



TX6212-adj

300mA Low Power LDO

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 μ A (TYP.)
- Maximum Output Current : 300mA ($V_{IN} \geq V_{OUT} + 1V$)
- Standby Current : less than 0.1 μ A
- Internal protector: current limiter ,short protector and over temperature protection
- Instructions with POWER GOOD
- SOT23-5 package

Applications

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

General Description

The TX6212-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.

TX6212-adj may have the POWER GOOD indicator. When the FB voltage reaches 0.75V , PG output is high . When the FB drops below 0.7V , PG output is low. The internal op amp with advanced structure, the output capacitor can be omitted !

Order Information

TX6212-adj①②

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

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



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Pin Configuration



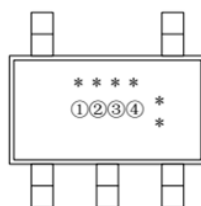
TX6212

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

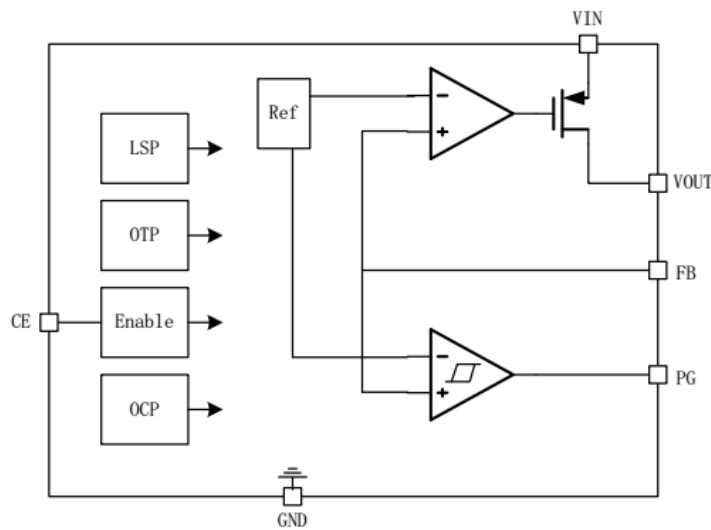
- SOT23-5L



Parameter	Content	Description
①	4	Representative TX6212
②	b	Active 'High' (no pull-down resistor built in)
③	a	Representative programmable
④	Defined within the company	Custom Production
*	Combination “.”	Representative Lot



Function Block Diagram

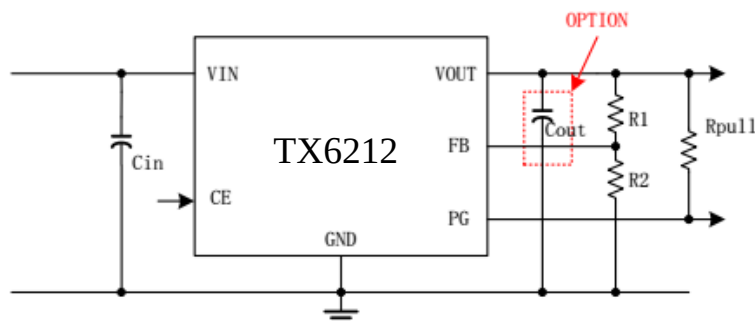


Absolute Maximum Ratings

Parameter	Symbol	Maximum Rating		Unit
Input Voltage	V _{IN}	V _{SS} -0.3~V _{SS} +6		V
Enable Voltage	V _{CE}	V _{SS} -0.3~V _{IN} +0.3		
Feedback voltage	V _{FB}	V _{SS} -0.3~V _{IN} +0.3		
Output Current	V _{OUT}	V _{SS} -0.3~V _{IN} +0.3		
Power Dissipation	P _D	SOT-23-5L	350	mW
Operating Ambient Temperature	Topr	-40~+85		℃
Storage Temperature	Tstg	-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.

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



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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}	$I_{OUT}=50\text{ mA}$	-	0.12	0.20	V
		$I_{OUT}=100\text{ mA}$	-	0.30	0.45	
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$V_{OUT(S)} + 0.5\text{ V} \leq V_{IN} \leq 7V$ $I_{OUT}=30mA$	-	0.30	0.50	%/V
Load Regulation	ΔV_{OUT2}	$V_{IN}=V_{OUT(S)} + 1.0\text{ V}$ $1.0mA \leq I_{OUT} \leq 100mA$	-	50	100	mV
Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{Ta \times V_{OUT}}$	$V_{IN}=V_{OUT(S)} + 1.0\text{ V}, I_{OUT}=10\text{ mA}$ $-40^{\circ}\text{C} \leq Ta \leq 85^{\circ}\text{C}$	-	± 100	-	ppm/ $^{\circ}\text{C}$
Supply Current	I_{SS1}	$V_{IN}=V_{OUT(S)} + 1.0\text{ V}$	-	30	40	$\mu\text{ A}$
Shutdown Current	I_{shut}	$V_{IN}=5\text{ V}, V_{CE}=0$			0.1	$\mu\text{ A}$
Input Voltage	V_{IN}	—	2.0	-	8	V
Ripple-Rejection	PSRR	$V_{IN}=V_{OUT(S)} + 1.0\text{ V}, f=1kHz$ $V_{rip}=0.5\text{ Vrms}, I_{OUT}=50\text{ mA}$	-	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	$\mu\text{ A}$
CE “Low” Current	I_{CEL}	$V_{IN}=V_{OUT(T)} + 1V, V_{CE}=V_{SS}$	-0.1		0.1	$\mu\text{ A}$



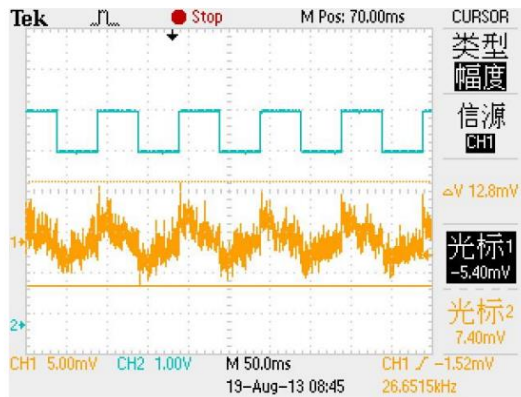
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Typical Performance Characteristics (Output 3.3V)

1、The input voltage transient response

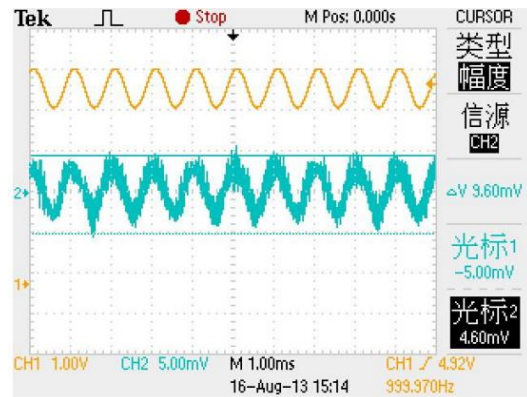
Test Conditions: $V_{in}=4.3V-5.3V$, $I_{out}=10mA$, $C_{in}=C_{out}=1\mu F$



Channel 2 input, channel 1 Output

2、Ripple rejection

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



Channel 1 input, channel 2 Output

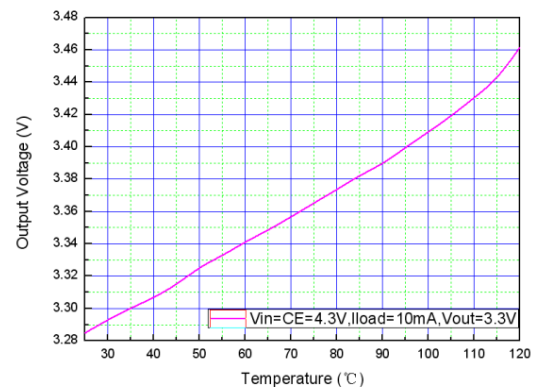
3、The load transient response

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



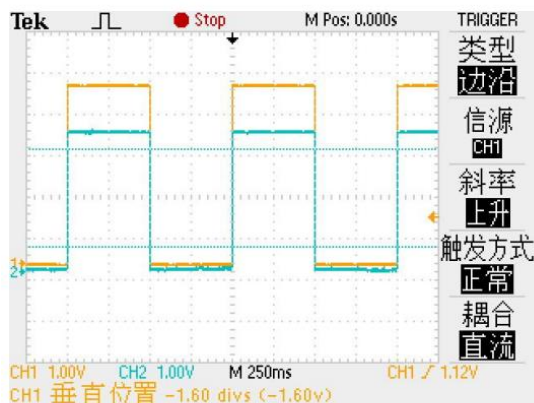
4、The output voltage temperature curve

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



5、Overshoot

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

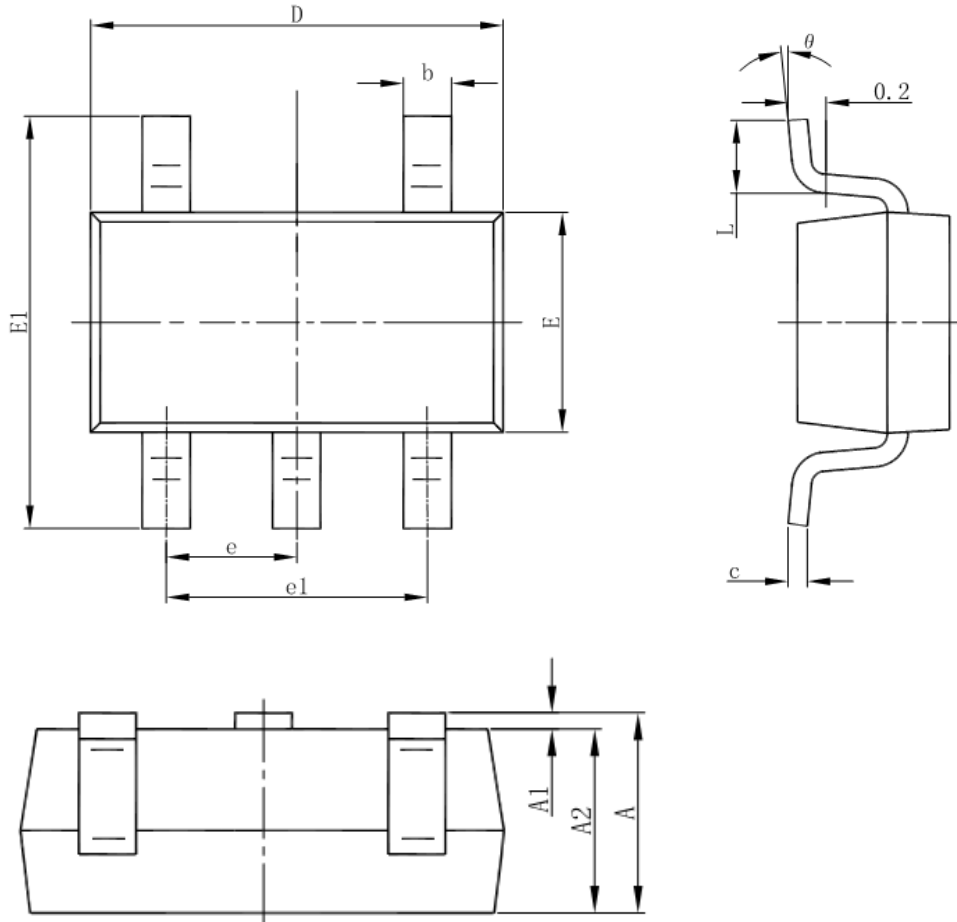


Channel 1 input, channel 2 Output



Package Information

- SOT-23-5L



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°



<http://www.txsemi.com>

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