300mA Low Dropout Programmable output CMOS Voltage Regulators

PRELIMINARY DATASHEET

Datasheet Brierf

Description

The FH6118 series are highly precise, low noise, positive voltage LDO regulators manufactured using CMOS processes. The series achieves high ripple rejection and low dropout and consists of a standard voltage source, an error correction, current limiter and a phase compensation circuit plus a driver transistor.

External output feedback, customers can easily get the required voltage. In order to make the load current does not exceed the current capacity of the output transistor, built-in over-current protection, over temperature protection and short circuit protection.

FH6118 may have the POWER GOOD indicator. When the FB voltage reaches 0.75V, PG output is high. When the FB drops below 0.70V, PG output is low. The internal op amp with advanced structure, the output capacitor can be omitted.

Features

- Programmable output: Minimum can go to 0.8V
- Highly Accurate: ±1.5%
- Dropout Voltage: 300mV @ 100mA(3.0V type)
- High Ripple Rejection: 50dB (10kHz)
- Low Power Consumption: 30μA (TYP.)
- Maximum Output Current: 300mA (V_{IN} ≧ V_{OUT}+1V)
- Standby Current: less than 0.1μA
- Internal protector: current limiter, short protect or and over temperature protection
- Instructions with POWER GOOD

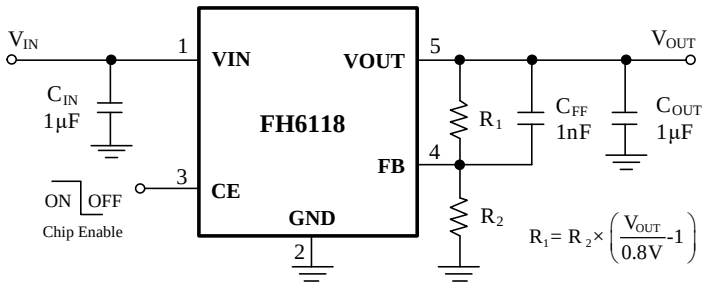
Package Type

- **SOT-23-5L**
- **SOT-23-6L**

Applications

- Mobile phones
- Cordless phones
- Portable games
- Reference voltage
- Cameras, Video cameras
- Portable AV equipment
- Battery powered equipment

Typical Application Circuit



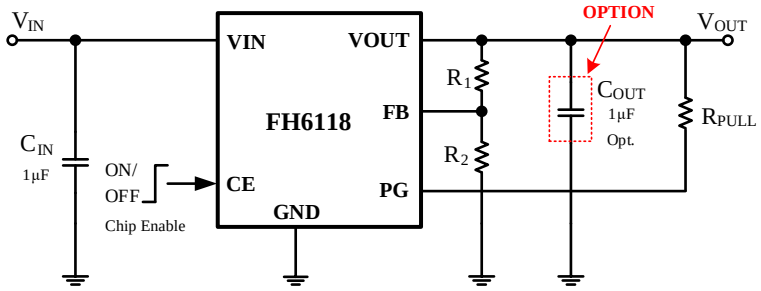


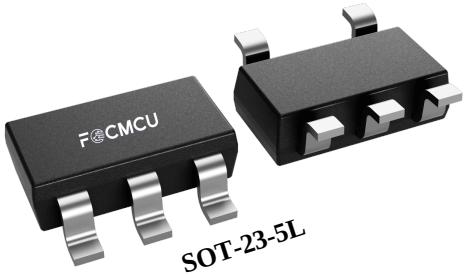
Figure 1. Adjustable Output Version

(SOT-23-5L/SOT-23-6L)

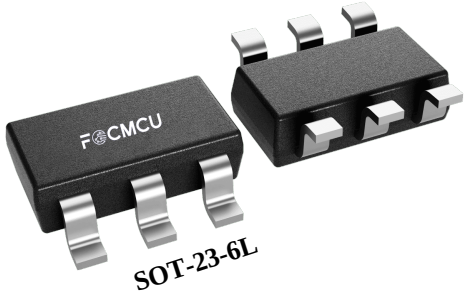
Caution:

The above connection diagram and constant will not guarantee successful operation. Perform thorough evaluation using the actual application to set the constant.

Vout=(1+R1/R2) × 0.8, R1 and R2 must GT 100kΩ.

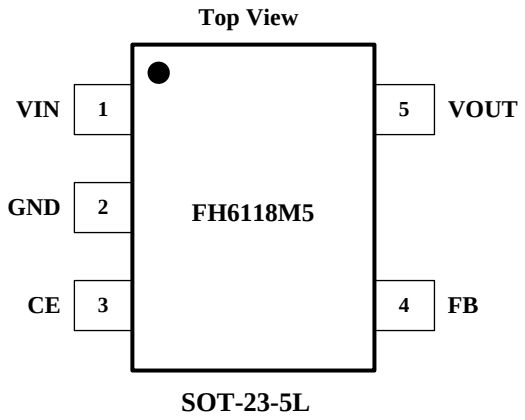


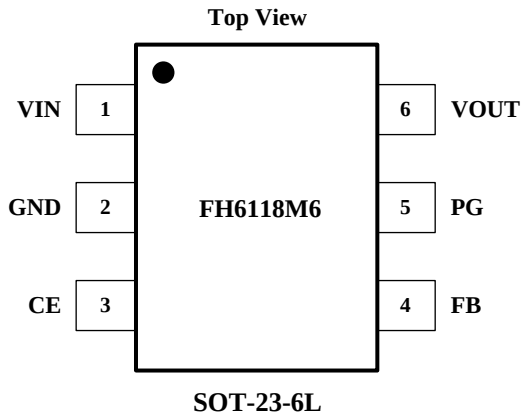
SOT-23-5L



SOT-23-6L

Pin Configurations



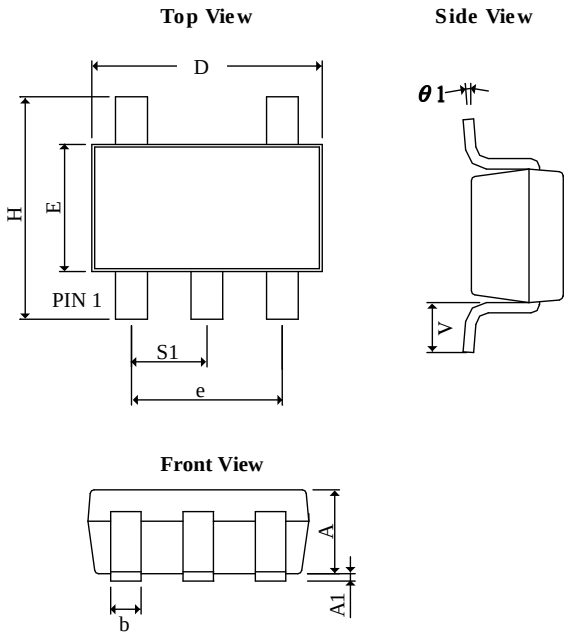


Pin Description

Pin No.		Pin Name	Function
SOT-23-5L	SOT-23-6L		
1	1	VIN	Input voltage pin for the regulator
2	2	GND	Ground
3	3	CE	Enable Control
4	4	FB	FB pin for adjustable output option
/	5	PG	Power Good Pin
5	6	VOUT	Output voltage pin for the regulator

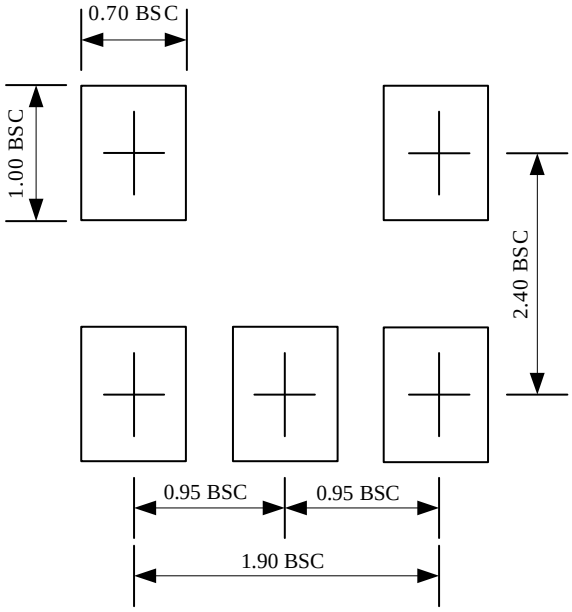
Package Dimension

SOT-23-5L



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.30	0.0354	0.0512
A_1	0.00	0.15	0.0000	0.0059
b	0.30	0.55	0.0118	0.0217
D	2.70	3.10	0.1063	0.1220
E	1.40	1.80	0.0551	0.0709
e	1.90 BSC		0.0748 BSC	
H	2.60	3.00	0.1024	0.1181
L	0.37 BSC		0.0146 BSC	
θ1	0°	10°	0°	10°
S_1	0.95 BSC		0.0374 BSC	

Lead Pattern

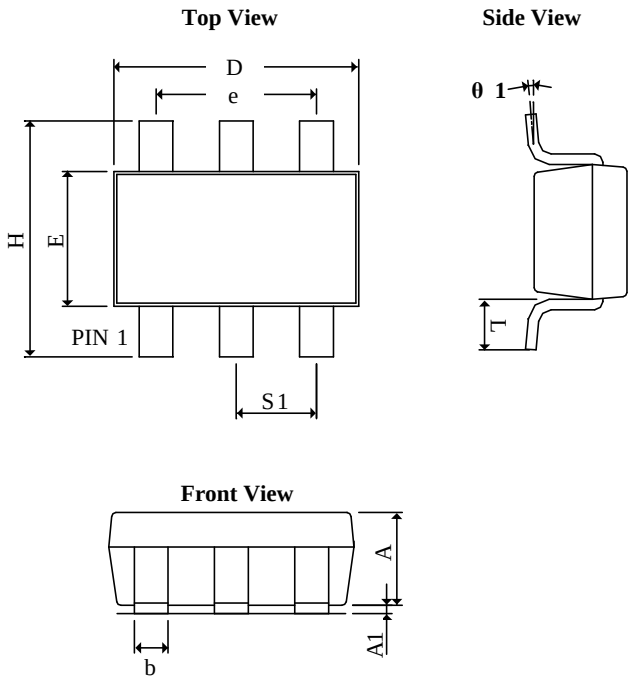


Note:

1. Lead pattern unit description:
   BSC: Basic. Represents theoretical exact dimension or dimension target.
2. Dimensions in Millimeters.
3. General tolerance ± 0.05mm unless otherwise specified.

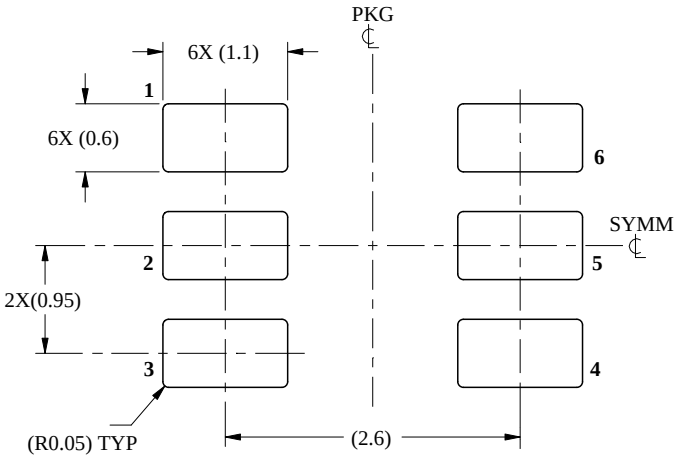
Package Dimension

SOT-23-6L



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.20REF		0.0472REF	
A_1	0.00	0.15	0.0000	0.0059
b	0.30	0.55	0.0118	0.0217
D	2.70	3.10	0.1063	0.1220
E	1.40	1.80	0.0551	0.0709
e	1.90 BSC		0.0748 BSC	
H	2.60	3.00	0.10236	0.11811
L	0.37REF		0.0146REF	
q1	0°	10°	0°	10°
S_1	0.95REF		0.0374REF	

Lead Pattern



SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE:15X

ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH6118M5	2.0 ~ 6.0V	● LDO Vout: ADJ ● Accurate: ±1.5% ● Iout: 300mA ● PSRR: 50dB(10kHz)	-40℃ to +85℃	SOP-23-5L	4 Y M L	3000PCS/Reel
FH6118M6	2.0 ~ 6.0V		-40℃ to +85℃	SOP-23-6L	4 Y M L	3000PCS/Reel

Note:

- **FH6118** 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.
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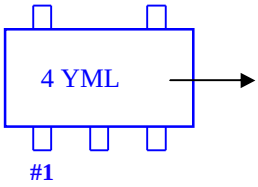
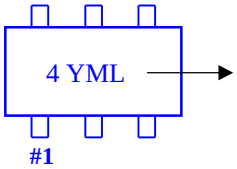
Device Name: SOT-23-5L



4: Device Code
YML: Date Code

Device Name: SOT-23-6L



4: Device Code
YML: Date Code

ESD SENSITIVITY CAUTION

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

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▲ Update by Sep.2022