

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 and DFN2x2-8 package.

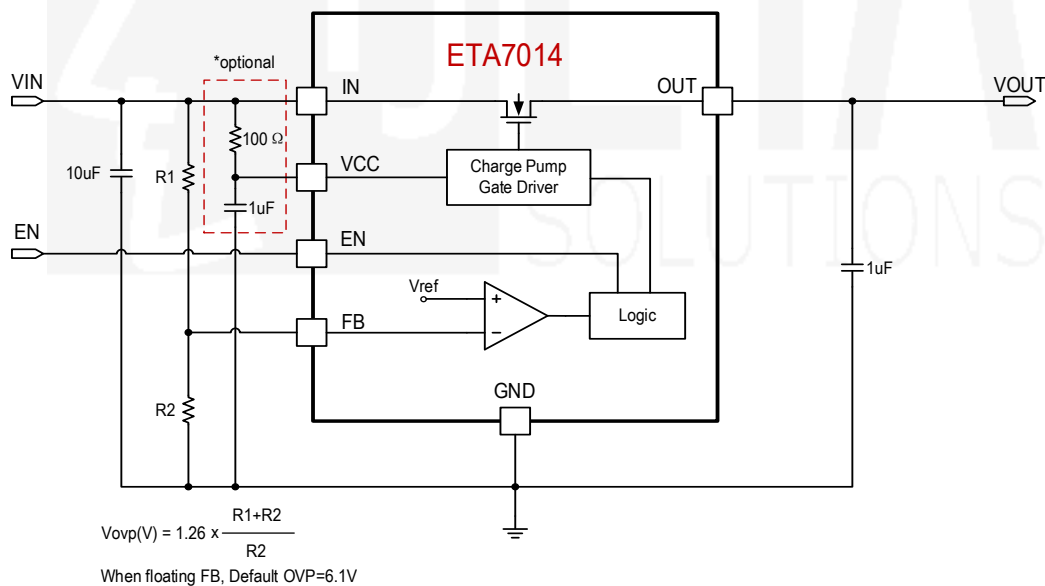
FEATURES

- ◆ 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
- ◆ RoHS Compliant

APPLICATIONS

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

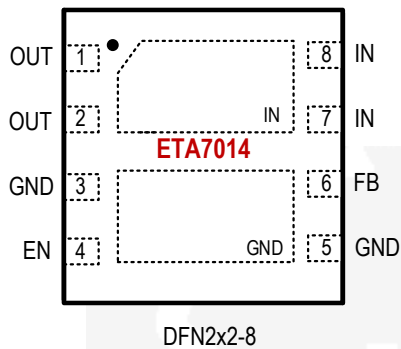
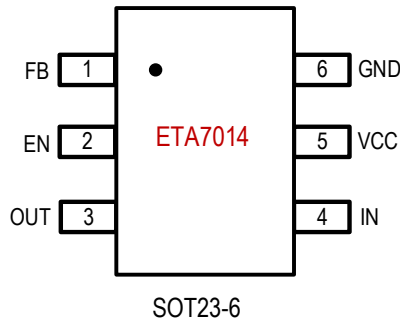
TYPICAL APPLICATION



ORDERING INFORMATION

PART No.	PACKAGE	TOP MARK	Pcs/Reel
ETA7014S2G	SOT23-6	MA YW	3000
ETA7014D2I	DFN2x2-8	MA YW	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 8V
IN,OUT,EN,VCC 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
DFN2x2-8.....	20.....100.....°C/W
Lead Temperature (Soldering, 10sec)	260°C
ESD HBM (Human Body Mode)	2KV
ESD CDM (Charged Device Mode)	1KV

ELECTRICAL CHARACTERISTICS

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

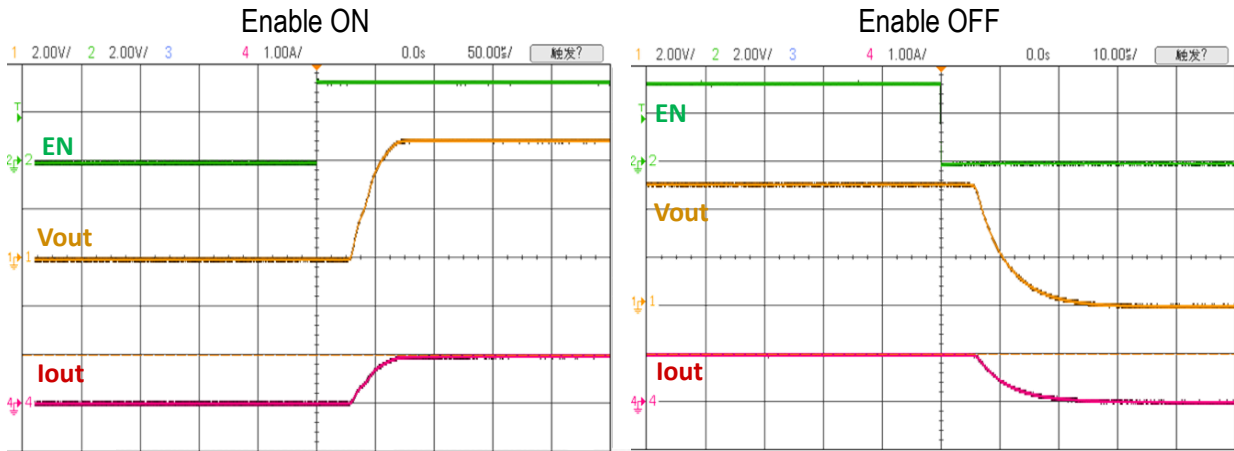
PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
IN Range		4		36	V
UVLO	Hys=400mV		3.35		V
OVP	Default OVP=6.1V when floating fb	5.8	6.1	6.4	V
OVP FB	$V_{IN}=5V$	1.21	1.26	1.31	V
OVP Range		3.5		20	V
Ron	$V_{CC}=5V, I_{OUT}=2A$	15	35	50	mΩ
Iout_Max	The Max I_{OUT}		5		A
EN Logic Input High	ON	1			V
EN Logic Input Low	OFF			0.4	V
Iq	Standby Current, IN and $V_{CC} < OVP$ voltage	80	150	240	uA
I _{sd}	Shutdown Current		10		uA
Thermal Shutdown	Rising, Hys=50°C		135		°C

PIN DESCRIPTION

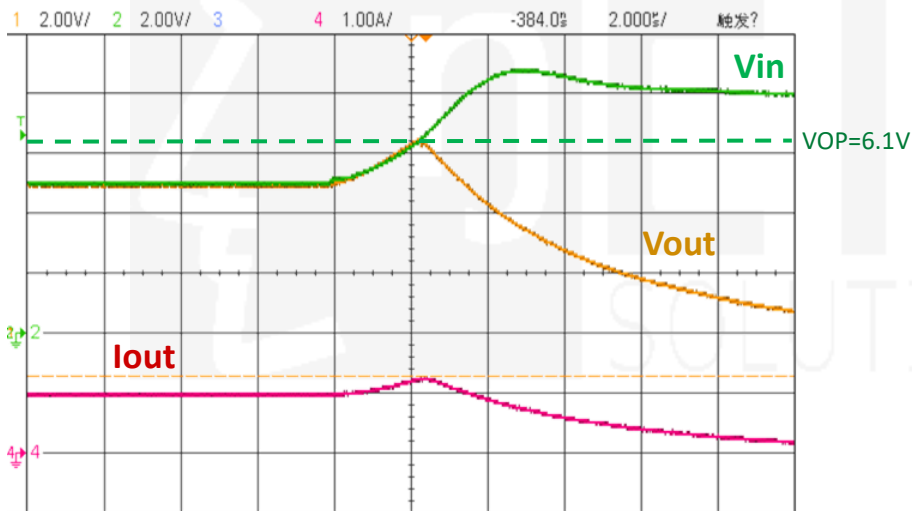
SOT23-6 PIN #	NAME	DESCRIPTION
1	FB	OVP Feedback Input Pin. A resistor divider from IN to AGND thru this pin. $V_{FB}=1.26V$. When FB floating, default OVP=6.1V.
2	EN	Enable Pin. Pull high to turn on the chip and pull low to shut down the chip.
3	OUT	Output Pin. Bypass with a 1uF capacitor from this pin to ground.
4	IN	A Power Input Pin. Bypass with a 10uF capacitor from this pin to ground.
5	VCC	The independent supply voltage for control logic and charge pump.
6	GND	Ground

DFN2x2-8 PIN #	NAME	DESCRIPTION
1,2	OUT	Output Pin. Bypass with a 1uF capacitor from this pin to ground.
3,5	GND	Ground
4	EN	Enable Pin. Pull high to turn on the chip and pull low to shut down the chip.
6	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.
7,8	IN	A Power Input Pin. Bypass with a 10uF capacitor from this pin to ground.

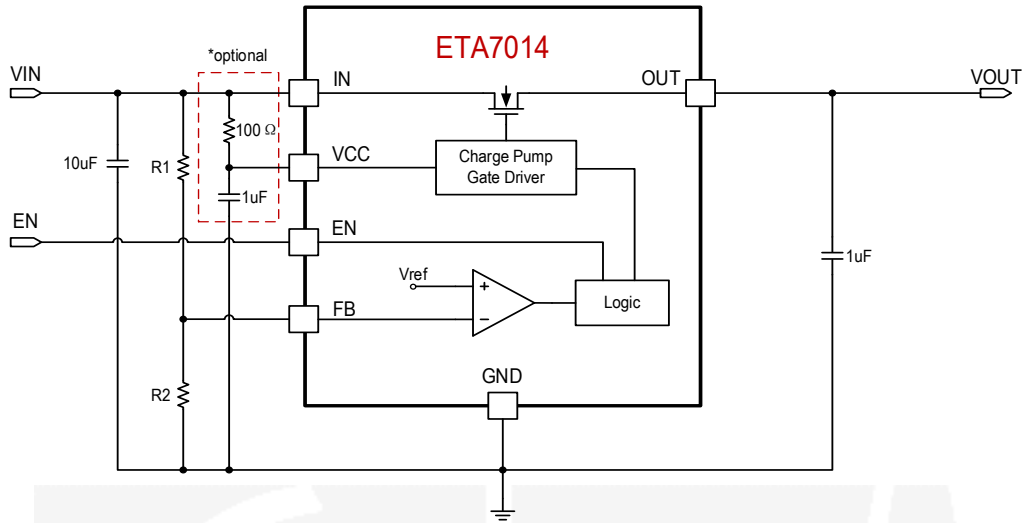
ENABLE ON AND OFF WAVEFORMS



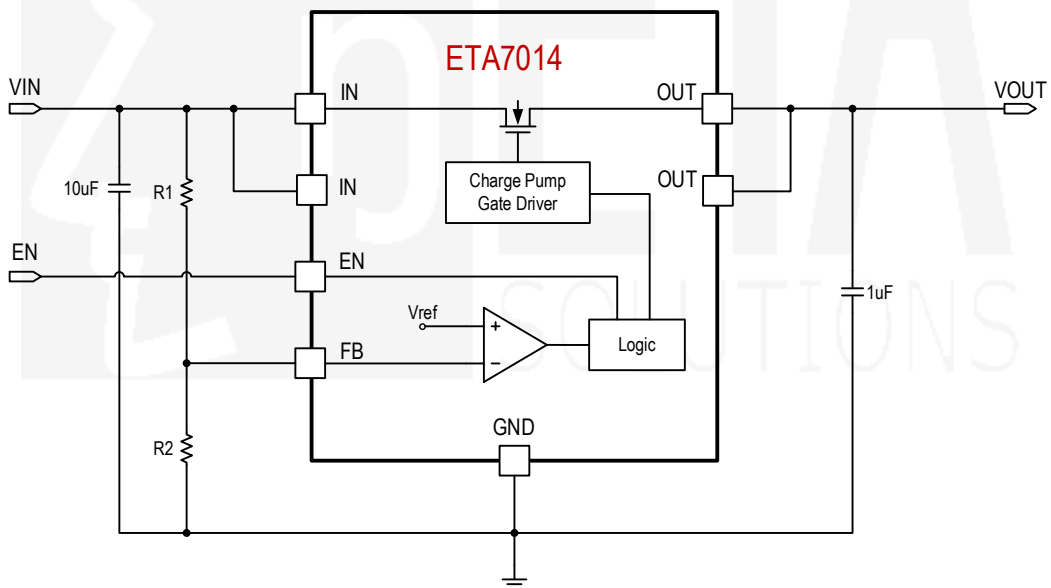
OVER VOLTAGE PROTECTION CHARACTERISTICS



TYPICAL APPLICATION CIRCUIT



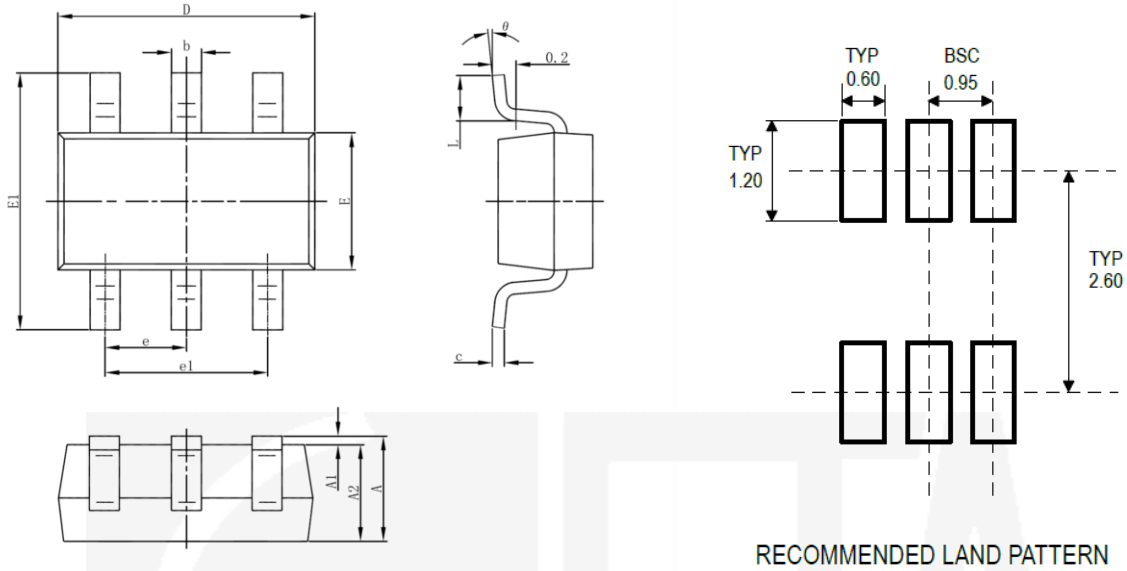
SOT23-6 package



DFN2x2-8 package

PACKAGE OUTLINE

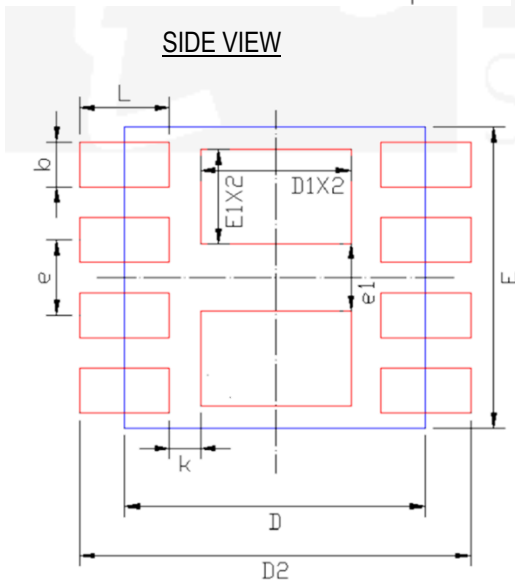
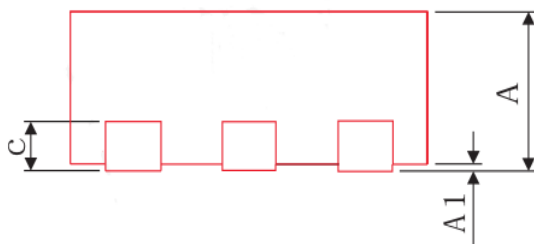
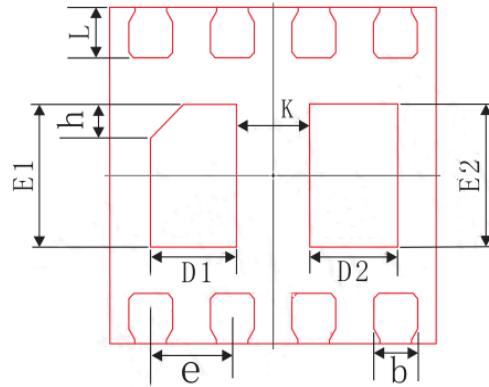
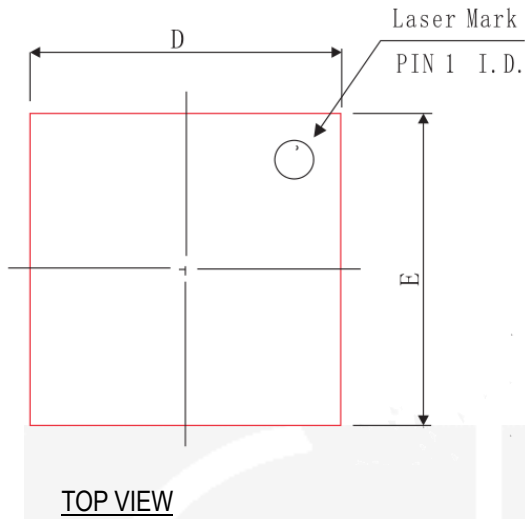
Package: SOT23-6



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°

PACKAGE OUTLINE

Package: DFN2x2-8

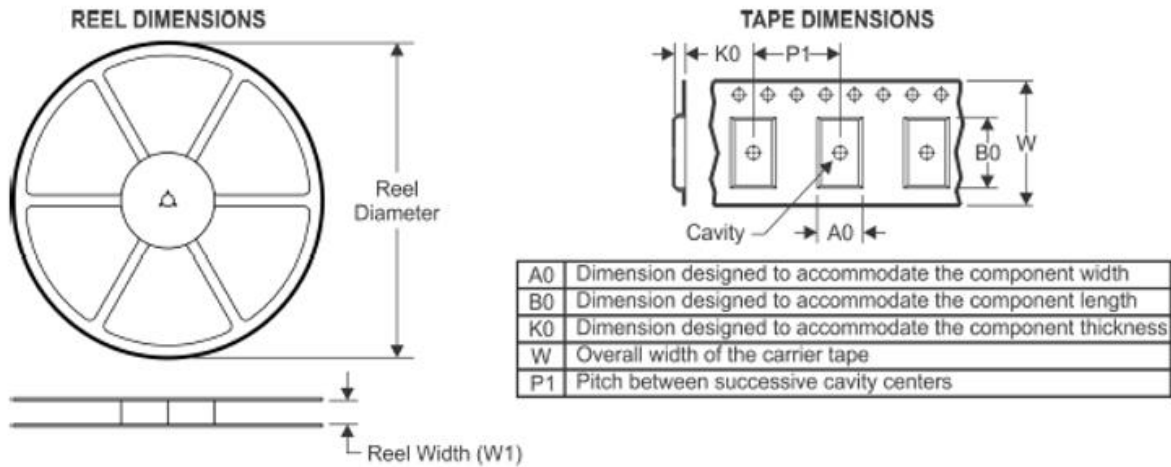


COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

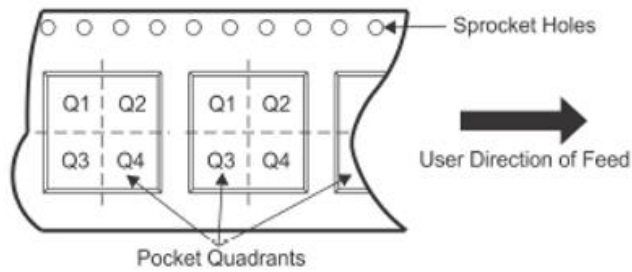
SYMBOL	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
b	0.22	0.27	0.32
D	1.95	2.00	2.07
E	1.95	2.00	2.07
D1	0.44	0.54	0.64
E1	0.75	0.85	0.95
D2	0.44	0.54	0.64
E2	0.75	0.85	0.95
L	0.25	0.30	0.35
h	0.15	0.20	0.25
K	0.45 REF		
c	0.203 REF		
e	0.50 BSC		

Dimensions	Value (in mm)
D	2
E	2
D1	1
E1	0.63
D2	2.6
e1	0.45
e	0.5
b	0.3
k	0.2 (≥ 0.2)
L	0.6

TAPE AND REEL INFORMATION



QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



Device	Package Type	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
ETA7014S2G	SOT23-6	6	3000	180	9.5	3.17	3.23	1.37	4	8	Q3
ETA7014D2I	DFN2x2-8	8	3000	180	9.5	2.3	2.3	1.1	4	8	Q1

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