Low dropout micro power consumption LDO JC53XX series

CMOS voltage regulator circuit 500mA

JC53XX series are low dropout, high precision output developed using CMOS technology
Voltage, ultra-low power consumption current, positive voltage type voltage regulator circuit. Due to built-in
Low on-resistance transistor, so the input and output voltage difference is low. Maximum working voltage can
Up to 10V, suitable for application circuits requiring higher withstand voltage.

■ Features:

·High output voltage accuracy.	Accuracy ±2%
·The input and output pressure difference is low.	Typical value 15mV Iout=1mA
·Ultra-low power consumption current.	Typical value 1.2uA
·Low output voltage temperature drift	Typical value 50 PPm / ℃
·Input withstand voltage.	Increase to 10V to maintain output regulation
·Output short circuit protection	Short circuit current 50 mA

■ Purpose:

· Regulated power supply using battery-powered equipment
·Stabilized power supply for communication equipment
·Stabilized power supply for home appliances and toys
·Stabilized power supply for mobile phones
·Portable Medical Instrument Power Supply

■ Product catalog

model	Output voltage (Note)	error	Print **MARK** **SOT-89 TO-92**	Print **MARK** **SOT-23-3**
JC5312	1.2V	±2%	M5312B	5312B
JC5315	1.5V	±2%	M5315B	5315B
JC5317	1.7V	±2%	M5317B	5317B
JC5318	1.8V	±2%	M5318B	5318B
JC5321	2.1V	±2%	M5321B	5321B
JC5325	2.5V	±2%	M5325B	5325B
JC5327	2.7V	±2%	M5327B	5327B
JC5328	2.8V	±2%	M5328B	5328B
JC5330	3.0V	±2%	M5330B	5330B
JC5333	3.3V	±2%	M5333B	5333B
JC5336	3.6V	±2%	M5336B	5336B
JC5338	3.8V	±2%	M5338B	5338B
JC5344	4.4V	±2%	M5344B	5344B
JC5350	5.0V	±2%	M5350B	5350B

Note **:** If you want to use products other than the above output voltage range, customers can request customization. The output voltage range is 1.2V~7V, every 0.1V Subdivide.

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Package type and pin **:**

Absolute maximum ratings: (Unless otherwise specified: Ta=25°C)

project	mark	Absolute maximum rating	unit
Input voltage	V_{IN}	12	V
The output voltage	V_{OUT}	V_{ss} -0.3~ V_{IN} +0.3	
Allowable power consumption	P_D	SOT_89 500 TO_92 300 SOT_23 200	Mw
Working temperature range	T_{opr}	-40~+85	°C
Save the ambient temperature range	T_{stg}	-40~+125	

Note that the absolute maximum rating refers to the rating that cannot be exceeded under any conditions.

If this rating is exceeded, it may cause physical damage such as product deterioration.

■ Electrical properties:

JC53XX series (JC5312, output voltage +1.2V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} =2. 2V, I_{OUT} =40mA	1.176	1.2	1.224	V	1
Output current *1	I_{OUT}	V_{IN} = 2.2V	180			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		25	35	mV	1
		I_{OUT} =100 mA		280	380		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	2.2V≤V_{IN}≤ 10V I_{OUT} =10mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =2.2V 1.0mA≤I_{OUT}≤ 100mA		15	30	mV	
Output voltage temperature system number	ΔV_{OUT} / $\Delta Ta \cdot V_{OUT}$	V_{IN} =2.2V, I_{OUT} =1mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5315, output voltage +1.5V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} =2. 5V, I_{OUT} =40mA	1.470	1.5	1.530	V	1
Output current *1	I_{OUT}	V_{IN} = 2.5V	220			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		20	28	mV	1
		I_{OUT} =100 mA		200	280		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	2.5V≤V_{IN}≤ 10V I_{OUT} =10mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =2.5V 1.0mA≤I_{OUT}≤ 100mA		15	30	mV	
Output voltage temperature system number	ΔV_{OUT} / $\Delta Ta \cdot V_{OUT}$	V_{IN} =2.5V, I_{OUT} =1mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

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JC53XX series (JC5317, output voltage +1.7V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} =2.7V, I_{OUT} =40mA	1.666	1.7	1.734	V	1
Output current *1	I_{OUT}	V_{IN} = 2.7V	260			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		17	twenty four	mV	1
		I_{OUT} =100 mA		160	240		

Input stability	△V OUT1 △V IN ·V OUT	2.7V≤V IN≤ 10V I OUT =1mA		0.05	0.2	%/V	
Load stability	△V OUT2	V IN =2.7V 1.0mA≤I OUT≤ 150mA		30	45	mV	
Output voltage temperature system number	△V OUT △Ta·V OUT	V IN =2.7V, I OUT =1mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I SS1	V IN =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5318, output voltage +1.8V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V OUT	V IN =2. 8V, I OUT =40mA	1.764	1.8	1.836	V	1
Output current *1	I OUT	V IN = 2.8V	280			mA	3
Input and output pressure *2	V drop	I OUT =10 mA		15	twenty one	mV	1
		I OUT =100 mA		140	210		
Input stability	△V OUT1 △V IN ·V OUT	2.8V≤V IN≤ 10V I OUT =1mA		0.05	0.2	%/V	
Load stability	△V OUT2	V IN =2.8V 1.0mA≤I OUT≤ 150mA		30	45	mV	
Output voltage temperature system number	△V OUT △Ta·V OUT	V IN =2.8V, I OUT =1mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I SS1	V IN =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5321, output voltage +2.1V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V OUT	V IN = 3.1V, I OUT =40mA	2.058	2.1	2.142	V	1
Output current *1	I OUT	V IN = 3.1V	320			mA	3
Input and output pressure *2	V drop	I OUT =10 mA		13	18	mV	1
		I OUT =100 mA		130	180		
Input stability	△V OUT1 △V IN ·V OUT	3.1V≤V IN≤ 10V I OUT =1mA		0.05	0.2	%/V	
Load stability	△V OUT2	V IN =3.1V 1.0mA≤I OUT≤ 150mA		30	45	mV	
Output voltage temperature system number	△V OUT △Ta·V OUT	V IN =3.1V, I OUT =10mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I SS1	V IN =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5325, output voltage +2.5V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V OUT	V IN = 3.5V, I OUT = 50mA	2.450	2.5	2.550	V	1
Output current *1	I OUT	V IN = 3.5V	350			mA	3
Input and output pressure *2	V drop	I OUT =10 mA		12	17	mV	1
		I OUT =100 mA		120	170		
Input stability	△V OUT1 △V IN ·V OUT	3.5V≤V IN≤ 10V I OUT =1mA		0.05	0.2	%/V	
Load stability	△V OUT2	V IN =3.5V 1.0mA≤I OUT≤ 150mA		30	45	mV	
Output voltage temperature system number	△V OUT △Ta·V OUT	V IN =3.5V, I OUT =10mA -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I SS1	V IN =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5327, output voltage +2.7V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 3.7V, I_{OUT} =50mA	2.646	2.7	2.754	V	1
Output current *1	I_{OUT}	V_{IN} = 3.7V	400			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		12	18	mV	1
		I_{OUT} =200 mA		220	300		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	3.7V≤V_{IN}≤ 10V, I_{OUT} =1mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =3.7V, 1.0mA≤I_{OUT}≤ 150mA		25	40	mV	
Output voltage temperature system number	ΔV_{OUT} / $\Delta Ta \cdot V_{OUT}$	V_{IN} =3.7V, I_{OUT} =10mA, -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5328, output voltage +2.8V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 3.8V, I_{OUT} =50mA	2.744	2.8	2.856	V	1
Output current *1	I_{OUT}	V_{IN} = 3.8V	400			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		12	18	mV	1
		I_{OUT} =200 mA		220	300		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	3.8V≤V_{IN}≤ 10V, I_{OUT} =1mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =3.8V, 1.0mA≤I_{OUT}≤ 150mA		25	40	mV	
Output voltage temperature system number	ΔV_{OUT} / $\Delta Ta \cdot V_{OUT}$	V_{IN} =3.8V, I_{OUT} =10mA, -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

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JC53XX series (JC5330, output voltage +3.0V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 4V, I_{OUT} =50mA	2.940	3.0	3.060	V	1
Output current *1	I_{OUT}	V_{IN} = 4V	450			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200 mA		200	280		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	4V≤V_{IN}≤ 10V, I_{OUT} =1mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =4V, 1.0mA≤I_{OUT}≤ 200mA		30	45	mV	
Output voltage temperature system number	ΔV_{OUT} / $\Delta Ta \cdot V_{OUT}$	V_{IN} =4V, I_{OUT} =10mA, -40°C≤Ta≤85°C		±50	±100	Ppm/°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5333, output voltage +3.3V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 4.3V, I_{OUT} =50mA	3.234	3.3	3.366	V	1
Output current *1	I_{OUT}	V_{IN} = 4.3V	500			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200 mA		200	280		
Input stability	ΔV_{OUT1} / $\Delta V_{IN} \cdot V_{OUT}$	4.3V≤V_{IN}≤ 10V, I_{OUT} =1mA		0.05	0.2	%/V	
Load stability	ΔV_{OUT2}	V_{IN} =4.3V, 1.0mA≤I_{OUT}≤ 200mA		30	45	mV	
Output voltage temperature system	ΔV_{OUT}	V_{IN} =4.3V, I_{OUT} =10mA		±50	±100	Ppm/	

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
number	$\Delta Ta \cdot V_{OUT}$	-40°C≤Ta≤85°C				°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5336, output voltage +3.6V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 4.6V, I_{OUT} =50mA	3.528	3.6	3.672	V	1
Output current *1	I_{OUT}	V_{IN} = 4.6V	500			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200mA		200	280		
Input stability	ΔV_{OUT1}	4.6V≤V_{IN}≤ 10V		0.05	0.2	%/V	
	$\Delta V_{IN} \cdot V_{OUT}$	I_{OUT} =1mA					
Load stability	ΔV_{OUT2}	V_{IN} =4.6V		30	45	mV	
		1.0mA≤I_{OUT}≤ 200mA					
Output voltage temperature system	ΔV_{OUT}	V_{IN} =4.6V, I_{OUT} =10mA		±50	±100	Ppm/	
number	$\Delta Ta \cdot V_{OUT}$	-40°C≤Ta≤85°C				°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

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JC53XX series (JC5338, output voltage +3.8V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 4.8V, I_{OUT} =50mA	3.724	3.8	3.876	V	1
Output current *1	I_{OUT}	V_{IN} = 4.8V	500			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200mA		200	280		
Input stability	ΔV_{OUT1}	4.8V≤V_{IN}≤ 10V		0.05	0.2	%/V	
	$\Delta V_{IN} \cdot V_{OUT}$	I_{OUT} =1mA					
Load stability	ΔV_{OUT2}	V_{IN} =4.8V		30	45	mV	
		1.0mA≤I_{OUT}≤ 200mA					
Output voltage temperature system	ΔV_{OUT}	V_{IN} =4.8V, I_{OUT} =10mA		±50	±100	Ppm/	
number	$\Delta Ta \cdot V_{OUT}$	-40°C≤Ta≤85°C				°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5344, output voltage +4.4V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit
The output voltage	V_{OUT}	V_{IN} = 5.4V, I_{OUT} =50mA	4.312	4.4	4.488	V	1
Output current *1	I_{OUT}	V_{IN} = 5.4V	500			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200mA		200	280		
Input stability	ΔV_{OUT1}	5.4V≤V_{IN}≤ 10V		0.05	0.2	%/V	
	$\Delta V_{IN} \cdot V_{OUT}$	I_{OUT} =1mA					
Load stability	ΔV_{OUT2}	V_{IN} =5.4V		30	45	mV	
		1.0mA≤I_{OUT}≤ 200mA					
Output voltage temperature system	ΔV_{OUT}	V_{IN} =5.4V, I_{OUT} =10mA		±50	±100	Ppm/	
number	$\Delta Ta \cdot V_{OUT}$	-40°C≤Ta≤85°C				°C	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			10	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

JC53XX series (JC5350, output voltage +5.0V) (Unless otherwise specified: Ta=25°C)

project	mark	condition	The smallest value	typical value	maximum value	unit	Determination Circuit

The output voltage	V_{OUT}	V_{IN} = 6V, I_{OUT} = 50mA	4.900	5.0	5.100	V	1
Output current *1	I_{OUT}	V_{IN} = 6V	500			mA	3
Input and output pressure *2	V_{drop}	I_{OUT} =10 mA		10	14	mV	1
		I_{OUT} =200 mA		200	280		
Input stability	$\triangle V_{OUT1}$ $\triangle V_{IN} \cdot V_{OUT}$	6V≤V_{IN}≤ 10V I_{OUT} =1mA		0.05	0.2	%/V	
Load stability	$\triangle V_{OUT2}$	V_{IN} =6V 1.0mA≤I_{OUT}≤ 200mA		30	45	mV	
Output voltage temperature system number	$\triangle V_{OUT}$ $\triangle Ta \cdot V_{OUT}$	V_{IN} =6V, I_{OUT} =10mA -40℃≤Ta≤85℃		±50	±100	Ppm/ ℃	
Current consumption	I_{SS1}	V_{IN} =10V without load		1.2	2.5	uA	2
Input voltage	VIN	-			15	V	
Output short circuit current	Ilim	Vout=0V		50	70	mA	

* 1.Slowly increase the output current, when the output voltage is equal to 98% of V_{OUT} , the output current value

2.$V^{*}_{drop} = V_{IN1} - (V_{OUT(E)} \times 0.98V)$

$V_{OUT(E)}$: The output voltage value when $V_{IN} = V_{OUT} + 2V$, I_{OUT} =1 mA

V_{IN1} : Slowly decrease the output voltage, the input voltage when the output voltage drops to 98% of $V_{OUT(E)}$

Application circuit :

Test circuit:

1.

2.

3.

Standard circuit:

Note that the above connection diagrams and parameters are not a guarantee for circuit operation. For the actual application circuit, please conduct sufficient actual measurement Set the parameters on the basis.

■ Conditions of use:

Input capacitor (CIN): 1.0 μF or more

Output capacitor (CL): 2.2 μF or more (tantalum capacitor) or 10.0 μF or more (aluminum electrolytic capacitor).

Note that in general, linear stabilized power supplies may cause oscillations due to the selection of external parts. Please confirm before using the above capacitor No oscillation occurs on the application circuit.

■ Explanation of terms

1. Low dropout voltage regulator

   A low-dropout voltage regulator with a built-in low on-resistance transistor is used.

2. Output voltage (V_{OUT})

   Output voltage, input voltage*1, output current, and temperature can guarantee output voltage accuracy under certain conditions Is +2.0%.

   *1. Varies depending on the product.

   Note that when these conditions change, the value of the output voltage also changes, which may cause the output The accuracy of the voltage is outside the above range. For details, please refer to electrical characteristics and each characteristic data.

3. Input stability $\{\Delta V_{OUT1} / \Delta V_{IN} * V_{OUT}\}$

   Indicates the dependence of output voltage on input voltage. That is, when the output current is constant, the output voltage changes with the input power The amount of change caused by the change in pressure.

4. Load stability (ΔV_{OUT2})

   Indicates the dependence of output voltage on output current. That is, when the input voltage is constant, the output voltage varies with the output voltage The amount of change caused by a change in flow.

5. Input and output voltage difference (Vdrop)

   Represents the output when the input voltage V_{IN} is slowly reduced , when the output voltage drops to $V_{IN} = V_{OUT} + 2.0V$

   The difference between the input voltage VIN1 and the output voltage at 98% of the output voltage $V_{OUT(E)}$.

   $V_{drop} = V_{IN1} - (V_{OUT(E)} \times 0.98)$

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■ Job description

1. Basic work

Figure 11 shows the block diagram of the JC53XX series.

The error amplifier is based on the input voltage Vfb of the voltage divider formed by the feedback resistors Rs and Rf with the reference voltage (Vref) Compare. The error amplifier provides the necessary gate voltage to the output transistor, and the output

The output voltage is not affected by the input voltage or temperature changes and remains constant.

VIN

Constant current source *1

Error amplifier

VOUT

Vref - Rf

+

Vfb

Reference voltage circuit

Rs

VSS

*1. Parasitic diode

2. Output transistor

The output transistor of JC53XX series adopts P-channel MOSFET transistor with low on-resistance.

In the structure of the transistor, because there is a parasitic diode between the VIN-VOUT terminal, when the potential of VOUT is high At VIN, the IC may be destroyed due to reverse current. Therefore, please note that VOUT should not exceed V IN+0.3V or more.

3. Short circuit protection circuit

The JC53XX series is designed to The output transistor is protected during a short-circuit between the terminals. Short-circuit protection can be selected even in VOUT-VSS In the case of a short circuit between the terminals, the output current can be suppressed by approximately 40 mA.

However, the short-circuit protection circuit does not have a heating protection function. Under the operating conditions including short-circuit conditions, please fully Pay attention to the conditions of input voltage and load current to ensure that the power dissipation of the IC does not exceed the power dissipation of the package. Even when there is If the output current is large and the voltage difference between input and output is large, in order to protect the output transistor short circuit protection The circuit starts to work, and the current is limited to the set value.

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Selection of output capacitor (**CL**)

In the JC53XX series, in order to make stable operation even when the output load changes, it uses The phase compensation circuit and the ESR (Equivalent Series Resistance) of the output capacitor come in Line phase compensation. Therefore, please use a capacitor (CL) of 2.2uF or more between VOUT and VSS.

In order to make the JC53XX series work stably, a capacitor with an appropriate range of ESR must be used. With appropriate
The range (about 0.5~5Ω) is larger or smaller than ESR, which may make the output unstable and cause oscillation. Therefore, push
Tantalum electrolytic capacitors are recommended.

When ceramic capacitors or OS capacitors with small ESR are used, it is necessary to increase the resistance and
The output capacitor is connected in series. The resistance value to be increased is about 0.5~5Ω. It depends on the usage conditions, so please charge
The decision will be made after the actual measurement and verification of the points. Generally, it is recommended to use a resistance of about 1.0Ω.

Aluminum electrolytic capacitors may increase in ESR and cause oscillation at low temperatures. Please pay special attention. In use
, Please perform sufficient actual measurement and verification including temperature characteristics.

■ Note:

· For wiring of VIN terminal, VOUT terminal and GND, pay attention to the wiring method to reduce impedance. In addition, please try
The container is connected near the VOUT.VSS terminal.

·When the linear stabilized power supply is generally used under a low load current (1.0 mA or less), the output voltage may increase, so please be aware.

·This IC uses a phase compensation circuit and the ESR of the output capacitor inside the IC for phase compensation. Therefore, between the VOUT-VSS pin
Be sure to use a capacitor of 2.2 μF or more between them. Tantalum capacitors are recommended.
In addition, in order for the JC53XX series to work stably, a capacitor with an appropriate range (0.5 ~ 5 Ω) of ESR must be used . With this
The proper range is larger or smaller than the ESR, which may make the output unstable and cause the possibility of oscillation. Therefore, under the actual conditions of use,
Make a decision after performing sufficient actual test verification.

·In the case of high impedance of the power supply, when the input terminal of the IC is not connected to the capacitor or the value of the connected capacitor is very small, oscillation will occur
note.

·Please pay attention to the use conditions of input and output voltage and load current so that the power dissipation in the IC does not exceed the power dissipation of the package.

·Although this IC has a built-in anti-static protection circuit, please do not add excessive static electricity to the IC that exceeds the performance of the protection circuit.

Application circuit:

Basic circuit

High output current positive voltage regulator circuit

Short circuit protection circuit

Output voltage extension **1**

$V_{OUT} = V_{XX}(1+R2/R1)+IssXR2$

Output voltage extension **2**

$V_{OUT} = V_{XX} + V_{D1}$

Constant current source circuit

IOUT=Vxx/RA+Iss

Dual power output

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The version is subject to update without notice

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Shanghai Jichi Electronics Co., Ltd.