Overview:
QX5252 is a solar LED lighting fixtures for ASIC design. It is driven by a switching circuit, Optical switch circuit, over discharge protection circuit, the internal integration of Short Based diodes and other circuit. Can be only one external inductor Composition of solar lighting devices. QX5252 QX5252 using patented technology, LED
Undervoltage shutdown makes no blinking LED lights.

## Features:

Operating voltage: $0.9 \mathrm{~V}-1.5 \mathrm{~V}$
Output current: $3 \mathrm{~mA}-300 \mathrm{~mA}$
Patented over-discharge protection: no flash off
Integrated light control switch
Integrated Schottky Diode
Only one inductor external components
High efficiency
TO-94, DIP-8 package

Package:
QX5252F: TO-94
QX5252E: DIP-8

A typical application


A typical application II


## Pin Definition

| Pin name | Package and pin number |  | Functional Description |
| :--- | :--- | :--- | :--- |
|  | TO-94 | DIP-8 |  |
| SBAT | 1 | 6 | Positive terminal <br> connected solar cells |
| BAT | 2 | 7 | Rechargeable battery <br> positive terminal <br> connection |
| VSS | 3 | 2 | Ground |
| LX | 4 | 3 | Power switch drain |
| LS | - | 5 | Optical detection input |
| NC | - | $1,4,8$ | Not connected (empty) |



## Limit Parameter

| Symbol | Parameter | Value | Units |
| :--- | :--- | :--- | :--- |
| Vmax | Threshold voltage of the <br> terminal IC | 5.5 V | V |
| Imax | LX-side current limit | 0.8 A | A |
| $\mathrm{~T}_{\text {OPR }}$ | Operating temperature <br> range | $-40-+125$ | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{T}_{\text {STG }}$ | Storage Temperature | $-65-+150$ | ${ }^{\circ} \mathrm{C}$ |
| $\mathrm{V}_{\text {ESD }}$ | ESD voltage (Human <br> Body Model $)$ | 2000 V | V |

LED power settings:
LED power consumption is set by the inductance L: $\quad P_{L E D}=\frac{2 V I N}{L} 10^{-6}$
One VIN is charging the battery voltage.

Light control switch set:
QX5252F: directly controlled by the solar panels.
QX5252E: LS side need to add a photosensitive resistor and a normal resistance.
LS voltage is set by the following formula:

$$
V L S=\frac{R 1}{R 1+R 2} V I N
$$

When VLS is higher than 0.3 * VIN, the light control switch shuts the LED off, when VLS is lower than 0.22 * VIN, the light control switches LED lights on.

| Voltage | 1.3 V | 1.3 V | 1.3 V | 1.3 V | 1.3 V | 1.3 V | 1.3 V | 1.3 V | 1.3 V |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| L | 330 uH | 270 uH | 220 uH | 150 uH | 100 uH | 82 uH | 56 uH | 47 uH | 33 uH |
|  | 11 mA | 14.5 mA | 15.5 mA | 25 mA | 34.5 mA | 38 mA | 50 mA | 75 mA | 110 mA |

TO-94
Unit: mm(inch)


## 8-pin plastic DIP (300mil)



