

UC34163

LINEAR INTEGRATED CIRCUIT

DC TO DC CONVERTER CONTROLLER

DESCRIPTION

The UTC **UC34163** is a monolithic regulator subsystem, intended for use as DC-to-DC converter. This device contains a temperature compensated reference, 2 comparators, a duty-cycle control oscillator, driver and high current output switch.

FEATURES

- * Maximum input voltage is 35V.
- * Low standby current.
- * Output switch current to 1.5A.
- * Frequency of operation from 100Hz ~ 100kHz.
- * Step-down switch regulators.

ORDERING INFORMATION

| Ordering | Deekege | Deaking | | |
|----------------|----------------|---------|-----------|--|
| Lead Free | Halogen Free | Package | Packing | |
| UC34163L-D08-T | UC34163G-D08-T | DIP-8 | Tube | |
| - | UC34163G-S08-R | SOP-8 | Tape Reel | |



| DIP-8 | SOP-8 | | |
|--------------------------------------------------------|---------------------------------------------------------------|--|--|
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 8 7 6 5 UTC□□□□ UC34163G • □□ 1 2 3 4 Lot Code | | |

Gwww.flying1688.com



UC34163

LINEAR INTEGRATED CIRCUIT

■ PIN CONFIGURATION



BLOCK DIAGRAM





ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

| PARAMETER | | SYMBOL | RATINGS | UNIT |
|-------------------------------------|-------|----------------------------------|------------|------|
| Supply Voltage | | V _{CC} | 35 | V |
| Comparator Input Voltage Range | | V _{IN(COMP)} -0.3 ~ +35 | | V |
| Switch Collector Voltage | | V _{C(SW)} | 35 | V |
| Switch Emitter Voltage | | V _{E(SW)} | 35 | V |
| Switch Collector To Emitter Voltage | | V _{CE(SW)} | 35 | V |
| Output Switch Current | | I _{OUT} | 1.5 | А |
| Power Dissipation (Ta=25°C) | DIP-8 | P _D | 1250 | mW |
| | SOP-8 | | 625 | mW |
| Operating Junction Temperature | | TJ | +125 | °C |
| Operating Temperature | | T _{OPR} | -20 ~ +85 | °C |
| Storage Temperature | | TSTG | -40 ~ +150 | °C |

Notes: 1. Absolute maximum ratings are those values beyond which the device which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. The device is guaranteed to meet performance specification within 0°C ~+70°C operating temperature range and assured by design from -20°C ~+85°C, characteristic and correlation with static process control.

THERMAL DATA

| PARAMETER | | SYMBOL | RATINGS | UNIT | |
|------------------|-------|----------------------------------|---------|-------|--|
| Junction to Case | DIP-8 | 0IP-8 60P-8 θ _{JC} - | 100 | *0144 | |
| | SOP-8 | | 160 | C/W | |

ELECTRICAL CHARACTERISTICS (T_A=25°C, V_{CC} = 5.0V, T_A=0~70°C, unless otherwise specified.)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------|------|------|--------|----------|
| Oscillator | | | | | | |
| Frequency (C _T =470pF, T _A =25°C) | Fosc | | 25 | 35 | 45 | kHz |
| Charging Current | I _{CHG} | V _{CC} =5 ~ 35V, T _A =25°C | 20 | 30 | 40 | μA |
| Discharging Current | I _{DISCHG} | V _{CC} =5 ~ 35V, T _A =25°C | 140 | 200 | 260 | μA |
| Oscillator Amplitude | Vosc | T _A =25°C | | 0.8 | | V |
| Discharge to Charge Current Ratio | К | T _A =25°C | 5.2 | | 8.0 | |
| Output Switch | | | - | | | |
| Saturation Voltage 1(Note) | V _{CE(SAT)} | I _{SW} =1.0A | | | 1.4 | V |
| Collector Off State Current (Note) | I _{C(OFF)} | V _{CE} =35.0V, T _A =25°C | | 0.01 | 100 | μA |
| ADJ | | | - | | | |
| Current limit Sense Voltage | V _{SENSE} | | 280 | 300 | 360 | mV |
| Comparator | | | - | | | |
| Threshold Voltage 1 | V _{THD1} | | 1.21 | 1.24 | 1.29 | V |
| Threshold Voltage 2 | V _{THD2} | | 280 | 300 | 360 | mV |
| Threshold Voltage Line Regulation | $	riangle V_{THD1}$ | V _{CC} =5 ~ 35V | | 2.0 | 5.0 | mV |
| Input Bias Current | I _{BIAS} | V _{IN} =0V | | 50 | 400 | nA |
| Total Device | | | | | | |
| Supply Current | Icc | V _{CC} =5 ~ 35V, C _T =470pF V ₆ =GND, V ₇ >V _{THD1} | | 2.5 | 4.0 | mA |
| Note: Output switch tests are performed under pulsed conditions to minimize power dissipation. | | | | | | |
| | CN | 新国标志有1688.co NW.flying1688.co | | | | |
| UNISONIC TECHNOLOGIES | CO., LTD | | | | | 3 of 4 |
| www.unisonic.com.tw | - | | | | QW-R10 |)3-037.D |

UC34163

LINEAR INTEGRATED CIRCUIT

TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.

