

36V High Side Over Voltage Protector IC

Datasheet brierf

PRELIMINARY DATASHEET

Product Overview

FH87334 is a high voltage 36.0V over voltage protector (OVP) which has a very low 30mΩ on resistance, by only change the external connecting. It can be used as an OVP device or a high voltage switch. FH87334 consists of a charge pump, a configurable power MOSFET, a voltage reference, a gate driver and some logics and protection modules. FH87334 can react to an input surge very fast and shut off the switch in less than 0.1us.

FH87334 series include fixed OVP voltage device and adjustable OVP voltage device. FH87334 is available in SOT-23-3L/5L/6L, SOT-23, FBP1.6*1.6-6L package.

Simplified Application Circuit

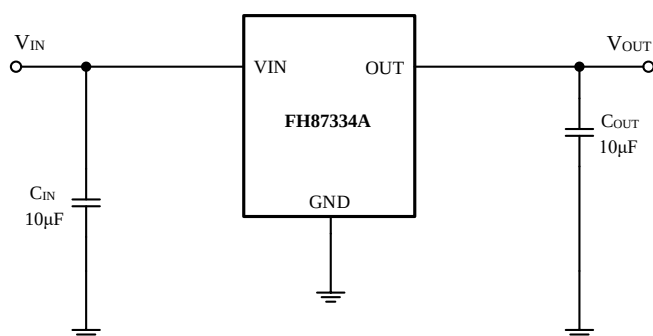


Figure 1-A. Fixed version application circuit

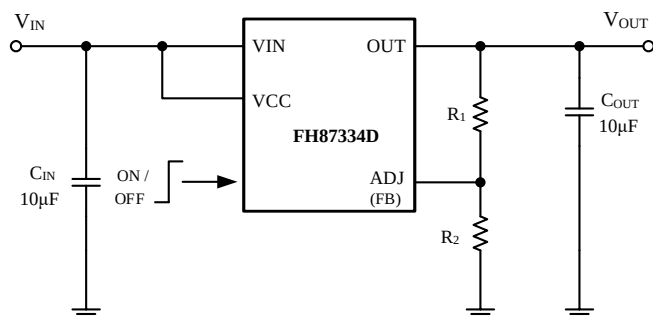


Figure 1-B. ADJ version application circuit

Key Features

- Input Operation Voltage Range: 3.35V to 36V
- 36V standoff voltage
- 30mΩ on resistance
- Over Current Protection: 2.5A(Typ.)
- OVP Threshold: Fixed 6.5V(Typ.), FH87334A
- Externally adjustable OVP voltage, FH87334D
- Input OVP with 0.1us reaction time
- Fixed and programmable protection voltage
- Integrated SCP and OTP
- Enable pin available for switch on and off
- Environment Temperature: -40°C ~ +85°C
- RoHS Compliant and 100% Lead (Pb)-Free

Package Type

- 6-pin FBP1.6*1.6
- 5-pin SOT23
- 6-pin SOT23
- 3-pin SOT23

Applications

- Car Camera
- E-Cigarette
- Portable Media Players
- USB Port Input Protectors
- All electronic devices with input DC power plug

Device Information ⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
FH87334DU6	FBP (6L)	1.60mm × 1.60mm
FH87334DM6	SOT-23 (6L)	2.90mm × 1.60mm
FH87334DM5	SOT-23 (5L)	2.80mm × 1.50mm
FH87334AM6	SOT-23 (6L)	2.90mm × 1.60mm
FH87334AM3	SOT-23 (3L)	2.90mm × 1.60mm
FH87334AM0	SOT-23 (3L)	2.80mm × 1.20mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Pin Configuration

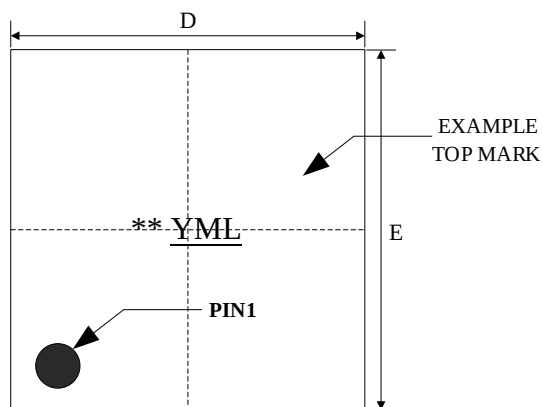
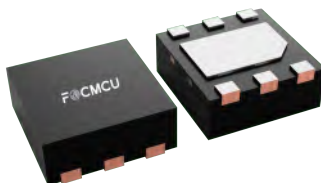
OVP ADJUSTABLE					
SOT-23-5L		SOT-23-6L		FBP1.6*1.6-6L	
TOP VIEW SOT-23-5L		TOP VIEW SOT-23-6L		TOP VIEW FBP1.6*1.6-6L	
OVP FIXED					
SOT-23-6L		SOT-23-3L		SOT-23	
TOP VIEW SOT-23-6L		TOP VIEW SOT-23-3L		TOP VIEW SOT-23	

Pin Description

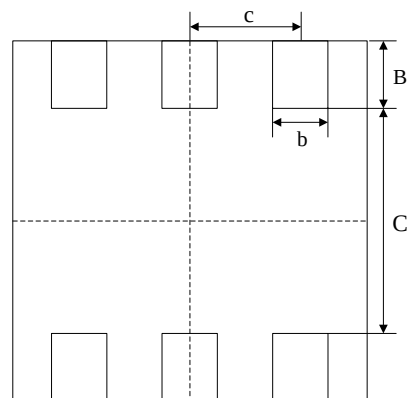
Name	Pin Number						Description
	OVP Fixed			OVP Adjustable			
	SOT-23-3L	SOT-23-6L	SOT-23	SOT-23-5L	SOT-23-6L	FBP1.6-1.6-6L	
OUT	2	4	3	3	3	3	Output voltage (V _{OUT}) pin for the regulator
VIN	3	3	1	4	4	4	Input voltage (V _{IN}) pin for the regulator. Bypass VIN with 0.1uF capacitor as close as possible to the device.
GND	1	1 / 2 / 5 / 6	2	5	6	6	Ground pin. Connect GND pins together for proper operation.
EN	/	/	/	2	2	2	Enable Control (Active low), Driving EN below 0.8 V turns on the regulator. Driving EN over 1.9V puts the regulator into shutdown mode.
ADJ	/	/	/	1	1	1	Adjust pin for adjustable output
VCC	/	/	/	/	5	5	The independent supply voltage for control logic and charge pump, tied to IN in normal application.

Packaging Information

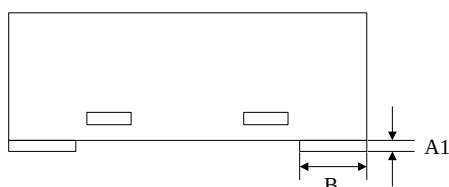
- Package Type: FBP1.6*1.6-6L



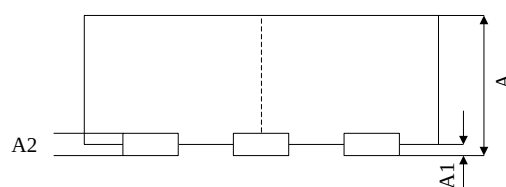
TOP VIEW



BOTTOM VIEW

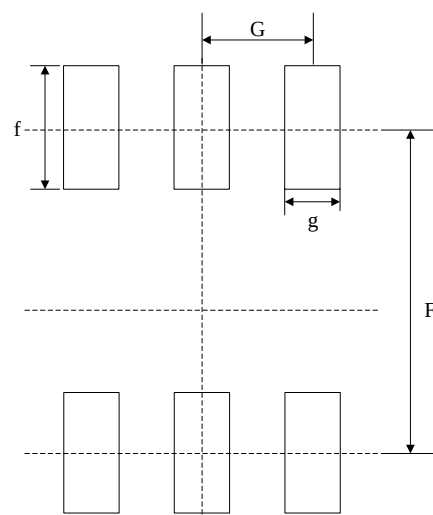


SIDE VIEW A



SIDE VIEW B

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.72	0.76	0.80
A1	0.00	0.03	0.05
A2	0.08	0.13	0.18
B	0.20	0.30	0.40
b	0.17	0.22	0.27
C		1.00	
c		0.50	
D	1.50	1.60	1.70
E	1.50	1.60	1.70
F		1.40	
f		0.55	
G		0.50	
g		0.30	



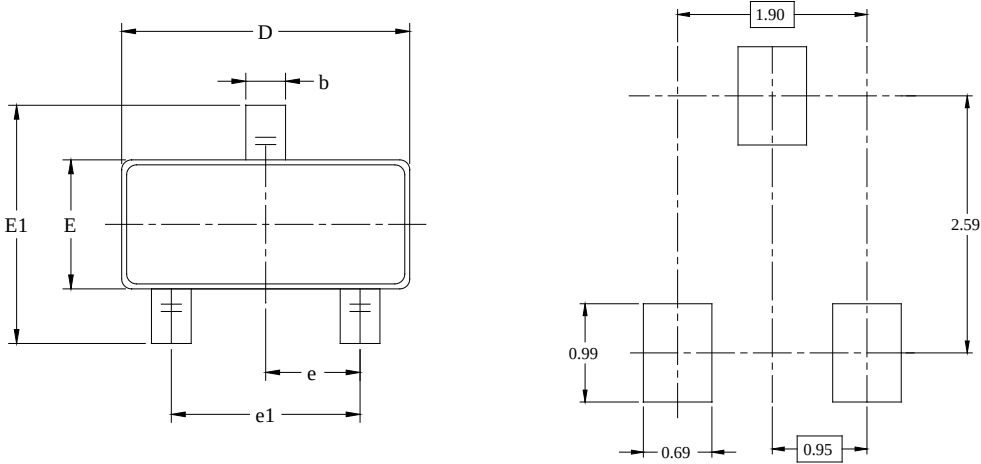
RECOMMENDED LAND PATTERN

NOTE:

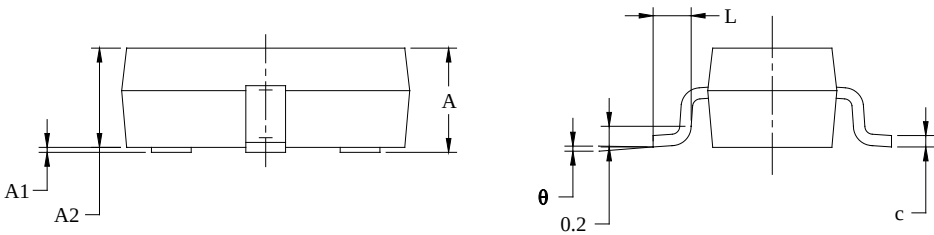
- CONTROL DIMENSION IS IN INCHES. DIMENSION IN BRACKET IS IN MILLIMETERS.
- PACKAGE LENGTH DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
- PACKAGE WIDTH DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSIONS.
- LEAD COPLANARITY (BOTTOM OF LEADS AFTER FORMING) SHALL BE 0.004" INCHES MAX.
- DRAWING CONFORMS TO JEDEC MS-012, VARIATION BA.
- DRAWING IS NOT TO SCALE.

Packaging Information

- Package Type: SOT-23-3L



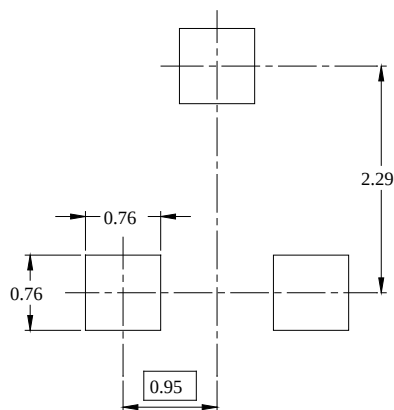
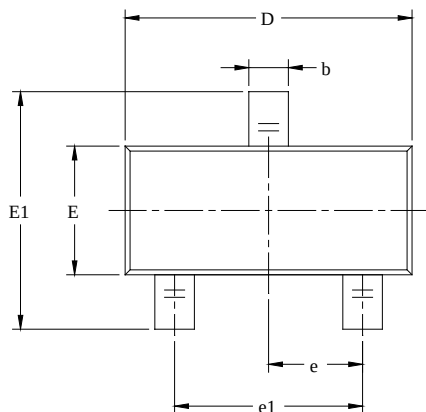
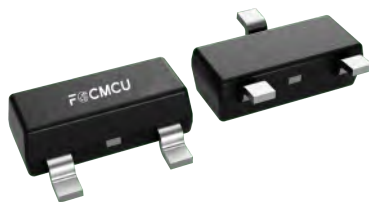
RECOMMENDED LAND PATTERN (Unit: mm)



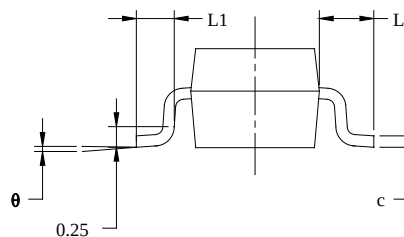
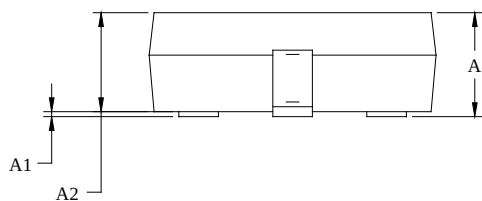
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950 BSC		0.037 BSC	
e1	1.90 0 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Packaging Information

- Package Type: SOT-23



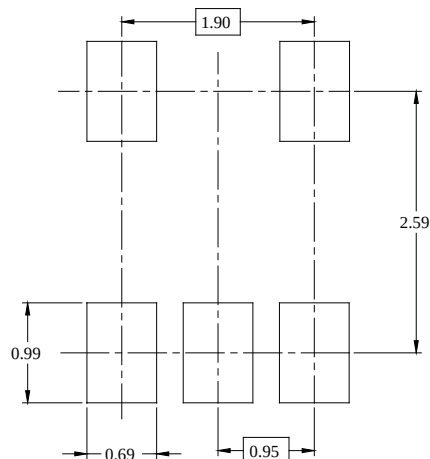
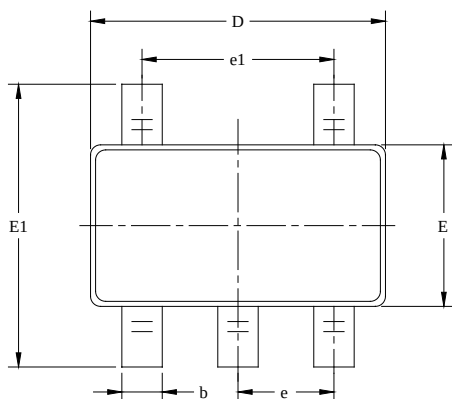
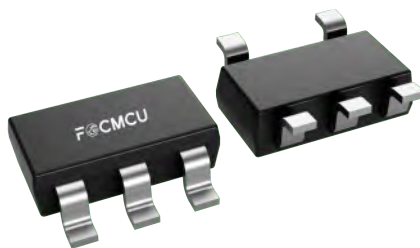
RECOMMENDED LAND PATTERN (Unit: mm)



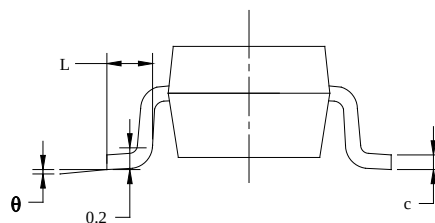
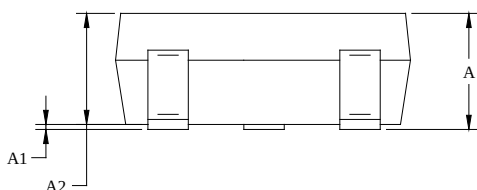
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 BSC		0.037 BSC	
e1	1.900 BSC		0.075 BSC	
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Packaging Information

- Package Type: SOT-23-5L



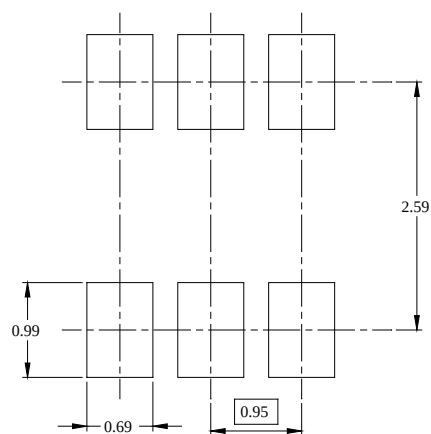
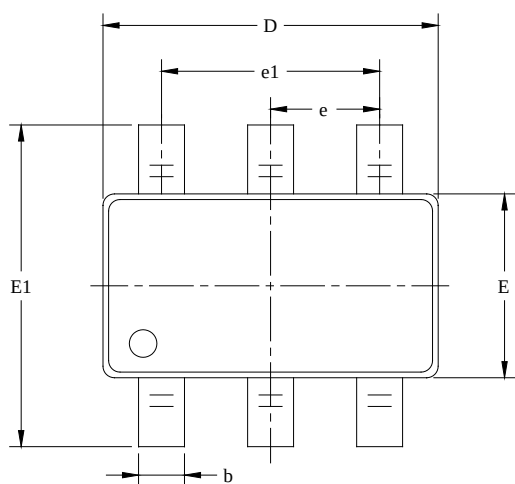
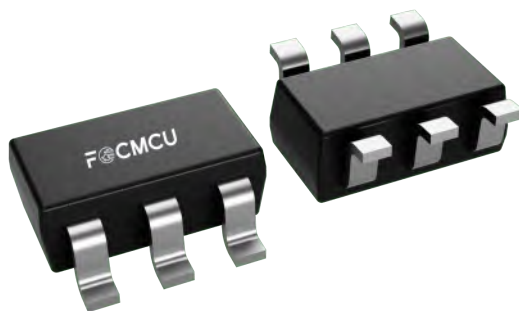
RECOMMENDED LAND PATTERN (Unit: mm)



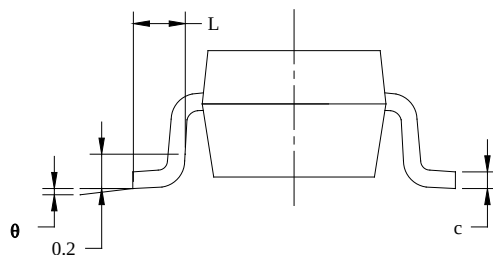
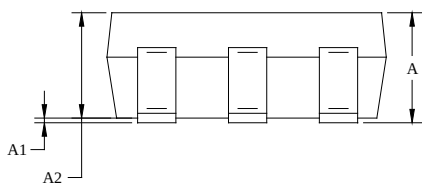
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.25	0.5	0.0098	0.0196
C	0.10	0.23	0.0039	0.0090
D	2.82	3.05	0.1110	0.1200
E	2.60	3.05	0.1023	0.1200
E1	1.50	1.75	0.0590	0.0688
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a0	00	300	00	300

Packaging Information

- Package Type: SOT-23-6L



RECOMMENDED LAND PATTERN (Unit: mm)



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	1.900 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

ORDERING INFORMATION

Part Number	Input Voltage	Output Function	Operating Temperature	Package Type	Top Mark	SPQ
FH87334AM3	3.35V ~ 36V	• OVP fixed 6.5V • Over Current Limit: 4.0A(typ) • Rds(on): 30mΩ(typ)	-40°C to +85°C	SOT-23-3L	*A <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel
FH87334AM0	3.00V ~ 36V		-40°C to +85°C	SOT-23	** <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel
FH87334AM6	3.35V ~ 36V		-40°C to +85°C	SOT-23-6L	*B <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel
FH87334DM5	3.35V ~ 36V	• OVP adjustable	-40°C to +85°C	SOT-23-5L	*C <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel
FH87334DM6	3.35V ~ 36V		-40°C to +85°C	SOT-23-6L	*D <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel
FH87334DU6	3.35V ~ 36V		-40°C to +85°C	FBP1.6*1.6-6L	*E <u>Y</u> <u>M</u> <u>L</u>	3000EA/Reel

Note:

- **FH87334A** | FH87334D**** | | devices are Pb-free and RoHs compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.
- FOCMCU Inc. reserves the right to amend and legally interpret the electrical parameters of this chip device. (<http://www.fordevices.com>)



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▲ Update by Sep.2024