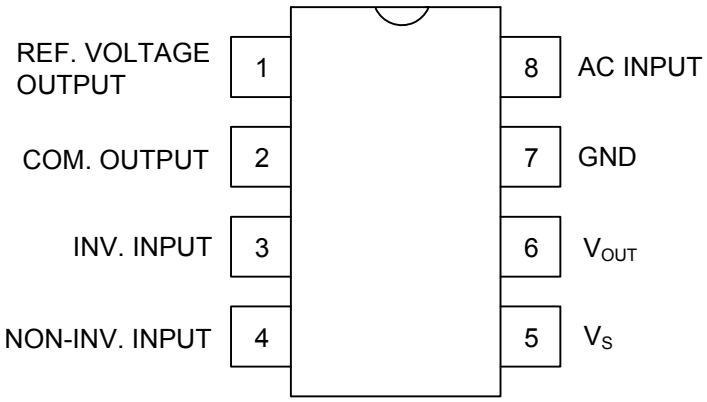
## ■ ORDERING INFORMATION

| 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 |

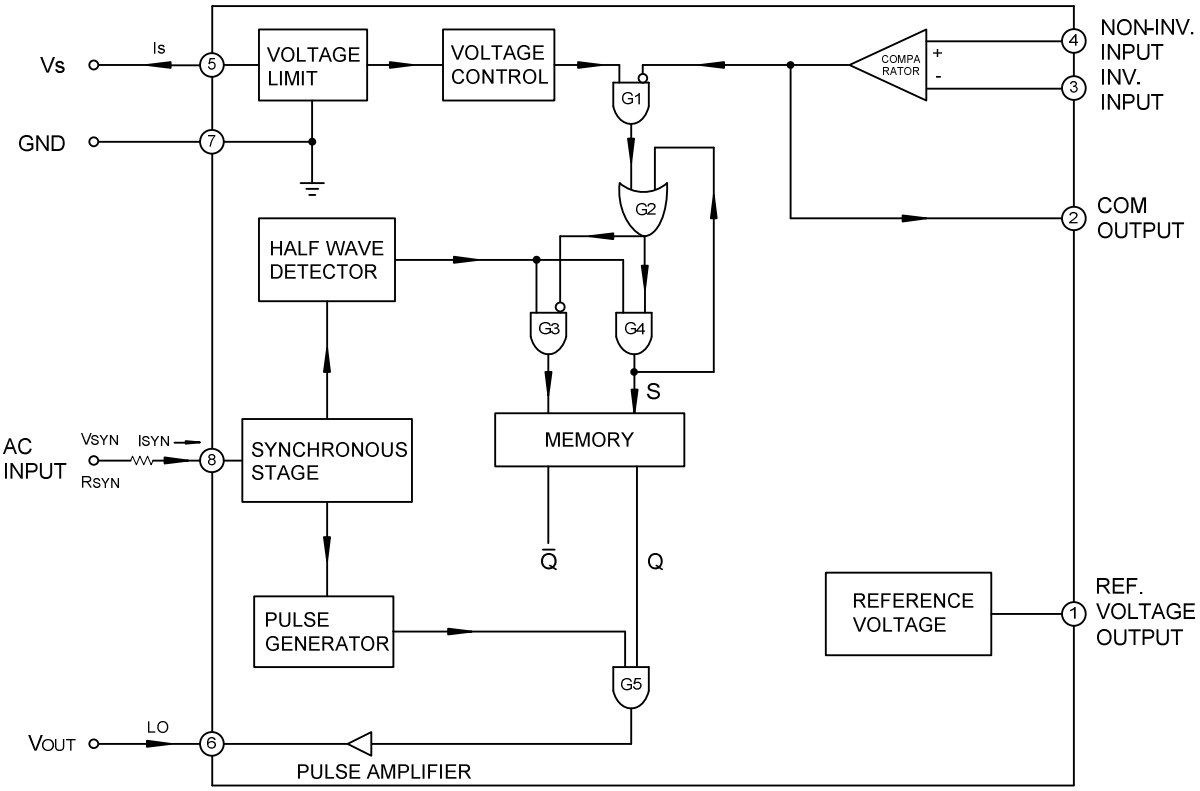
A2804L-D08-T
(1) Packing Type
(2) Package Type
(3) Lead Free

(1) T: Tube, R: Tape Reel
(2) D08: DIP-8, S08: SOP-8
(3) G: Halogen Free, L: Lead Free

## ■ PIN CONFIGURATION




## ■ BLOCK DIAGRAM



## ■ ABSOLUTE MAXIMUM RATINGS ($T_A$=25℃, unless otherwise specified.)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Supply Voltage | -Vs | 8.2 | V |
| Input Voltage | $V_{IN}$ | ≤ $IV_{SI}$ | V |
| Supply Current | -Is | $40_{(AVERAGE)}$ | mA |
| Synchronous Current | $I_{SYN}$ | $5.0_{(RMS)}$ | mA |
| Power Dissipation | $P_D$ | 350 | mW |
| Junction Temperature | $T_J$ | 125 | °C |
| Operating Ambient Temperature | $T_{OPR}$ | -20 ~ +70 | °C |
| Storage Temperature | $T_{STG}$ | -65 ~ +150 | °C |

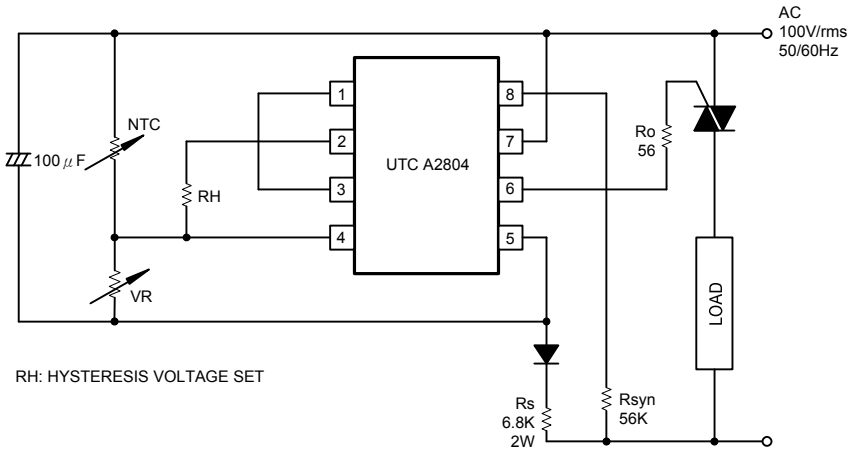
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

## ■ ELECTRICAL CHARACTERISTICS ($V_S$=8.0V, $V_{SYN}$=100 ~ 115$V_{RMS}$, $T_A$=25℃, f=50/60Hz)

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

## ■ TYPICAL APPLICATIONS

ON-OFF TEMPERATURE CONTROL




TIME PROPORTIONAL TEMPERATURE CONTROL