

35mΩ, Over-Voltage Protector

GENERAL DESCRIPTION

PW2609 is a high voltage 36V over voltage protector (OVP) which has a very low 35mohm on resistance, by only change the external connecting. It can be used as an OVP device or a high voltage switch.

PW2609 consists of a charge pump, a configurable power MOSFET, a voltage reference, a gate driver and some logics and protection modules. PW2609 can react to an input surge very fast and shut off the switch in less than 0.1us and stand the voltage spike as high as 20V.

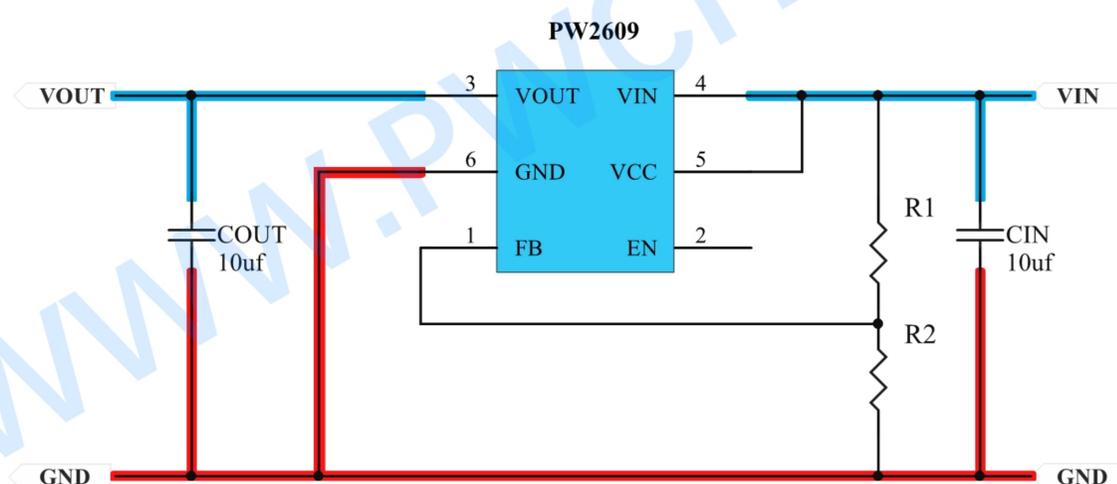
FEATURE

- 36V standoff voltage
- 35mohm on resistance
- Input OVP with 0.1us reaction time
- Protection voltage programmable by $V_{fb}=1.26V$
- SCP and OTP
- Enable pin available for switch on and off
- OVP: PW2605/PW2606B (350mΩ); PW2609A (35mΩ)
- OVP+OCP: PW1558 (3V ~ 20V 5.8A); PW1515 (3.5V~6V 2A)
PW1605 (4V ~ 48V 5A)

APPLICATIONS

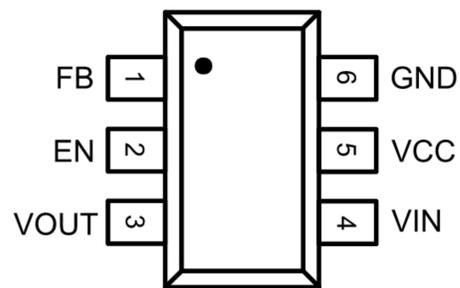
- All electronic devices with input DC power plug
- E-Cigarette
- Car Camera
- Cellphone

TYPICAL APPLICATION CIRCUIT



$$V_{ovp} = 1.26V \times (R1/R2+1)$$

PIN ASSIGNMENT/DESCRIPTION



Pin No	Pin Name	Functions
1	FB	OVP feedback input pin. A resistor divider from IN to AGND thru this pin. $V_{FB}=1.26V$. When FB floating, default $OVP=6.1V$. $V_{ovp} = 1.26V \times (R1/R2+1)$ where V_{ovp} has to be within the range from 3.5 to 20V.
2	EN	Enable pin, pull high to turn on the chip and pull low to shut down the chip
3	Vout	OUTPUT pin, Bypass with a 1uF capacitor from this pin to ground
4	VIN	A Bias voltage input pin. Bypass with a 1uF capacitor from this pin to ground.
5	VCC	The independent supply voltage for control logic and charge pump, tied to IN in normal application
6	GND	Ground

Products

Reel /outer anti-static packaging	Product	
 <p>NO: 1. QR code content: WWW.PWCHIP.COM; 2. Product: PWCHIP product model name; 3. Lot No: wafer batch code/internal system production code (customers can send this code to support@pwchip.com to verify product information and confirm); 4. D/C: packaging cycle; 5. QTY: packaging quantity (box/disc); 6. Data: packaging time.</p>	PW2609	
	Brand	Package
	平芯微/PWCHIP	SOT23-6L
	Specification	Qty per reel
	Taping & Reel	3000 PCS
	Marking	
MAXXX		
Device code: MA ; Lot number code: XXX .		

ELECTRICAL CHARACTERISTICS

(VIN = 5V, TA = 25°C, unless otherwise noted)

Symbol	Test Conditions	MIN	TYP	MAX	UNIT
VIN Range		3.4		36	V
VIN UVLO	Hys=400mV		3.35		V
OVP	Default OVP=6.1V when floating fb		6.1		V
OVP FB		1.21	1.26	1.31	μA
OVP Range		3.5		20	V
Ron	VCC=5V, Iout=2A		35		mΩ
Iq	Standby current, IN and Vcc < OVP voltage		150		uA
I _{sd}	Shutdown current		10		uA
Thermal Shutdown	Rising, Hys=50°C	5.9	6.1	6.3	V

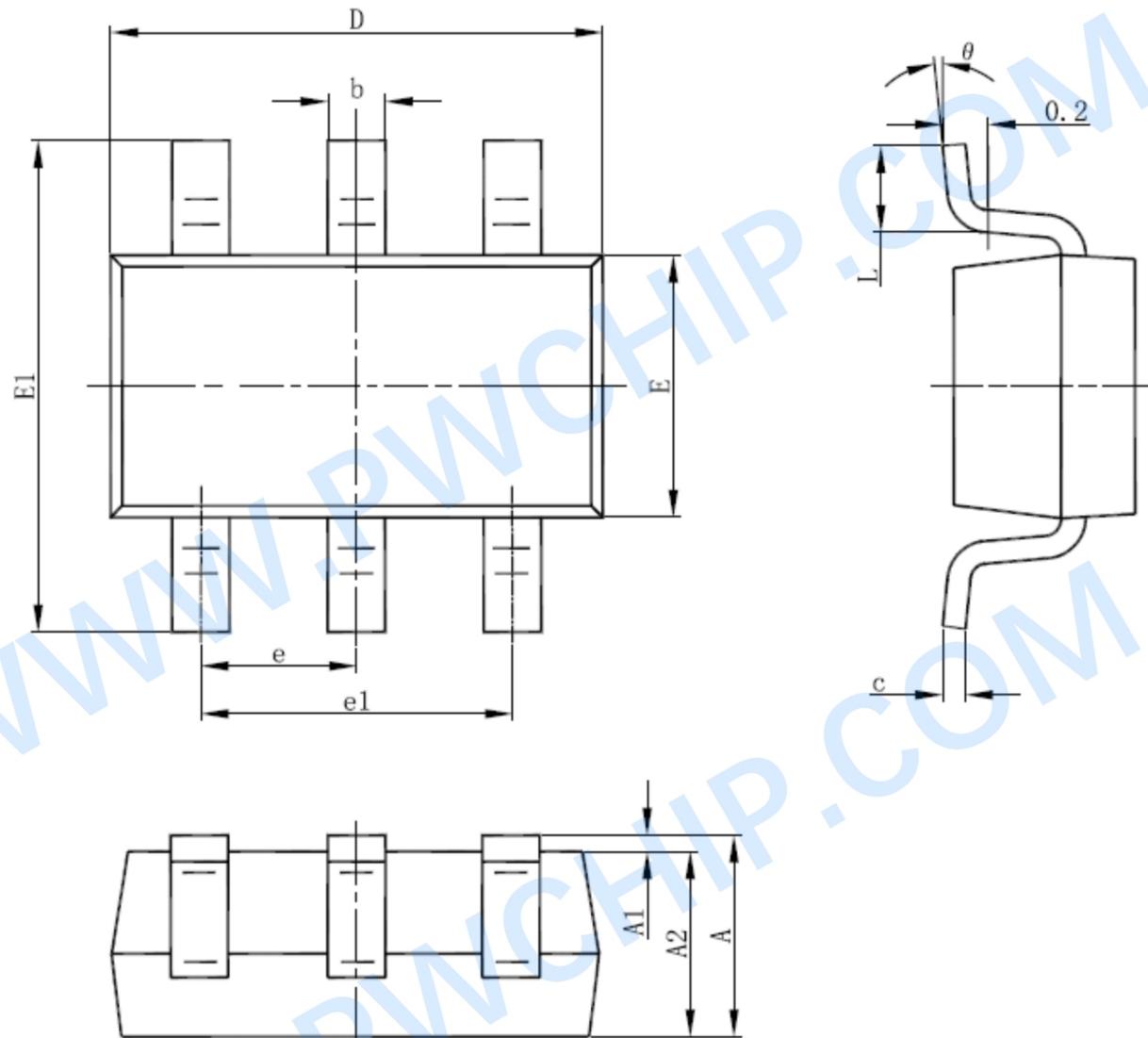
Absolute Maximum Ratings

ITEMS	VALUE	UNIT
FB Voltage	-0.3~6	V
VIN Voltage	-0.3~36	V
VO _{UT} Voltage	-0.3~36	V
EN Voltage	-0.3~36	V
Operating Temperature Range	-40~85	°C
Storage Temperature Range	-55 to 150	°C
R _{θJA}	100	°C/W
R _{θJC}	50	°C/W
Package Lead Soldering Temperature (10s)	260	°C
ESD Human Body Model	2	KV
ESD Machine Model	200	V

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

PACKAGE DESCRIPTION

SOT23-6L



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.900	1.450
A1	0.000	0.150
A2	0.900	1.300
b	0.300	0.500
c	0.100	0.200
D	2.800	3.000
E	1.500	1.700
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

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