

### Features

- programmable output: Minimum can go to 0.8V
- Highly Accurate:  $\pm 1.5\%$
- Dropout Voltage: 300mV @ 100mA (3.0V type)
- High Ripple Rejection: 50dB (10 kHz)
- Low Power Consumption: 30 $\mu$ A (TYP.)
- Maximum Output Current : 300mA ( $V_{IN} \geq V_{OUT}+1V$ )
- Standby Current : less than 0.1 $\mu$ A
- Internal protector: current limiter ,short protector and over temperature protection
- Instructions with POWER GOOD
- SOT23-5L packages

### Applications

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

### General Description

The SSP7212-ADJ 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.

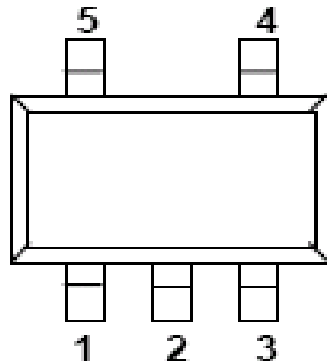
### Order Information

#### SSP7212-ADJ①②

Designator	Symbol	Description
ADJ	Integer	Output Voltage
①	M5	Package:SOT23-5L
②	R	RoHS / Pb Free
	G	Halogen Free

Note:"ADJ" stands for output voltages. Other voltages can be specially customized

### Pin Configuration

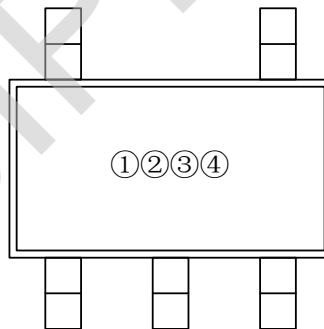


### Pin Assignment

Pin Number	Pin Name	Function
SOT23-5L		
1	VIN	Supply Power
2	VSS	Ground
3	CE	Enable Pin
4	FB	Feedback
5	VOUT	Voltage Output

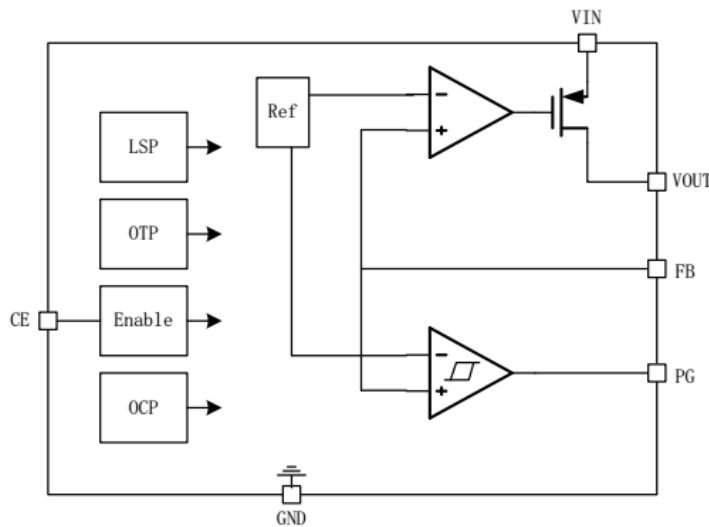
### Marking Rule

- SOT23-5L



Parameter	Content	Description
①	4	Representative SSP7212-ADJ
②	a	Active 'High' (pull-down resistor built in)
	b	<b>Active 'High' (no pull-down resistor built in)</b>
	c	Active 'Low' (pull-up resistor built in)
	d	Active 'Low' (no pull-up resistor built in)
③	a	Representative programmable
④	Defined within the company	Custom Production

### Function Block Diagram

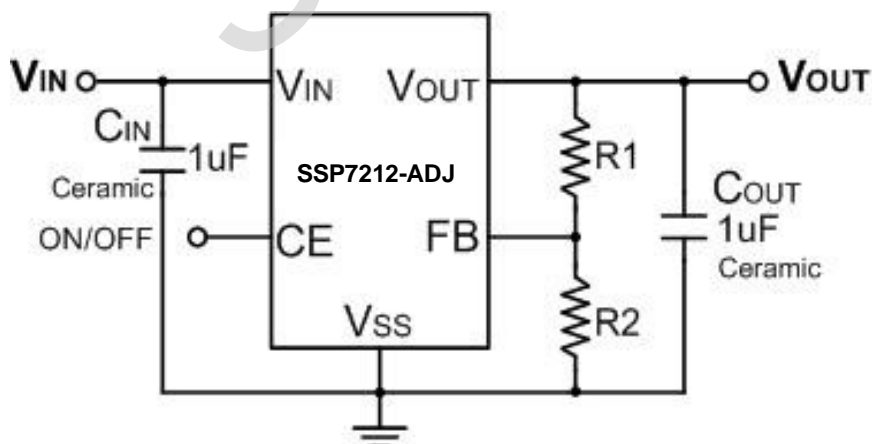


### Absolute Maximum Ratings

Parameter	Symbol	Maximum Rating		Unit
Input Voltage	$V_{IN}$	$V_{SS}-0.3 \sim V_{SS}+6$		V
Enable Voltage	$V_{CE}$	$V_{SS}-0.3 \sim V_{IN}+0.3$		
Feedback voltage	$V_{FB}$	$V_{SS}-0.3 \sim V_{IN}+0.3$		
Output Current	$V_{OUT}$	$V_{SS}-0.3 \sim V_{IN}+0.3$		
Power Dissipation	$P_D$	SOT23-5L	350	mW
Operating Ambient Temperature	$T_{opr}$	-40~+85		°C
Storage Temperature	$T_{stg}$	-40~+125		

**Caution:** The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.

### Typical Application Circuit



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

$$V_{out} = (1 + R1/R2) \times 0.8, \quad R1 \text{ and } R2 \text{ must GT } 100k\Omega.$$

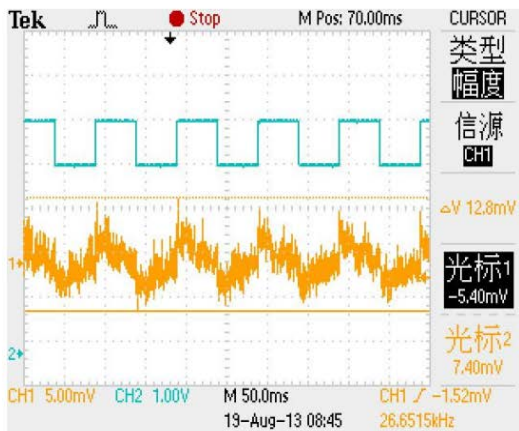
### Electrical Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Feedback Voltage	$V_{FB}$	$V_{IN}=4.2V, V_{OUT}=3.3V, I_{OUT}=30mA$	790	800	810	mV
Output Current	$I_{OUT}$	$V_{IN} \geq V_{OUT(S)} + 1.0V$	300 *5	-	-	mA
Dropout Voltage	$V_{drop}$	$I_{OUT}=50 mA$	-	0.12	0.20	V
		$I_{OUT}=100 mA$	-	0.30	0.45	
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{OUT(S)} + 0.5 V \leq V_{IN} \leq 7V$ $I_{OUT}=30mA$	-	0.10	0.20	%/V
Load Regulation	$\Delta V_{OUT2}$	$V_{IN}=V_{OUT(S)}+1.0 V$ $1.0mA \leq I_{OUT} \leq 100mA$	-	50	100	mV
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{Ta \times V_{OUT}}$	$V_{IN}=V_{OUT(S)}+1.0 V, I_{OUT}=10 mA$ $-40^{\circ}C \leq Ta \leq 85^{\circ}C$	-	$\pm 100$	-	ppm/ $^{\circ}C$
Supply Current	$I_{SS1}$	$V_{IN}=V_{OUT(S)}+1.0 V$	-	30	40	$\mu A$
Shutdown Current	$I_{shut}$	$V_{IN}=5 V, V_{CE}=0$	-	-	0.1	$\mu A$
Input Voltage	$V_{IN}$	—	2.0	-	8	V
Ripple-Rejection	PSRR	$V_{IN}=V_{OUT(S)}+1.0 V, f=1kHz$ $V_{rip}=0.5 V_{rms}, I_{OUT}=50 mA$	-	50	-	dB
Short-circuit Current	$I_{short}$	$V_{IN}=V_{OUT(S)}+1.0V,$ ON/OFF Terminal is ON, $V_{OUT}=0V$	-	30	-	mA
CE "High Voltage	$V_{CEH}$		0.8			V
CE "Low" Voltage	$V_{CEL}$				0.75	V
CE "High Current	$I_{CEH}$	$V_{IN}=V_{CE}=V_{OUT(T)}+1V$	-0.1		0.1	$\mu A$
CE "Low" Current	$I_{CEL}$	$V_{IN}=V_{OUT(T)}+1V, V_{CE}=V_{SS}$	-0.1		0.1	$\mu A$

### Typical Performance Characteristics (Output 3.3V)

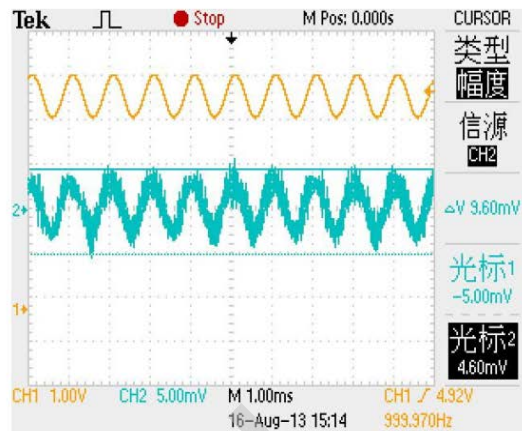
#### 1、 The input voltage transient response

Test Conditions:  $V_{in}=4.3V-5.3V$ ,  $I_{out}=10mA$ ,  $C_{in}=C_{out}=1\mu F$



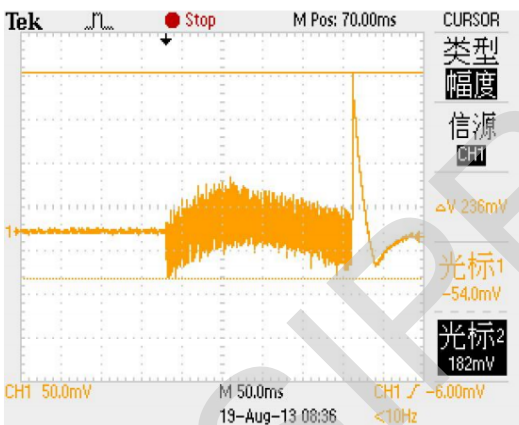
#### 2、 Ripple rejection

Test Conditions:  $V_{in}=4.3V-5.3V$ ,  $I_{out}=10mA$ ,  $C_{in}=C_{out}=1\mu F$



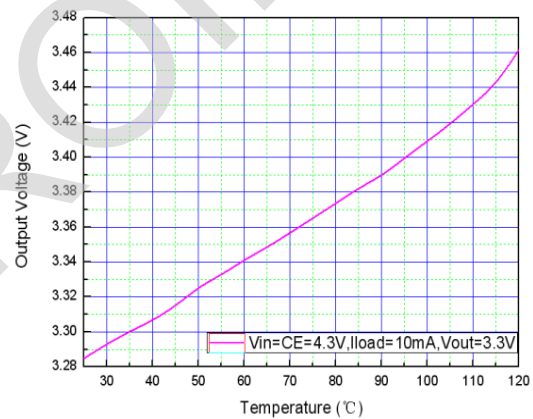
#### 3、 The load transient response

Test Conditions:  $V_{in}=CE=4.3V$ ,  $C_{in}=C_{out}=1\mu F$ ,  $I_{out}=0-100mA$



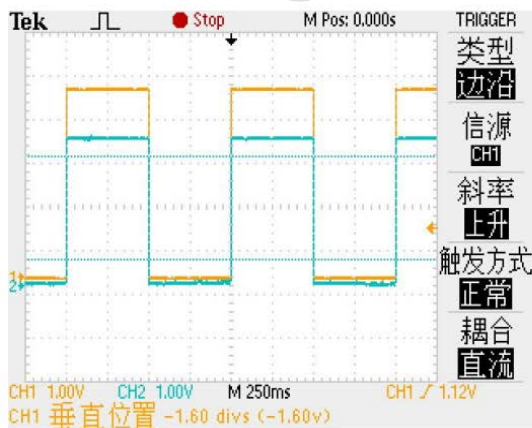
#### 4、 The output voltage temperature curve

Test Conditions:  $V_{in}=CE=4.3V$ ,  $C_{in}=C_{out}=1\mu F$ ,  $I_{out}=10mA$



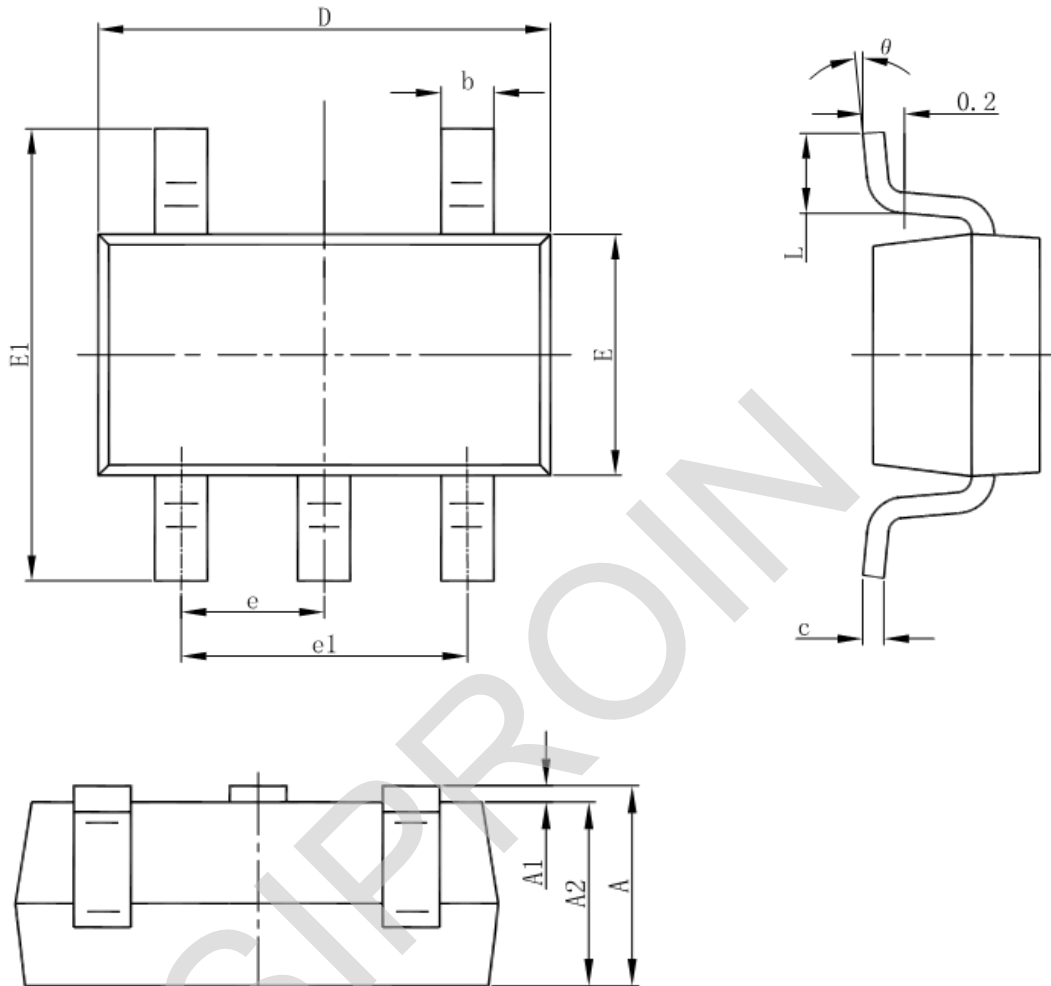
#### 5、 Overshoot

Test Conditions:  $V_{in}=0V-4.3V$ ,  $I_{out}=0mA$ ,  $C_{in}=C_{out}=1\mu F$



### Package Information

- SOT23-5L



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°