Low ESR Cap. Compatible Positive Voltage Regulators

Description

FLD6206 series is a CMOS step-down voltage regulator with high ripple rejection, low power consumption, low dropout, overcurrent and short -circuit protection. These devices have a very low static bias current (3.0μA Typ.), which can provide an output current of 300mA even if the difference between the input and output voltages is very small, and still maintain a good egulation rate. Because the voltage difference between input and output is very small and the static bias current is very small, these devices are especially suitable for battery-powered products that want to prolong the battery life, such as computers, consumer products and industrial equipment.The output voltage can be selected from 1.2V to 5V.FLD6206 series are available in SOT23-3 and SOT89 packages.

Features

- Output Voltage Accuracy: tolerance ±2%
- Very low static bias current (Typ. = 3.0uA)
- Low temperature coefficient
- With strong load capacity:when Vin=4.3V and Vout=3.3V,Iout=300mA
- It can be used as regulator and reference voltage
- Package from:SOT89-3,SOT23-3

Applications

- Battery power supply system
- Cordless telephone equipment
- Wireless control system
- Portable/paim computer
- Portable consumer equipment
- Portable instrument
- Automobile electronic equipment
- Voltage reference source

Typical Application

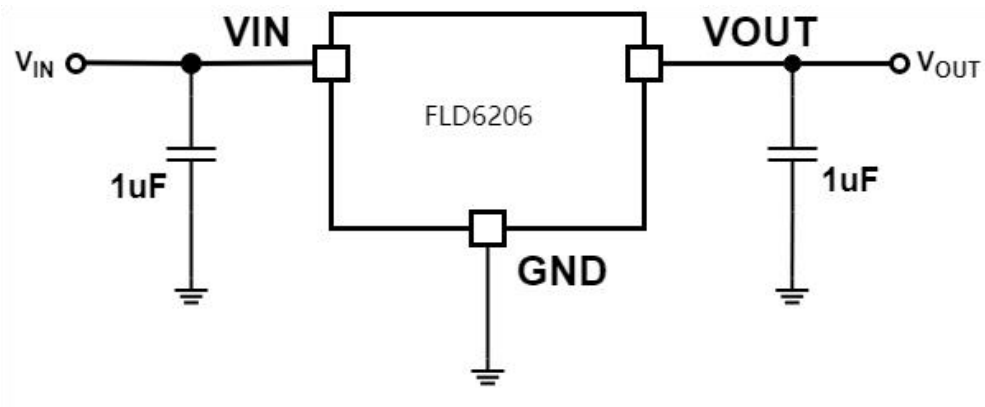
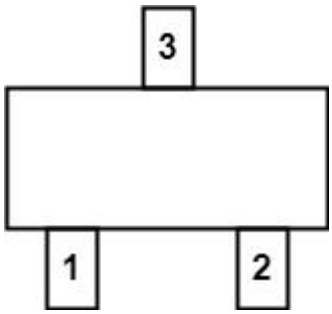
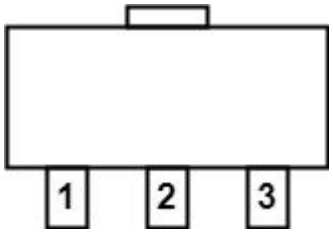


Figure 1.Typicla Application for FLD6206

Pin Configuration



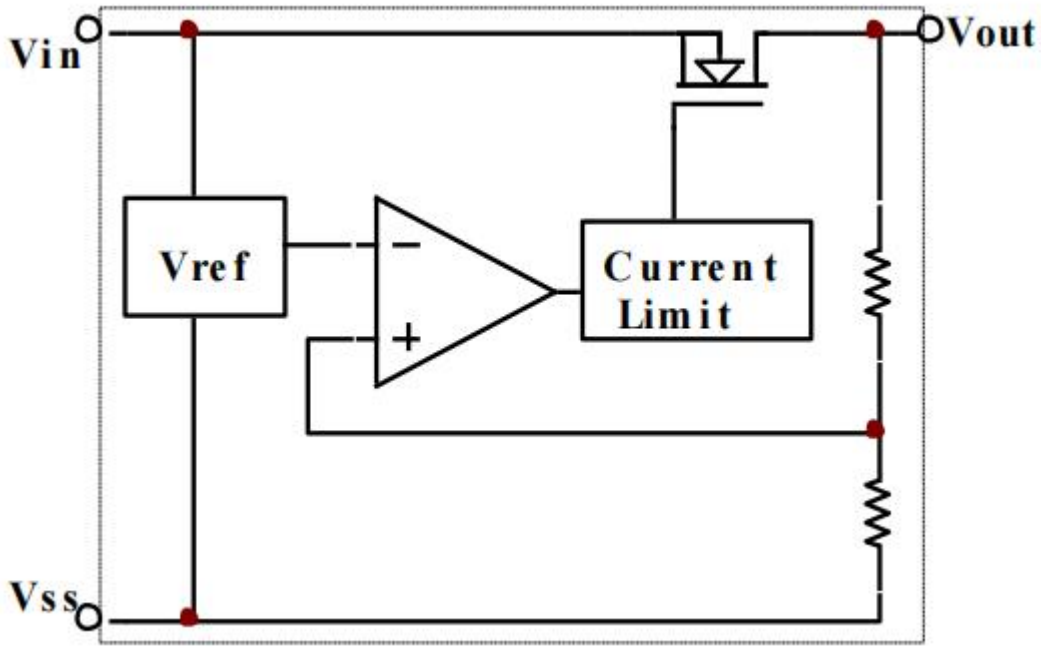
Package SOT23-3



Package SOT89-3

Pin Name	Pin No.SOT89-3	Pin No.SOT23-3	Pin Function
GND	1	1	Ground
VOUT	2	3	Output Voltage Pin
VIN	3	2	Input Voltage pin

Functional Block Diagram



Absolute Maximum Ratings

Projiect	Symbol	Parameter		Limit Value	Unit
Voltage	Vin	Input Voltage		6.5	V
	Vout	Output Voltage		Vss-0.3~Vout+0.3	V
Elect riccurrent	Iout	Output current		300	mA
Power consumption	PD	SOT23-3	Maximum all owable power consumption	300	mW
		SOT89-3		500	
Temperature	Tw	Working temperature		-25~+80	℃
	Tc	Storage temperature		-40~+125	℃
	Th	Welding temperature		260	℃,10s

ELECTRICAL CHARACTERISTICS

C_{IN}=C_{OUT}=1uF, T_J=25℃, unless otherwise specified

Paramter	Symbol	Conditions	Min	Typ	Max	Unit
Output Voltage	V_{OUT}(E)	Vin=Vout(T)+1V, Iout=1mA	V_{OUT}(T)*0.98	V_{OUT}(T)	V_{OUT}(T)*1.02	V
Drop pressure difference	Vdrop	I_{OUT}=50mA, 1.5V≦V_{OUT}(T)≦2.5V		200	280	mV
		I_{OUT}=50mA, 2.6V≦V_{OUT}(T)≦3.3V		160	240	
		I_{OUT}=50mA, 3.4V≦V_{OUT}(T)≦5.5V		120	200	
Quiescent Current	I_{SS}	Vin=Vout(T)+1V		3		uA
Load stability	ΔV_{OUT}	Vin=Vout(T)+1V, 1mA≦I_{OUT}≦80mA		20		mV
Input stsbility	$\Delta V_{OUT}/(\Delta V_{IN}*V_{OUT})$	I_{OUT}=1mA,V_{OUT}(T)=0.5V≦V_{IN}≦5.5V		0.1	0.2	%/V
Output voltage tempera - ture coefficient	$\Delta V_{OUT}/(\Delta Ta*V_{OUT})$	Vin=Vout(T)+1V, I_{OUT}=10mA, -40℃≦Ta≦85℃		±100		ppm /℃
Input Voltage	V_{IN}		1.8		6.5	V
Ripple suppression ratio	PSRR	Vin=[Vout(T)+1]V+1Vp-pAC, I_{OUT}=10mA,f=1khz		40		dB
Short circuit current	Ishort	Vin=Vout(T)+1.5V, V_{OUT}=V_{SS}		30		mA
Over current protection current	Ilimit	Vin=Vout(T)+1.5V		300		mA

Note:

1. V_{OUT}(T):the sepcified output voltage.
2. V_{OUT}(E):effective output voltage(that is,the output voltage when I_{OUT} keeps a certain value and V_{IN} =(V_{OUT}(T)+1.0V)).
3. I_{OUT}(max):VIN=V_{OUT}(T)+1V,slowly increase the output current,and the current value when the output voltage is ≦ V_{OUT}(E)*95%.
4. Vdrop=Vin-Vout(E)s:Vin1=the input voltage when the output voltage drops to 98% of V_{OUT}(E)1.
   V_{OUT}(E)s=V_{OUT}(E)*98%
   V_{OUT}(E)1=the output voltage value when Vin=Vout(T)+1V and Iout=a certain value.

TYPICAL PERFORMANCE CHARACTERISTICS

C_{IN}=C_{OUT}=1uF, T_J=25℃, unless otherwise specified

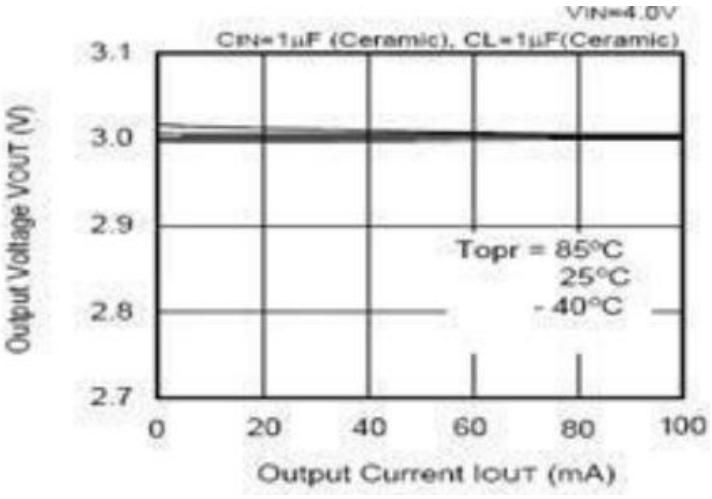


Fig 1 Vout vs Iout

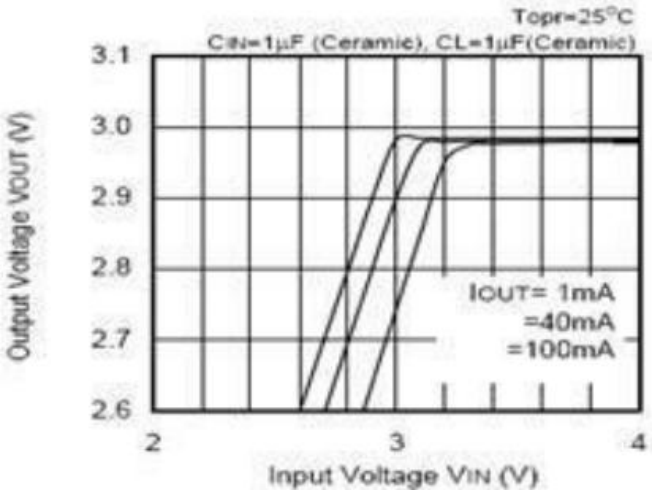


Fig 2. Vout vs Vin

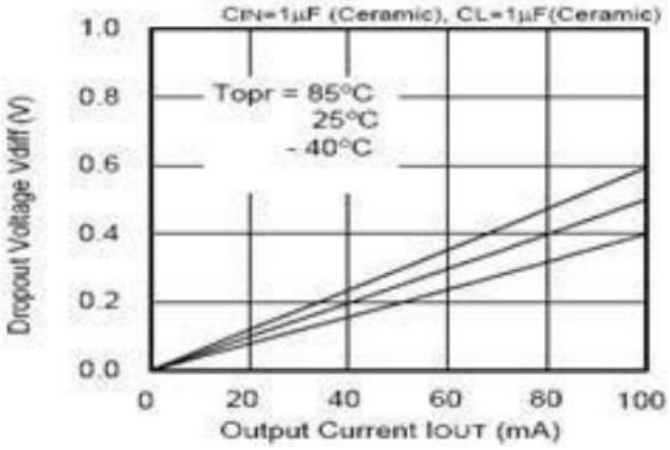


Fig 3. Vdrop vs Iout

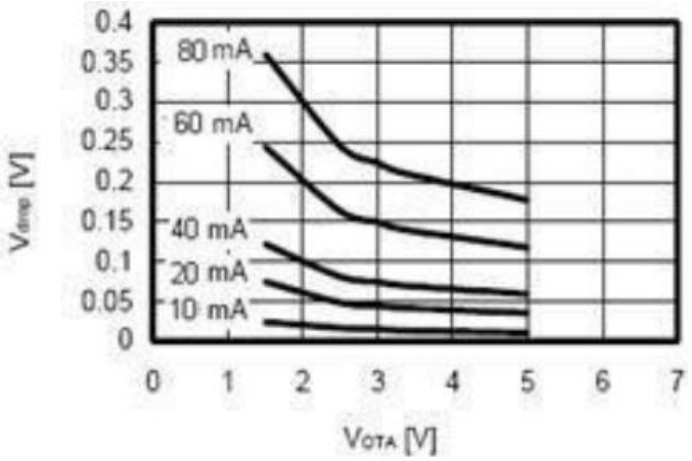


Fig 4. Vdrop VS Vout

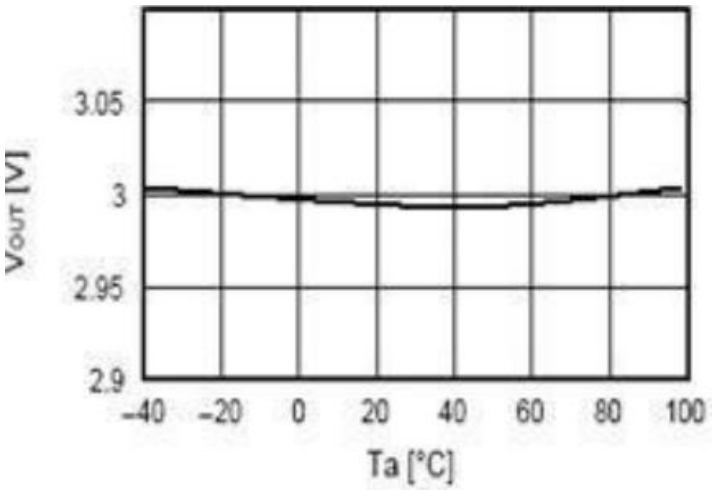


Fig5. Vout vs Temperature

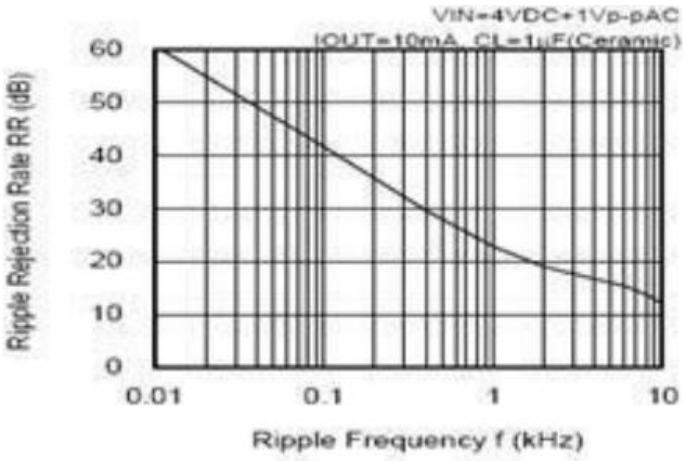
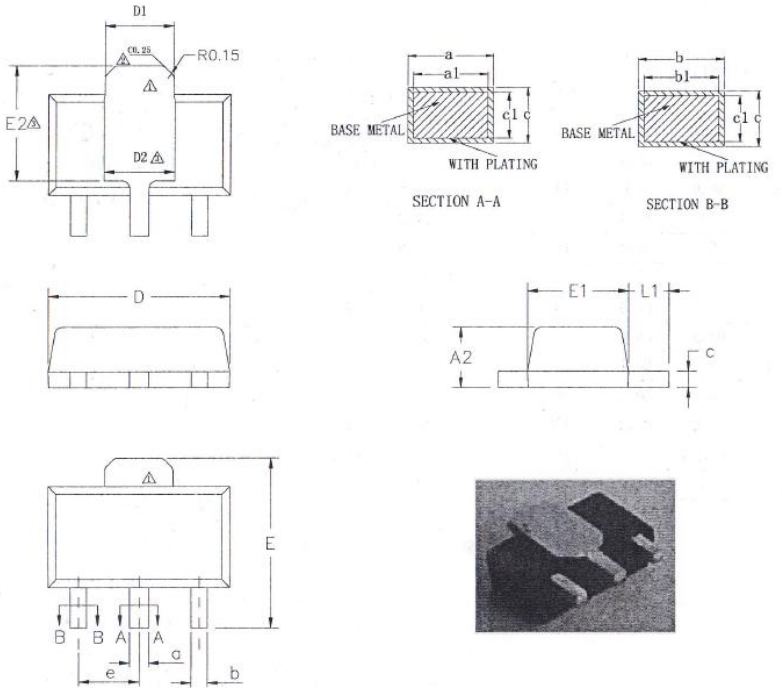


Fig6. Ripple suppression

Package Outline Dimensions(All dimensions in mm.)

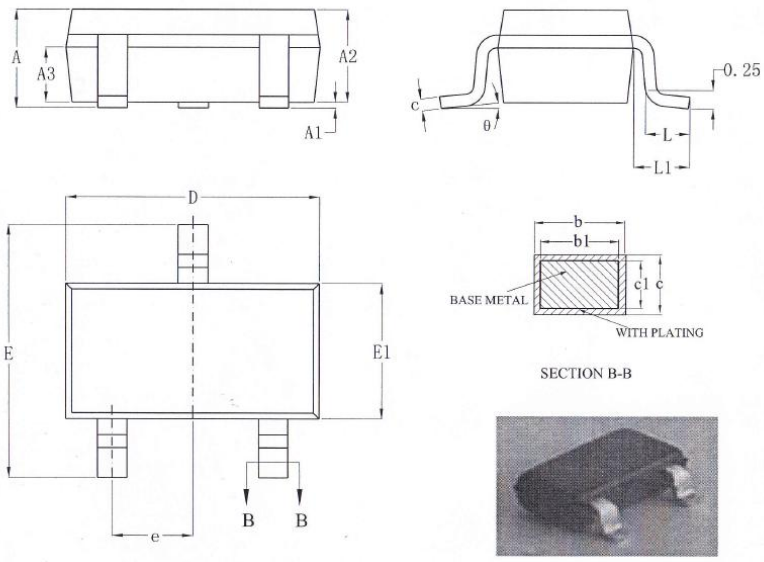
(1) Package Type: SOT89-3



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A2	1.40	1.50	1.60
b	0.38	—	0.46
b1	0.37	0.40	0.43
c	0.38	—	0.42
c1	0.37	0.38	0.39
a	0.46	—	0.56
a1	0.45	0.48	0.51
D	4.40	4.50	4.60
D1	1.62	—	1.83
E	3.95	—	4.25
E1	2.40	2.50	2.60
e	1.50BSC		
L1	0.89	—	1.20

Size(mm) / L/F Size (w1)	D2	E2
66.9*63	1.75REF	2.84REF

(4) Package Type: SOT23-3



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	—	—	1.25
A1	0.04	—	0.10
A2	1.00	1.10	1.20
A3	0.60	0.65	0.70
b	0.33	—	0.41
b1	0.32	0.35	0.38
c	0.15	—	0.19
c1	0.14	0.15	0.16
D	2.82	2.92	3.02
E	2.60	2.80	3.00
E1	1.50	1.60	1.70
e	0.95BSC		
L	0.30	—	0.60
L1	0.60REF		
θ	0	—	8°

Order Information

Mode	VOUT(V)	Package	Ordering Number	Packing Option
FLD6206-1.2	1.2	SOT89-3	FLD6206-1.2YSOT893G/TR	Tape and Reel,1000
FLD6206-1.2	1.2	SOT23-3	FLD6206-1.2YSOT233G/TR	Tape and Reel,3000
FLD6206-1.8	1.8	SOT89-3	FLD6206-1.8YSOT893G/TR	Tape and Reel,1000
FLD6206-1.8	1.8	SOT23-3	FLD6206-1.8YSOT233G/TR	Tape and Reel,3000
FLD6206-2.5	2.5	SOT89-3	FLD6206-2.5YSOT893G/TR	Tape and Reel,1000
FLD6206-2.5	2.5	SOT23-3	FLD6206-2.5YSOT233G/TR	Tape and Reel,3000
FLD6206-3.0	3.0	SOT89-3	FLD6206-3.0YSOT893G/TR	Tape and Reel,1000
FLD6206-3.0	3.0	SOT23-3	FLD6206-3.0YSOT233G/TR	Tape and Reel,3000
FLD6206-3.3	3.3	SOT89-3	FLD6206-3.3YSOT893G/TR	Tape and Reel,1000
FLD6206-3.3	3.3	SOT23-3	FLD6206-3.3YSOT233G/TR	Tape and Reel,3000
FLD6206-3.6	3.6	SOT89-3	FLD6206-3.6YSOT893G/TR	Tape and Reel,1000
FLD6206-3.6	3.6	SOT23-3	FLD6206-3.6YSOT233G/TR	Tape and Reel,3000

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- We reserves the right to change the instruction manual without prior notice.
- Any semiconductor product has a certain possibility of failure or malfunction under specific conditions. The buyer is responsible for complying with safety standards and taking safety measures when using our products for system design and overall manufacturing to avoid potential failure risks that may cause personal injury or property damage.
- The improvement of product quality is endless, our company will be dedicated to provide customers with better products

Version Modification Record

Version Number	Revision
first edition	

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