CL2802
Over Voltage and Over Current Protector

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.

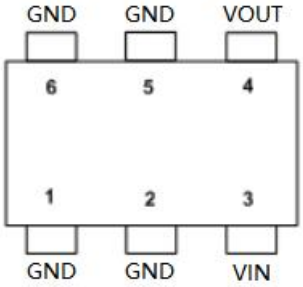
The internal over voltage threshold (OVLO) is 6.3V and internal over current threshold (OCP) is 2.5A. The CL2802 also has an internal over temperature protection (OTP) function, which monitors chip temperature to protect the device.

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

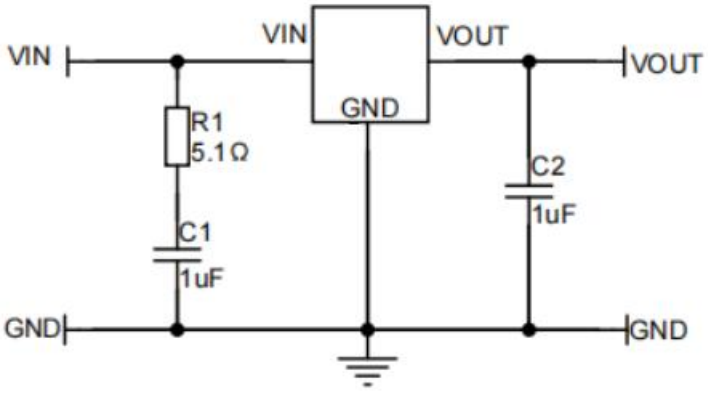
Applications

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

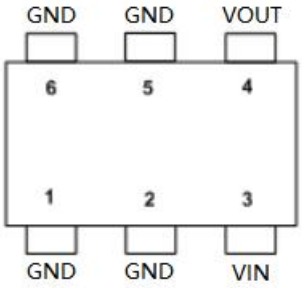


Package Type: SOT23-6

Typical Application



Pin Configuration

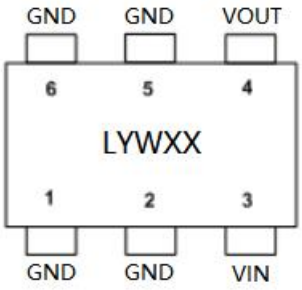


SOT23-6

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

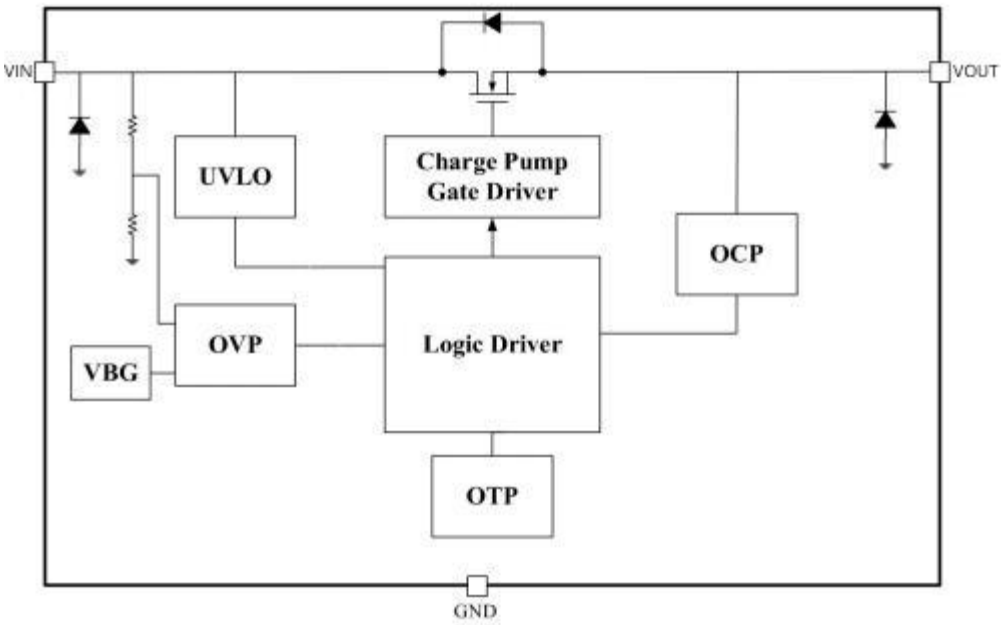
④: Package code

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	θJA	260	℃/W
Operation temperature	T_J	-40 ~ +150	℃
Storage temperature	T_{stg}	-65 ~ +150	℃
Soldering temperature Soldering time	T_{solder}	260, 10s	℃
ESD (Human Body Model) (Note 2)	V_{ESD_HBM}	2000	V
ESD (Machine Model) (Note 2)	V_{ESD_MM}	200	V

Functional Block Diagram

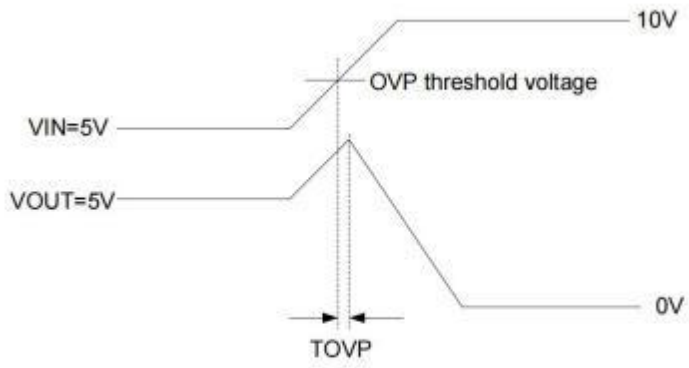


Electrical Characteristics

CL2802 (V_{IN} = 5V, T_A = 25℃)

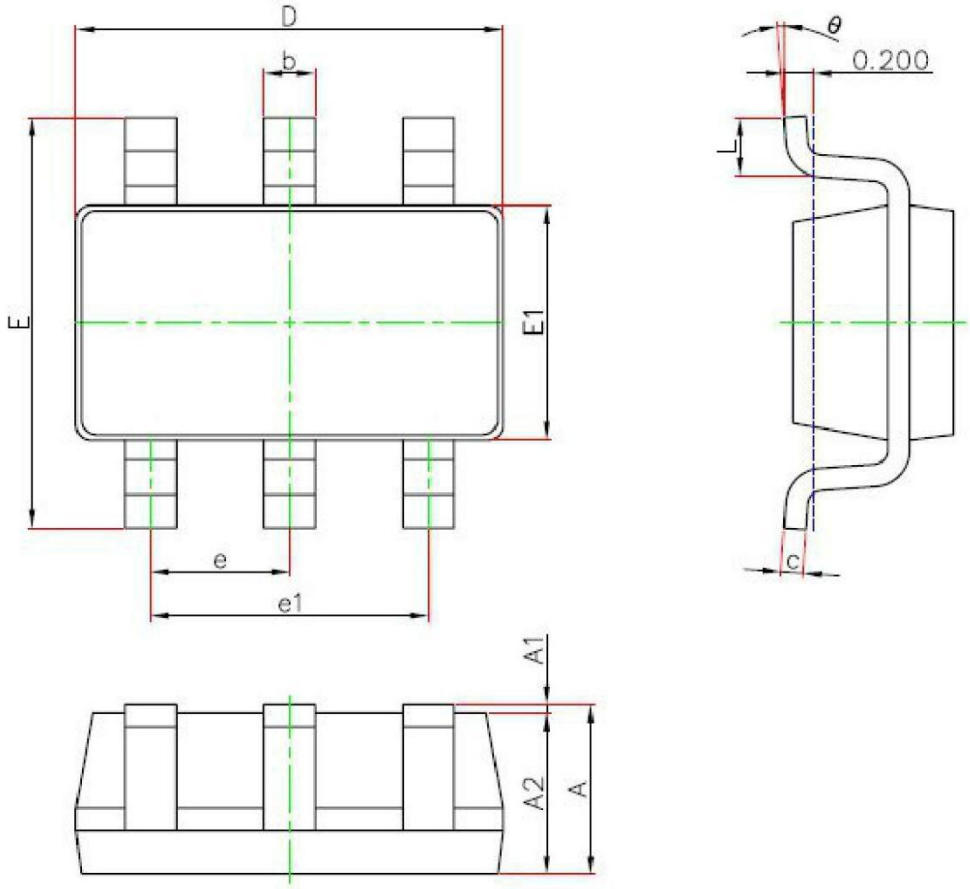
Over operating free-air temperature range (unless otherwise noted)

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		mΩ
		V_{IN} = 5V, I_{OUT} = 0.7A		128		mΩ
Output discharge resistance	R_{DIS}			3		kΩ
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		uS
OVP active time	T_{OVP}	VIN = 5 - >10V with rising 1V/20ns		50		ns
OTP threshold	T_{OTP}			165		℃
OTP threshold hysteresis	T_{OTP_HYS}			40		℃



OVP response time test

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°