

## 5V/1A High Brightness LED Driver

### DESCRIPTION

ETA6012 is a LED driver with a constant current of up to 1A. The constant driving current can be set by external resistance. It can drive LEDs for handheld lighting.

ETA6012 contains a reference source with a temperature coefficient of 100ppm, a current detection circuit, a constant current feedback circuit. It provides a short circuit protection, an over temperature protection and other modules. The ETA6012 can prevent reverse current from out pin to battery due to unexpected high voltage on out pin.

ETA6012 is available in an ESOP8 package.

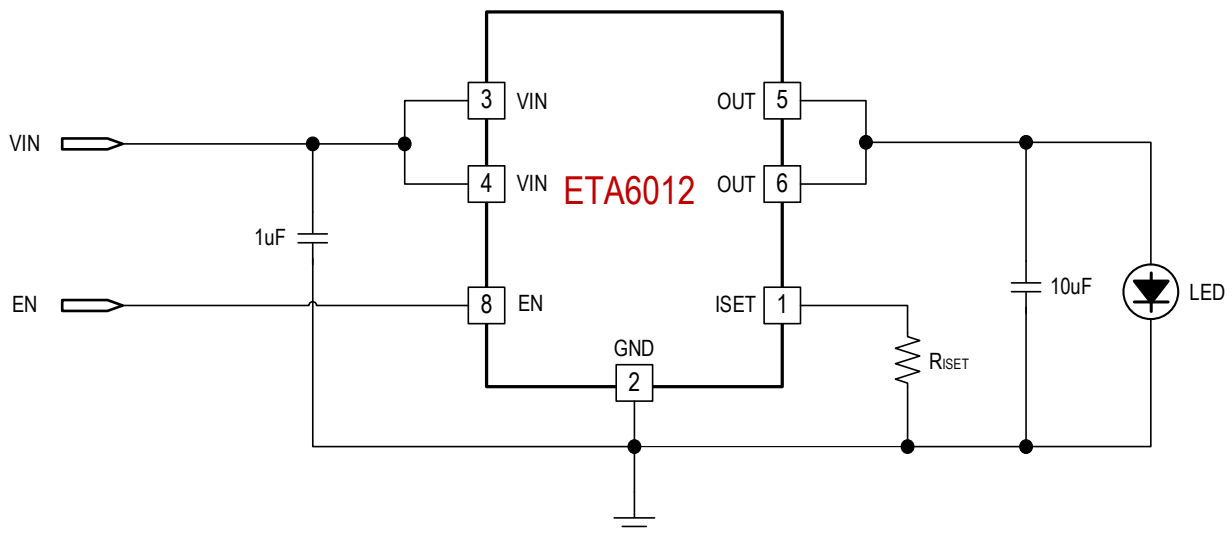
### FEATURES

- ◆ Wide range input: 2V to 6V
- ◆ Up to 1A constant driving current
- ◆ Adjustable driving current set by external resistance
- ◆ Short circuit protection
- ◆ Over temperature protection
- ◆ Prevent output to input reverse current
- ◆ ESOP-8 Package

### APPLICATIONS

- ◆ Handheld Lamp
- ◆ Flashlight

### TYPICAL APPLICATION

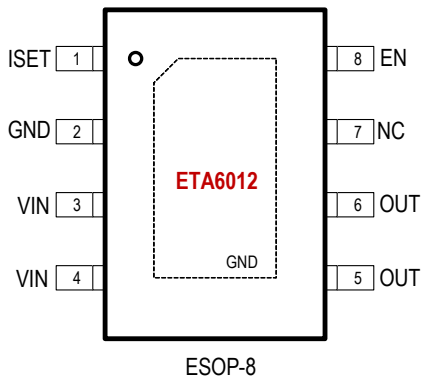


### ORDERING

### INFORMATION

PART No.	PACKAGE	TOP MARK	Pcs/Reel
ETA6012E8A	ESOP-8	6012 <u>YWW2L</u>	4000

## PIN CONFIGURATION



## ABSOLUTE MAXIMUM RATINGS

(Note: Exceeding these limits may damage the device. Exposure to absolute maximum rating conditions for long periods may affect device reliability.)

VIN Voltage to GND.....	-0.3V to 7.5V
All other Pin Voltage to GND.....	VIN-0.3V to VIN+0.3V
OUT to ground current.....	Internally limited
Operating Temperature Range.....	-40°C to 85°C
Storage Temperature Range.....	-55°C to 150°C
Thermal Resistance $\theta_{JC}$ $\theta_{JA}$	
ESOP-8.....	15.....50.....°C/W
Lead Temperature (Soldering, 10sec).....	260°C
ESD HBM (Human Body Mode).....	2KV
ESD MM (Machine Mode).....	200V

## ELECTRICAL CHARACTERISTICS

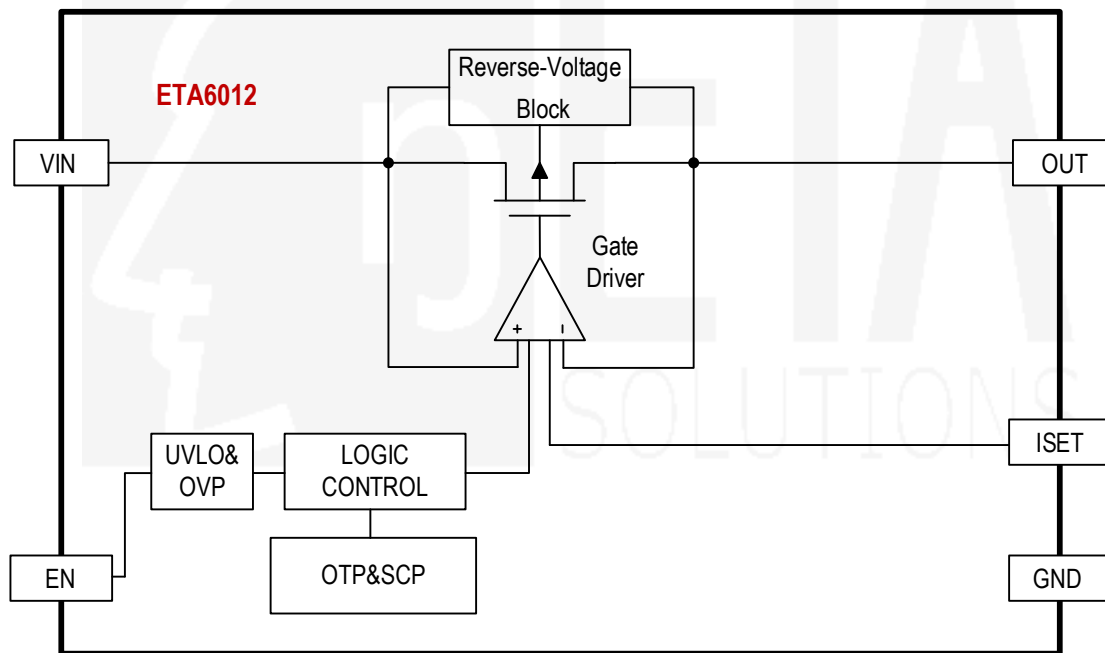
( $V_{IN} = 4V$ , unless otherwise specified. Typical values are at  $T_A = 25^\circ C$ .)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage Range		2.1		6.0	V
Input UVLO	Rising, Hysteresis=100mV		2.0		V
Input OVP	Rising, Hysteresis=100mV		6.1		V
Input Supply Current	$R_{ISET}=20K$		100		$\mu A$
Input Shutdown Current			0.5	1.5	$\mu A$
LED Driving Current	$R_{ISET}=20K$		1.27		A
	$R_{ISET}=30K$		0.833		A
	$R_{ISET}=49.9K$		0.500		A
Response time to Short-circuit			1		$\mu s$
Reverse Indication Threshold	$V_{OUT}-V_{IN}$		150		mV
Reverse Leakage Current	$V_{OUT}=5.5V, V_{IN}=0V, V_{EN}=High$		0.5	2	$\mu A$
EN Input Logic High threshold	EN Voltage Rising	1			V
EN Input Logic Low threshold	EN Voltage Falling			0.66	V
Thermal Shutdown	Hysteresis = 30°C		160		°C
Thermal Regulation			135		°C

**PIN DESCRIPTION**

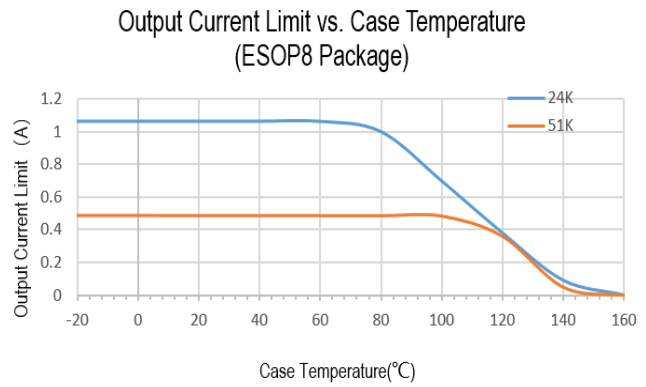
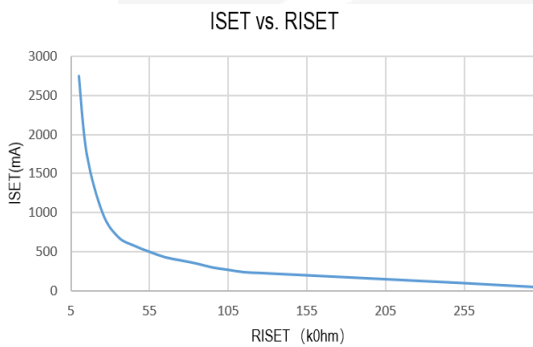
PIN#	NAME	DESCRIPTION
1	ISET	Current limit threshold setting pin. Connect a resistor ( $R_{ISET}$ ) from this pin to GND to set different current limit values.
2	GND	Ground
3,4	VIN	Power input pin.
5,6	OUT	Output pin. It's used to drive the positive pole of LED
7	NC	No connection.
8	EN	Enable input pin.

**FUNCTIONAL BLOCK DIAGRAM**



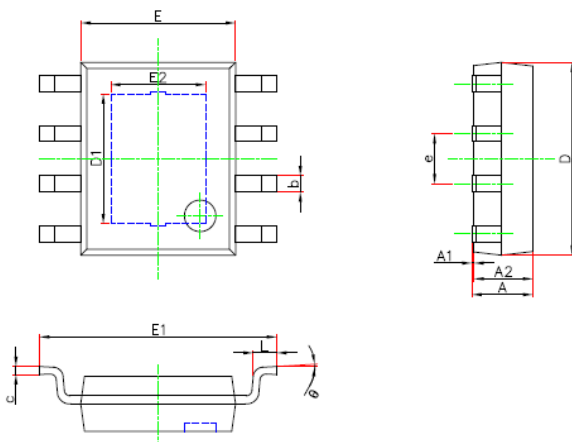
APPLICATION INFORMATION

RISET (KOHM)	ISET(mA)
200	121
180	134
100	242
75	326
62	395
51	485
43	577
30	833
20	1269



PACKAGE OUTLINE

Package: ESOP-8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.300	1.700	0.051	0.067
A1	0.000	0.100	0.000	0.004
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
D1	3.202	3.402	0.126	0.134
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
E2	2.313	2.513	0.091	0.099
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°		8°	