



## UL66C

Preliminary

CMOS IC

### HIGH ACCURACY LINEAR CONSTANT CURRENT LED DRIVER

#### DESCRIPTION

The UTC **UL66C** is a linear constant current IC with a built-in power MOSFET. The output current can be adjusted from 5mA to 60mA, and constant current accuracy up to  $\pm 4\%$ . The application scheme is simple and the cost is low. This device also incorporates temperature compensation and thermal shutdown functions.

#### FEATURES

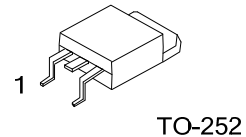
- \* 5mA ~ 60mA Output Current
- \* Up to  $\pm 4\%$  Constant Current Accuracy
- \* No EMC Problem
- \* Temperature Compensate
- \* Thermal Shutdown

#### ORDERING INFORMATION

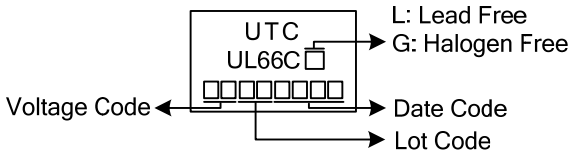
| Ordering Number |                 | Package | Packing   |
|-----------------|-----------------|---------|-----------|
| Lead Free       | Halogen Free    |         |           |
| UL66CL-xx-TN3-R | UL66CG-xx-TN3-R | TO-252  | Tape Reel |

Note: xx: Output Voltage, refer to Marking Information.

|                 |  |  |
|-----------------|--|--|
| UL66CG-xx-TN3-R | (1)Packing Type<br>(2)Package Type<br>(3)Output Voltage Code<br>(4)Green Package | (1) R: Tape Reel<br>(2) TN3: TO-252<br>(3) xx: Refer to Marking Information<br>(4) L: Lead Free, G: Halogen Free and Lead Free |
|-----------------|--|--|



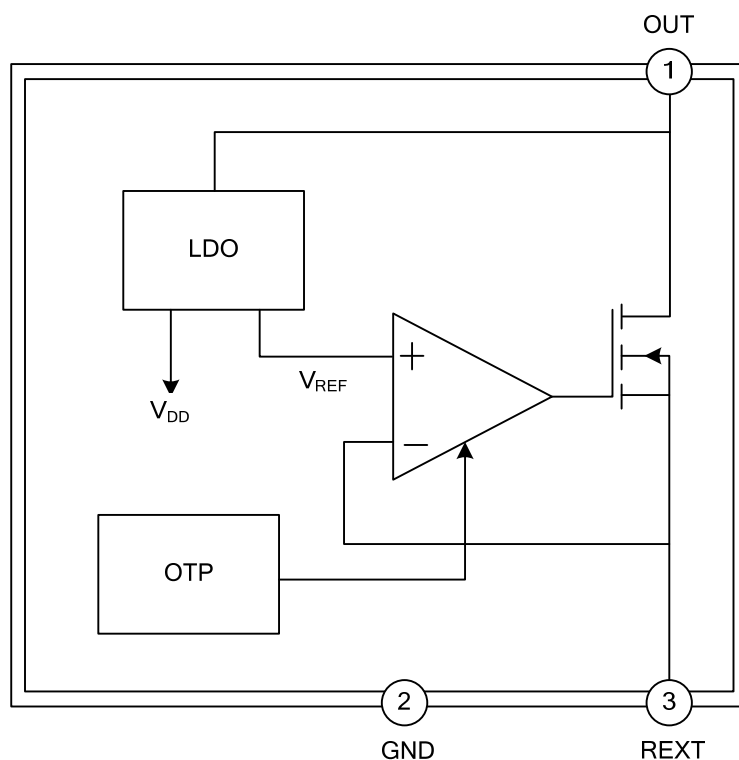
### MARKING INFORMATION

| PACKAGE | VOLTAGE CODE | MARKING   |
|---------|--------------|---|
| TO-252  | 06: 0.6V     |  <p>UTC<br/>UL66C</p> <p>Voltage Code</p> <p>L: Lead Free<br/>G: Halogen Free</p> <p>Date Code<br/>Lot Code</p> |

### PIN DESCRIPTION

| PIN NO. | PIN NAME | DESCRIPTION                 |
|---------|----------|-----------------------------|
| 1       | OUT      | Current Output Pin.         |
| 2       | GND      | Ground.                     |
| 3       | REXT     | Output Current Setting Pin. |

### BLOCK DIAGRAM



# ■ ABSOLUTE MAXIMUM RATING

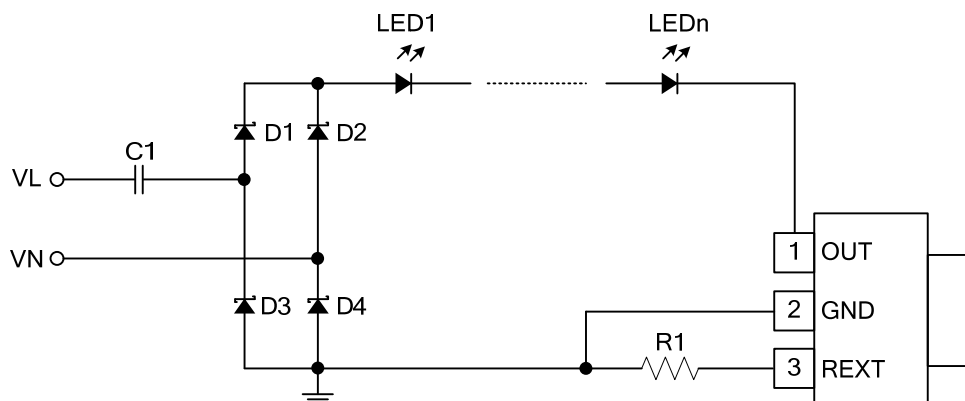
| PARAMETER                      | SYMBOL    | RATINGS    | UNIT |
|--------------------------------|-----------|------------|------|
| OUT Pin Voltage                | $V_{OUT}$ | -0.5 ~ 450 | V    |
| OUT Pin Current                | $I_{OUT}$ | 5 ~ 60     | mA   |
| Operating Junction Temperature | $T_{OPT}$ | -40 ~ +150 | °C   |
| Storage Junction Temperature   | $T_{STG}$ | -50 ~ +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

| PARAMETER                    | SYMBOL     | TEST CONDITIONS                         | MIN | TYP     | MAX  | UNIT |
|------------------------------|------------|---|-----|---------|------|------|
| OUT Pin Voltage              | $V_{OUT}$  | $I_{OUT}=30\text{mA}$                   | 6.5 |         |      | V    |
| OUT Pin Withstanding Voltage |            | $I_{OUT}=0$                             | 450 |         |      | V    |
| Output Current               | $I_{OUT}$  |   | 5   |         | 60   | mA   |
| Quiescent Current            | $I_Q$      | $V_{OUT}=10\text{V}$ REXT No Collection |     | 0.16    | 0.25 | mA   |
| REXT Pin Voltage             | $V_{REXT}$ | $V_{OUT}=10\text{V}$                    |     | 0.6     |      | V    |
| Output Current Error         |            | $I_{OUT}=5\sim 60\text{mA}$             |     | $\pm 4$ |      | %    |
| Temperature Compensate Point | $T_{CP}$   |   |     | 140     |      | °C   |

■ TYPICAL APPLICATION CIRCUIT



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