

36V High Side Over-Voltage Protector

DESCRIPTION

ETA7014 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.

ETA7014 consists of a charge pump, a configurable power MOSFET, a voltage reference, a gate driver and some logics and protection modules. ETA7014 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.

ETA7014 is in SOT23-6 package.

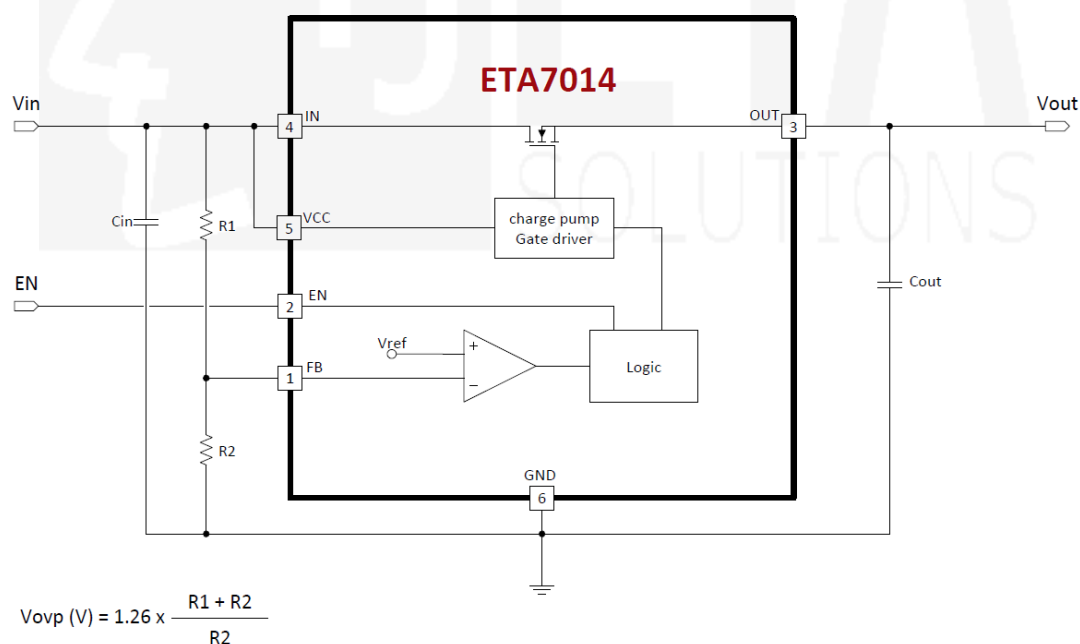
FEATURES

- ◆ 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

APPLICATIONS

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

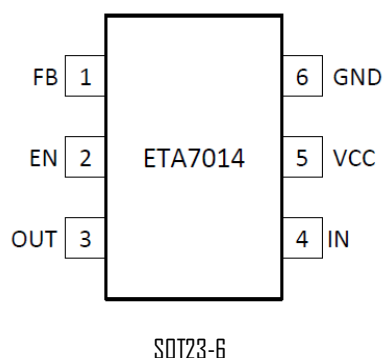
TYPICAL APPLICATION



ORDERING INFORMATION

PART	PACKAGE	TOP MARK	Pcs/Reel
ETA7014S2G	SOT23-6	MA YW (YW: date code)	3000

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.)

FB Voltage		-0.3V to 6V
IN,OUT,EN,IO,QVPIN Voltage		-0.3V to 36V
Operating Temperature Range		-40°C to 85°C
Storage Temperature Range		-55°C to 150°C
Thermal Resistance	θ_{JC} θ_{JA}	
SOT23-6		50.....100..... °C/W
Lead Temperature (Soldering, 10ssec)		260°C
ESD HBM (Human Body Mode)		2KV
ESD MM (Machine Mode)		200V

ELECTRICAL CHARACTERISTICS

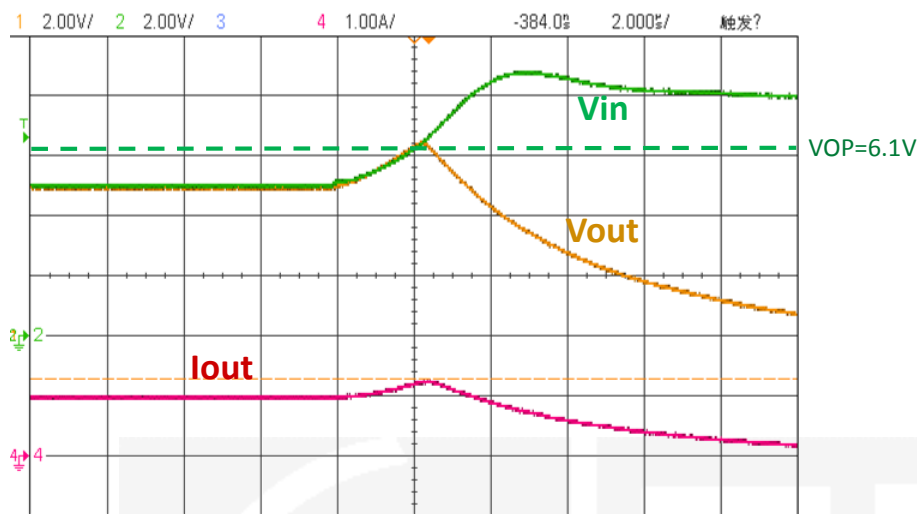
($V_{IN} = 5V$, unless otherwise specified. Typical values are at $T_A = 25^\circ C$.)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
IN Range		3.35		36	V
UVLO	Hys=400mV		3.35		V
QVP	Default QVP=6.1V when floating fb.		6.1		V
QVP FB	$V_{in}=5V$	1.21	1.26	1.31	V
QVP Range		3.5		20	V
R_{on}	$V_{CC}=5V$, $I_{out}=2A$		35		m Ω
I_q	Standby current, IN and Vcc < QVP voltage		150		μA
I_{sd}	Shutdown current		10		μA
Thermal Shutdown	Rising, Hys=50°C		135		°C

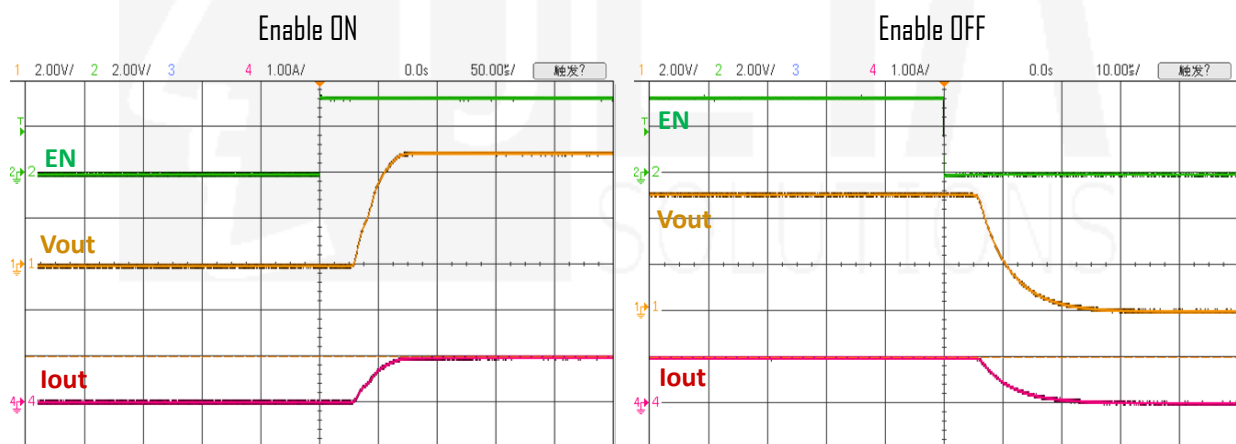
PIN DESCRIPTION

PIN #	NAME	DESCRIPTION
1	FB	QVP feedback input pin. A resistor divider from IN to AGND thru this pin. VFB=1.26V. When FB floating, default QVP=6.1V.
2	EN	Enable pin, pull high to turn on the chip and pull low to shut down the chip.
3	OUT	OUTPUT pin, Bypass with a 1 μF capacitor from this pin to ground.
4	IN	A Bias voltage input pin. Bypass with a 1 μF 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

OVER VOLTAGE PORTECTION CHRACTERISCTICS



Enable On and OFF Waveforms



APPLICATION NOTE

Default OVP level when FB Float

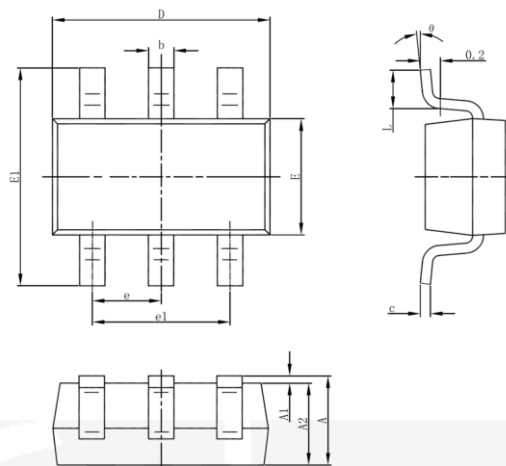
One can leave FB pin float if only want to set over voltage level at 6.1V.

Setting OVP level when connecting resistor divider on FB pin

$V_{ovp} = 1.26 \times \frac{R1+R2}{R2} (V)$ where V_{ovp} has to be within the range from 3.5 to 20V.

Package Outline

Package: 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
E	1.500	1.700	0.059	0.067
E1	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°