

CL0116 Solar LED Lamp Controller

GENERAL DESCRIPTION

CL0116 is a solar LED lamp controller with one battery, in which solar-charging and LED-driving sections are included: the former can help to detect voltage on the solar cell, control the charging process and prevent the reversely charging from battery to solar cell etc; the later has the functions of detecting status of battery, producing 100KHz pulse-train, being in standby mode manually and limiting the peak driving current etc. Only an external inductor is needed to construct a booster-type switching power supply with over 90% of charging efficiency and driving efficiency. CL0116 has the advantages of high efficiency, low power dissipation, low minimum operating voltage 0.8V and realizing the charging and LED-driving functions automatically etc.

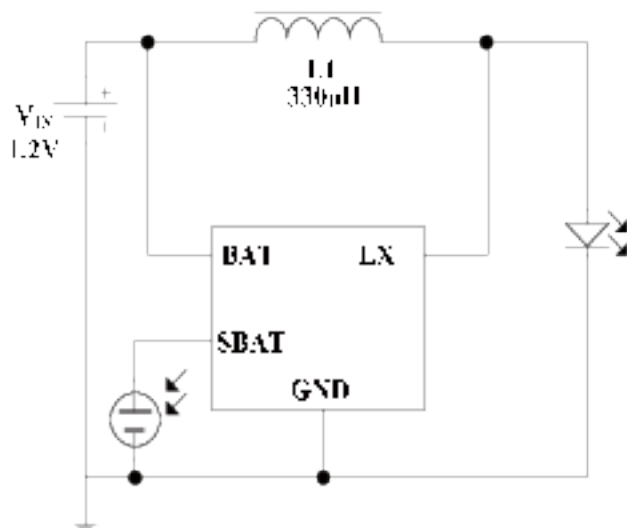
FEATURES

- Only an external inductor
- Operating range is 0.8V~3.0V
- Driving current is 10mA~100mA
- Maximum driving efficiency is 90 %
- Package TO94

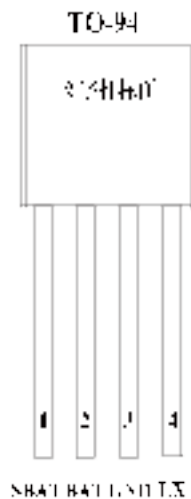
ABSOLUTE MAXIMUM RATINGS

| SYMBOL | ITEMS | VALUE | UNIT |
|-----------|--------------------------------------|----------|------|
| V_{MAX} | Maximum voltage of each pin | 5 | V |
| I_{MAX} | LX maximum current | 0.8 | A |
| T_{OPR} | Operation Junction Temperature Range | -40~+125 | °C |
| T_{STG} | Storage Temperature | -60~+150 | °C |
| V_{ESD} | ESD Susceptibility | 2000 | V |

TYPICAL APPLICATIONS



PIN ASSIGNMENT



PIN DESCRIPTIONS

| PIN NO. | PIN NAMES | DESCRIPTION |
|---------|-----------|-------------------------------------|
| 1 | SBAT | the positive terminal of solar cell |
| 2 | BAT | Supply voltage terminal |
| 3 | GND | Ground |
| 4 | LX | Output terminal |

ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Min. | Typ. | Max. | Unit |
|----------|------------------------------|------|------|------|------|
| VDD | Input voltage | 0.8 | | 3.0 | V |
| Vsld_th | Turn-on threshold | 120 | 135 | 150 | mV |
| Vsld_hys | Turn-on threshold hysteresis | | 300 | | mV |
| Fosc | Switching Frequency | | 100 | | KHz |