YX8253

Tap 3 Functions + SOS Function Flashlight LED Driver IC

OVERVIEW

YX8253 is a LED driver IC for switching functions with a flick of a switch, which can directly drive 1-5W LEDs.
It can directly drive 1-5WLED, adopts very small SOT23-6 package, only one capacitor is needed, and can be used to drive 1-5WLED.
This saves PCB space and system cost. Three dry cell batteries or one lithium battery can drive 1-5W LEDs.
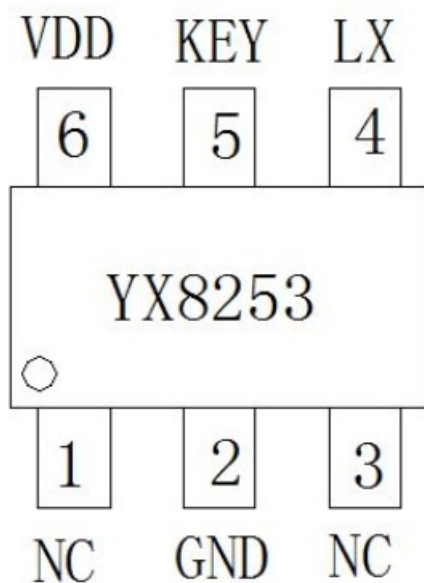The LEDs are controlled by flick switches for different functions.

FEATURES

- 3 cycle modes: full brightness, 25% brightness, blinking (8HZ)
- Press and hold the switch for 3S to switch to SOS mode
- Operating voltage: 2.5V to 5V
- Efficiency up to 92%.

Applications

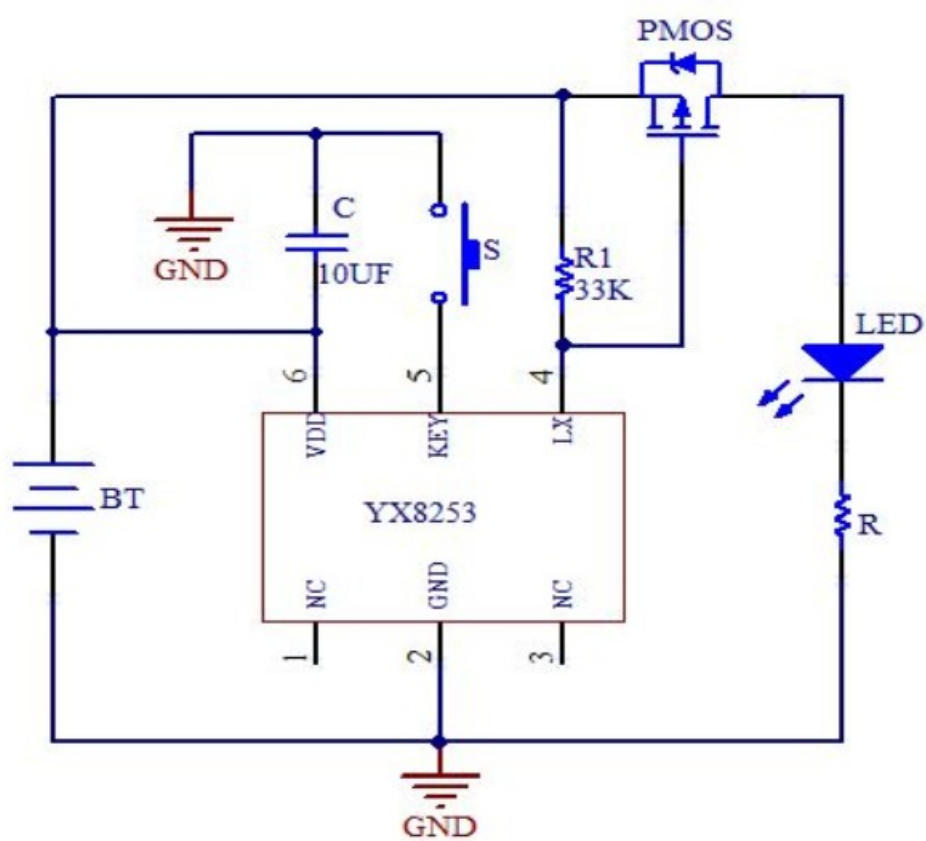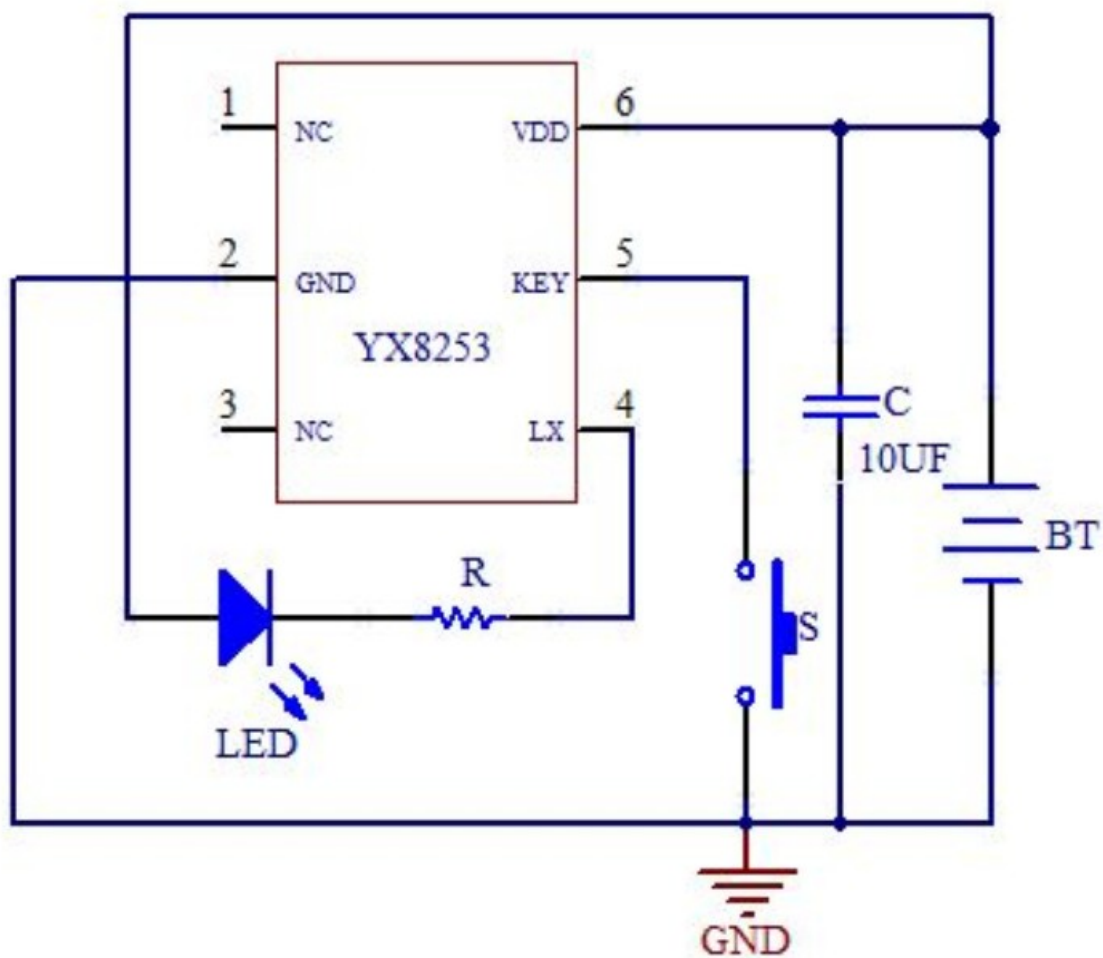LED drivers for flashlights/headlamps, etc.

Package Diagram

SOT23-6

Pinout Information

SOT23-6	Pin Name	Pin Description
1	NC	Empty
2	GND	Ground
3	NC	Empty
4	LX	LED Output
5	KEY	Switch
6	VDD	Power Positive

Circuit 1 (YX8253):

1 NC   6 VDD
2 GND   5 KEY
YX8253
3 NC   4 LX

R
LED
S
C 10UF
BT
GND

Circuit 2 (YX8253):

PMOS
GND
C 10UF
S
R1 33K
LED
BT
6 VDD   5 KEY   4 LX
YX8253
1 NC   2 GND   3 NC
R
GND

Characteristic parameters (ambient temperature 25°C, XPE 3WLED)

Symbol Parameter Conditions Maximum Typical Minimum Unit

VIN Operating Voltage 4.5 3.7 2.5 V

Rd Conductance Internal Resistance Id =1A 100 mΩ

F25% 25% Brightness Operating Frequency 230 HZ

Ff Strobe Frequency 7.5 HZ

T SOS Cycle 6.7 S

Idd Standby Current Off State 2 uA

Limit Parameters

Symbol Parameter Range

VDD IC supply voltage -0.3V to 5V

Vin LED supply voltage -0.3 to VDD+0.3V

Io LED current MAX 2A
Ta Operating Temperature -20 to +85°C

Tstg Storage Temperature -40 to +125°C

Tsld Soldering Temperature 300°C(5S)

Application Notes

Function Switching
YX8253 has four functions, LED off after power on.
LED off after power on, switch the LED by pressing the flick switch to full brightness-25%-burst.
Flashing 8HZ-Off function, in any state long press switch
Press and hold the switch for 3S in any state to switch to the SOS state, and then press the switch again to turn off the LED.
Press and hold the switch for 3S in any state to switch to the SOS function state, and press the switch again in this state to turn off the LED.

Current Adjustment

LED current is realized by adjusting the resistor R. You can adjust the size of the resistor R according to the required current, note that the current should be adjusted within the maximum current of YX8253, and the power of the resistor should be suitable, otherwise it can't work normally.