

Description

The CL2802 can disconnect the systems from its output pin (OUT) in case wrong input operating conditions are detected. The system is positive overvoltage protected up to 30V.

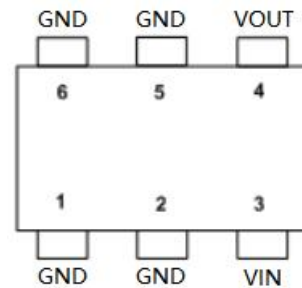
The internal over voltage threshold (OVLO) is 6.3V and internal over current threshold (OCP) is 2.5A. The CL2802 also has an internal over temperature protection (OTP) function, which monitors chip temperature to protect the device.

Features

- ◆ VIN operating range: 2.7V to 5.5V
- ◆ Internal OVP: 6.3V
- ◆ Internal OCP: 2.5A(typ)
- ◆ Typical Ron: 120mΩ
- ◆ OVP response time: 30ns (typ.)
- ◆ Startup debounce time: 10mS
- ◆ Output power on time: 100uS
- ◆ Output discharge

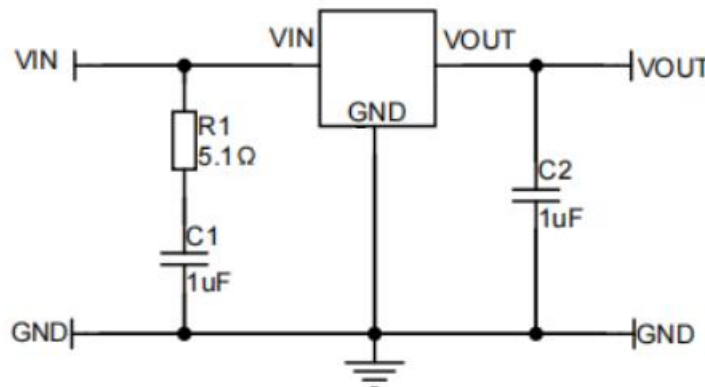
Applications

- ◆ GPS
- ◆ Industrial Handheld and Enterprise Equipment
- ◆ SLR Digital Cameras
- ◆ PC
- ◆ Electronic Cigarette

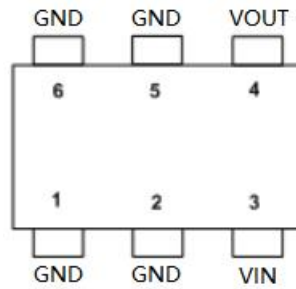


Package Type: SOT23-6

Typical Application



Pin Configuration

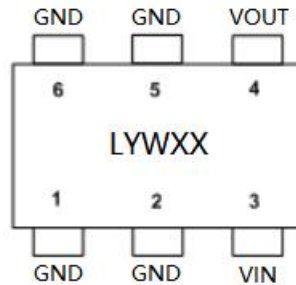


SOT23-6

Pin Description

NO.	NAME	DESCRIPTION
1, 2, 5, 6	GND	Power ground.
3	VIN	Input pin, connect to AC adaptor or VBUS. A 47nF low ESR ceramic capacitor must be connected as close as to this pin. It is recommended to use 50V capacitor or according to application.
4	VOUT	Output pin. Connect to load.

Marking Information



PART NUMBER	INTERNAL OCP	MARKING	DESCRIPTION
CL2802A6L	2.5A	LYWXX	L: Model code (Fixed characters) Y: Year code W: Cycle code XX: Lot number code

Ordering Information

CL 2802 A 6L
① ② ③ ④

①: Abbreviation of product company name

②: Series model

③: Version code

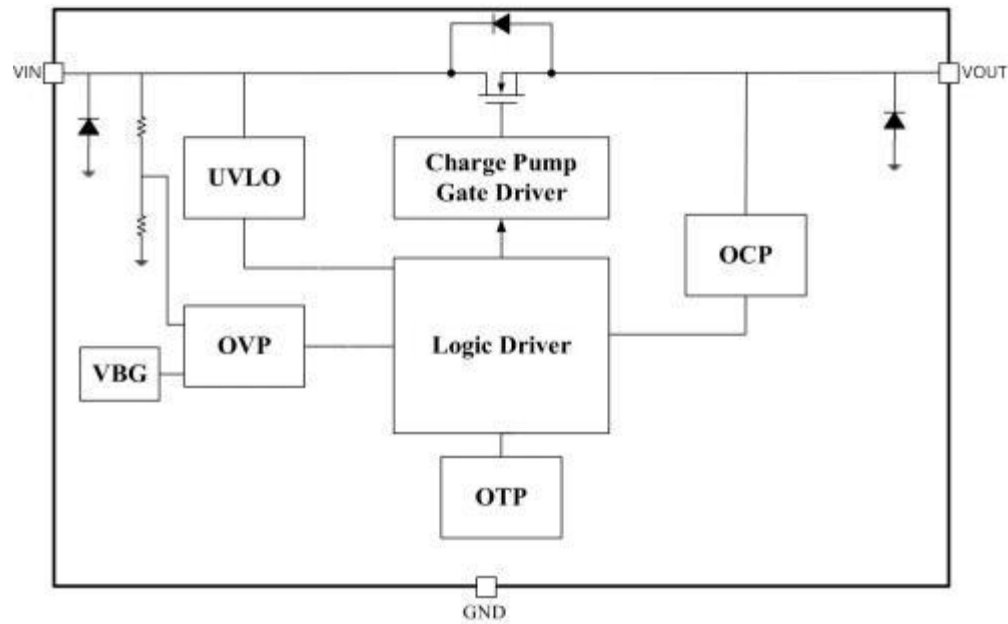
④: Package code

6L: SOT23-6L

Absolute Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNIT
Input voltage	V_{IN}	-0.3 ~ 36	V
Output voltage	V_{out}	-0.3 ~ 7	V
Thermal resistance	θ_{JA}	260	°C/W
Operation temperature	T_J	-40 ~ +150	°C
Storage temperature	T_{stg}	-65 ~ +150	°C
Soldering temperature Soldering time	T_{solder}	260, 10s	°C
ESD (Human Body Model) (Note 2)	V_{ESD_HBM}	2000	V
ESD (Machine Model) (Note 2)	V_{ESD_MM}	200	V

Functional Block Diagram

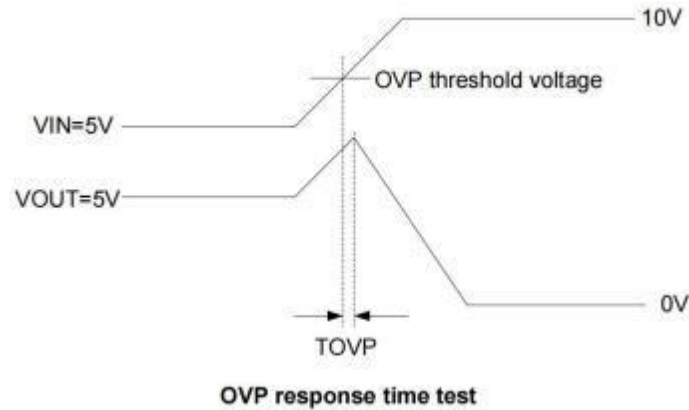


Electrical Characteristics

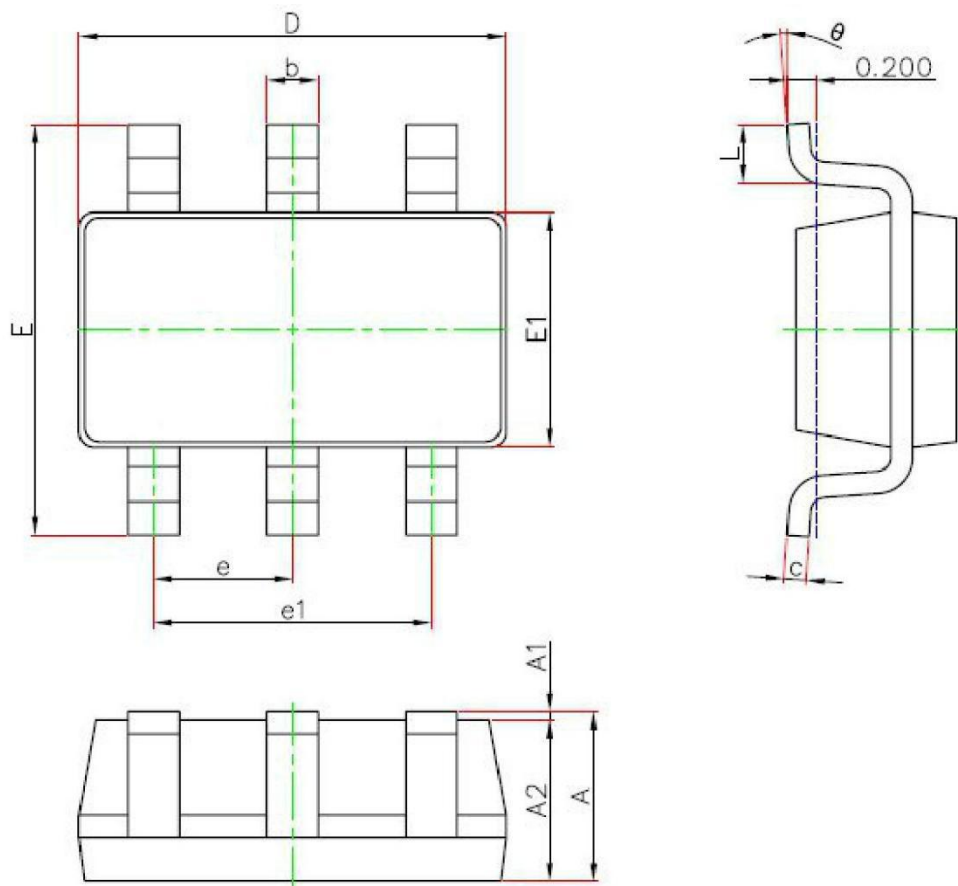
CL2802 ($V_{IN} = 5V$, $T_A = 25^\circ C$)

Over operating free-air temperature range (unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
VIN operating voltage	V_{IN}		2.7		5.5	V
VIN operating supply current	I_Q	$V_{IN} = 5V$		100		μA
VIN-to-VOUT ON resistance	R_{ON}	$V_{IN} = 5V, I_{OUT} = 0.3A$		120		$m\Omega$
		$V_{IN} = 5V, I_{OUT} = 0.7A$		128		$m\Omega$
Output discharge resistance	R_{DIS}			3		$k\Omega$
Output overvoltage protection voltage	V_{OVP}		5.8	6.3	6.8	V
VIN undervoltage lockout	V_{UVLO_R}	VIN rising		2.5		V
	V_{UVLO_F}	VIN falling		2.3		V
Enter the startup time	T_{ON}	VIN= 0 - >5V to output ON		100		μs
OVP active time	T_{OVP}	VIN = 5 - >10V with rising 1V/20ns		50		ns
OTP threshold	T_{OTP}			165		$^\circ C$
OTP threshold hysteresis	T_{OTP_HYS}			40		$^\circ C$



Package Information: SOT23-6



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

- The information described herein is subject to change without notice.
- CHIPLINK Technology is not responsible for any problems caused by circuits or diagrams described herein whose related industrial properties, patents, or other rights belong to third parties. The application circuit examples explain typical applications of the products, and do not guarantee the success of any specific mass-production design.
- When the products described herein are regulated products subject to the Wassenaar Arrangement or other agreements, they may not be exported without authorization from the appropriate governmental authority.
- Use of the information described herein for other purposes and/or reproduction or copying without the express permission of CHIPLINK Technology is strictly prohibited.
- The products described herein cannot be used as part of any device or equipment affecting the human body, such as exercise equipment, medical equipment, security systems, gas equipment, or any apparatus installed in airplanes and other vehicles, without prior written permission of CHIPLINK Technology.
- Although CHIPLINK Technology exerts the greatest possible effort to ensure high quality and reliability, the failure or malfunction of semiconductor products may occur. The user of these products should therefore give thorough consideration to safety design, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue.