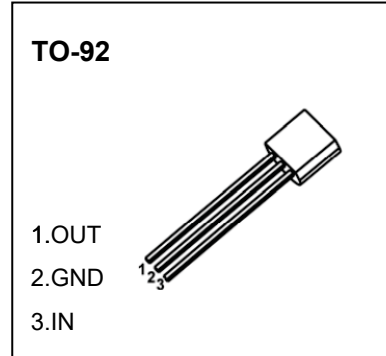


CJ75LXX

INTRODUCTION

The CJ75LXX series are a group of positive voltage regulators manufactured by CMOS technologies with low power consumption and low dropout voltage, which provide large output currents even when the difference of the input-output voltage is small. The CJ75LXX series can deliver 250mA output current and allow an input voltage as high as 36V. The series are very suitable for the battery-powered equipments, such as RF applications and other systems requiring a quiet voltage source.



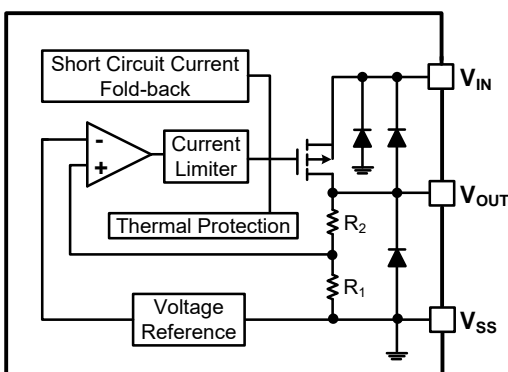
FEATURES

- Low Quiescent Current: 2 μ A
- Operating Voltage Range: 2.5V~36V
- Output Current: 250mA
- Low Dropout Voltage:
400mV@100mA($V_{OUT}=3.3V$)
- Output Voltage: 2.1~ 12V
- High Accuracy: $\pm 2\%/\pm 1\%$ (Typ.)
- High Power Supply Rejection Ratio:
70dB@1kHz
- Low Output Noise:
27x V_{OUT} μ V_{RMS}(10Hz~100kHz)
- Excellent Line and Load Transient Response
- Built-in Current Limiter,
Short-Circuit Protection
- Over-Temperature Protection
- Stable with Ceramic or Tantalum
Capacitor

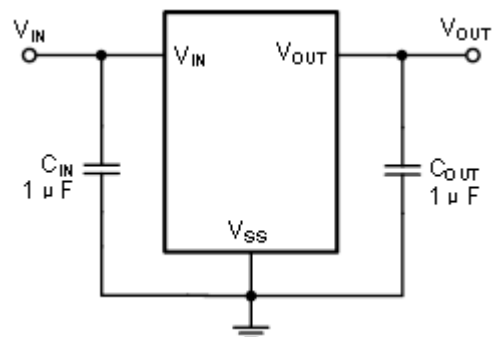
APPLICATIONS

- Cordless Phones
- Radio control systems
- Laptop, Palmtops and PDAs
- Single-lens reflex DSC
- PC peripherals with memory
- Wireless Communication Equipments
- Portable Audio Video Equipments
- Car Navigation Systems
- LAN Cards
- Ultra Low Power Microcontrollers

BLOCK DIAGRAM



TYPICAL APPLICATION CIRCUIT



For CJ75LXX series, input and output capacitors are required to achieve stability and help the equipment obtain better transient response and PSRR. It is recommended to use 1 μ F input and 1 μ F output capacitors.

Electrical Characteristics

ABSOLUTE MAXIMUM RATINGS (Unless otherwise specified, T_A=25°C)

PARAMETER	SYMBOL	RATINGS	UNITS
Input Voltage ⁽²⁾	V _{IN}	-0.3~40	V
Output Voltage ⁽²⁾	V _{OUT}	-0.3~13	V
Power Dissipation	P _D	0.6	W
Operating Ambient Temperature Range	T _A	-40~+85	°C
Operating Junction Temperature Range ⁽³⁾	T _J	-40~+125	°C
Storage Temperature	T _{stg}	-40~+125	°C
Soldering Temperature	T _{solder}	260°C, 10s	

(1) Stresses beyond those listed under *absolute maximum ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *recommended operating conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

(2) All voltages are with respect to network ground terminal.

(3) This IC includes over temperature protection that is intended to protect the device during momentary overload. Junction temperature will exceed 125°C when over temperature protection is active. Continuous operation above the specified maximum operating junction temperature may impair device reliability.

RECOMMENDED OPERATING CONDITIONS

PARAMETER	MIN.	NOM.	MAX.	UNITS
Supply voltage at V _{IN}	2.5		36	V
Operating junction temperature range, T _J	-40		125	°C
Operating free air temperature range, T _A	-40		85	°C

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP. ⁽⁴⁾	MAX.	UNITS
Input Voltage	V _{IN}		2.5	—	36	V
Output Voltage Range	V _{OUT}		2.1	—	12	V
DC Output Accuracy		I _{OUT} =10mA	-2	—	2	%
			-1	—	1	%
Dropout Voltage	V _{dif} ⁽⁵⁾	I _{OUT} = 100mA, V _{OUT} =3.3V	—	400	—	mV
Supply Current	I _{SS}	I _{OUT} =0A	—	2	5	μA
Line Regulation	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta V_{IN}}$	I _{OUT} = 10mA V _{OUT} + 1V ≤ V _{IN} ≤ 36V	—	0.01	0.3	%/V
Load Regulation	$\frac{\Delta V_{OUT}}{I_{OUT}}$	V _{IN} = V _{OUT} + 2V, 1mA ≤ I _{OUT} ≤ 100mA	—	10	—	mV
Temperature Coefficient	$\frac{\Delta V_{OUT}}{V_{OUT} \times \Delta T_A}$	I _{OUT} =40mA, -40°C < T _A < 85°C	—	50	—	ppm
Output Current Limit	I _{LIM}	V _{OUT} = 0.5 × V _{OUT(Normal)}	—	350	—	mA
Short Current	I _{SHORT}	V _{OUT} = V _{SS}	—	25	—	mA
Power Supply Rejection Ratio	PSRR	I _{OUT} =50mA	100Hz	—	80	dB
			1kHz	—	70	
			10kHz	—	60	
			100kHz	—	50	

Electrical Characteristics

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP. ⁽⁴⁾	MAX.	UNITS
Output Noise Voltage	V_{ON}	BW=10Hz to 100kHz	—	$27 \times V_{OUT}$	—	μV_{RMS}
Thermal Shutdown Temperature	T_{SD}	$I_{LOAD} = 30mA$	—	160	—	°C
Thermal Shutdown Hysteresis	ΔT_{SD}	—	—	20	—	°C

(4) Typical numbers are at 25°C and represent the most likely norm.

(5) V_{dif} : The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of V_{OUT} (E).

APPLICATION INFORMATION

Selection of Input/ Output Capacitors

In general, all the capacitors need to be low leakage. Any leakage the capacitors have will reduce efficiency, increase the quiescent current.

A recent trend in the design of portable devices has been to use ceramic capacitors to filter DC-DC converter inputs. Ceramic capacitors are often chosen because of their small size, low equivalent series resistance (ESR) and high RMS current capability. Also, recently, designers have been looking to ceramic capacitors due to shortages of tantalum capacitors.

Unfortunately, using ceramic capacitors for input filtering can cause problems. Applying a voltage step to a ceramic capacitor causes a large current surge that stores energy in the inductances of the power leads. A large voltage spike is created when the stored energy is transferred from these inductances into the ceramic capacitor. These voltage spikes can easily be twice the amplitude of the input voltage step.

Many types of capacitors can be used for input bypassing, however, caution must be exercised when using multilayer ceramic capacitors (MLCC). Because of the self-resonant and high Q characteristics of some types of ceramic capacitors, high voltage transients can be generated under some start-up conditions, such as connecting the LDO input to a live power source. Adding a 3Ω resistor in series with an X5R ceramic capacitor will minimize start-up voltage transients.

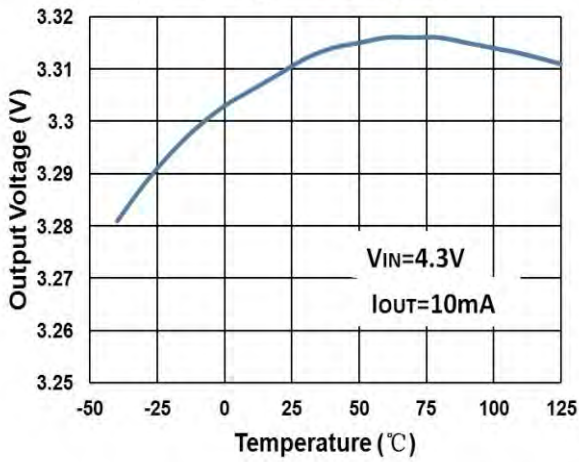
The LDO also requires an output capacitor for loop stability. Connect a 1μF tantalum capacitor from OUT to GND close to the pins. For improved transient response, this output capacitor may be ceramic.

MODEL DEFINITION INFORMATION

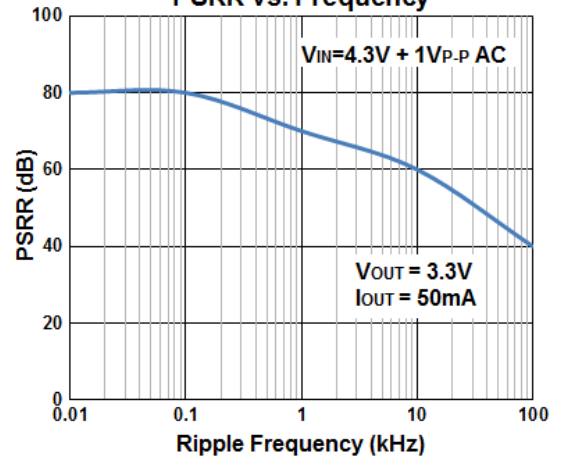
Model	Output Voltage
CJ75L033	3.3V
CJ75L05	5.0V
CJ75LC0	12.0V

Typical Characteristics

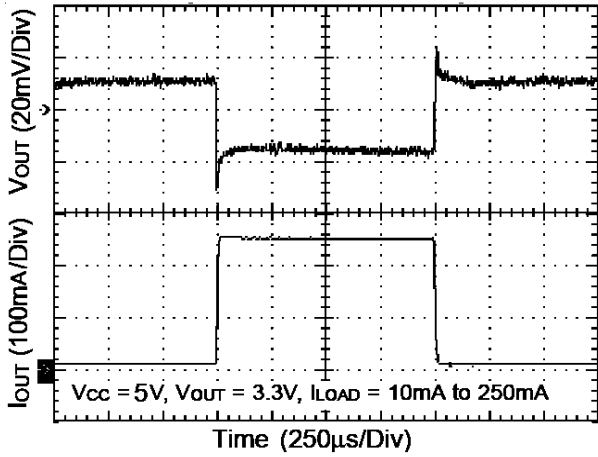
Output Voltage vs. Temperature



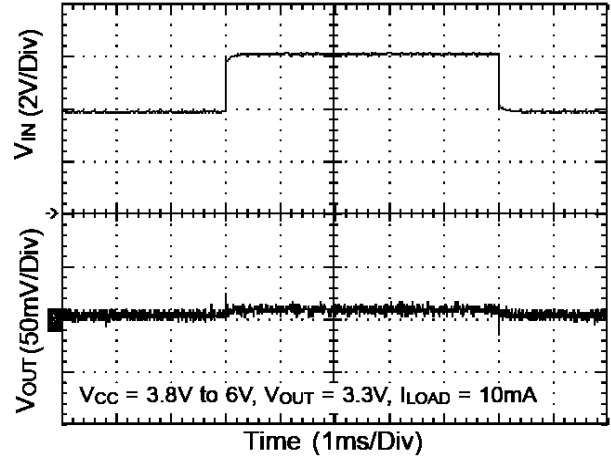
PSRR vs. Frequency



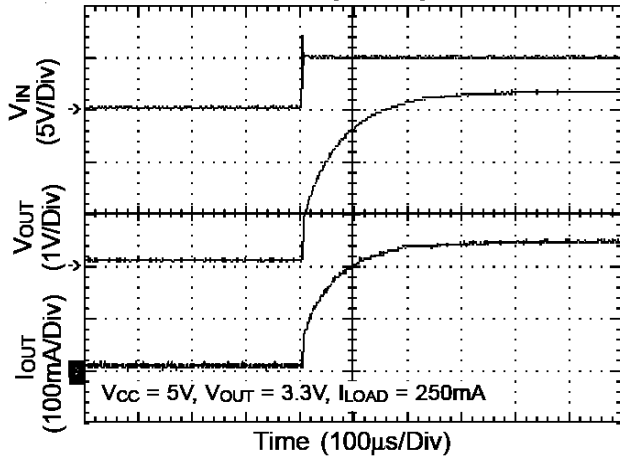
Load Transient Response



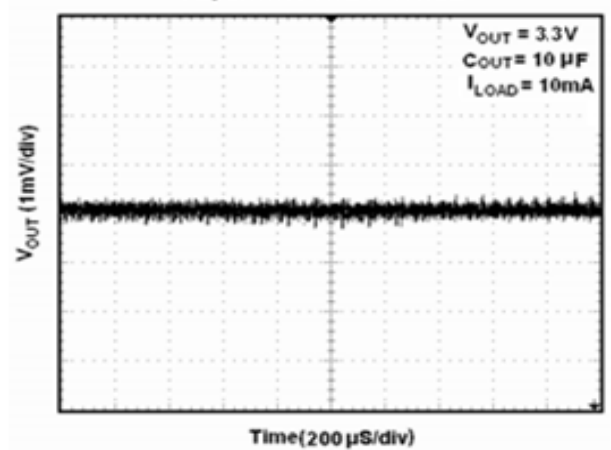
Line Transient Response



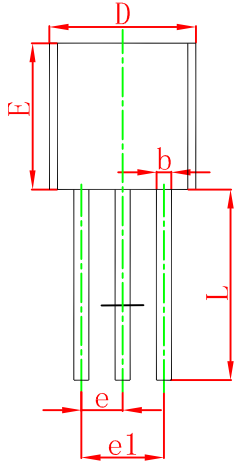
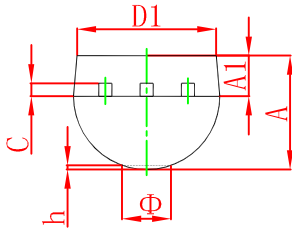
Power Up Response



Output Noise 10Hz to 100KHz

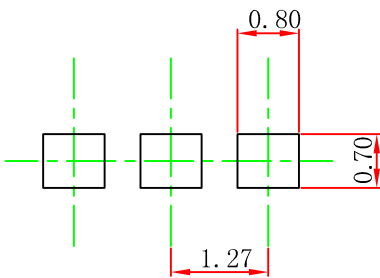


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

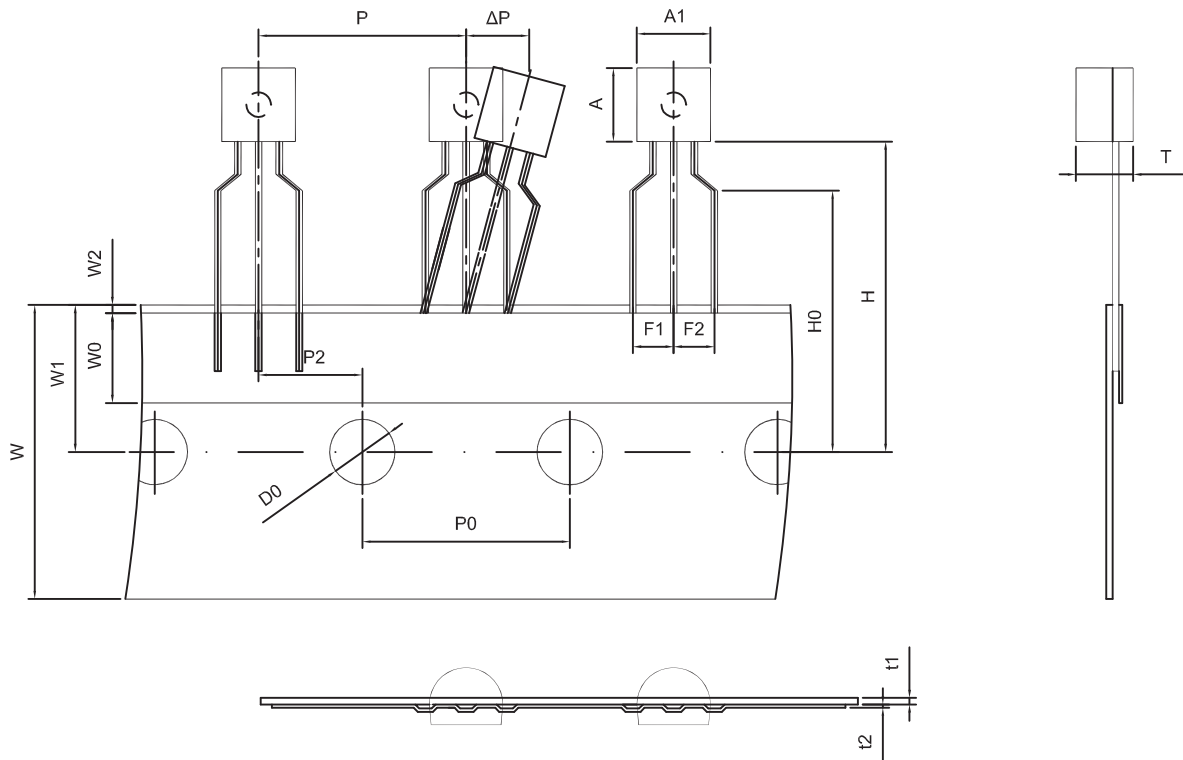
TO-92 Suggested Pad Layout



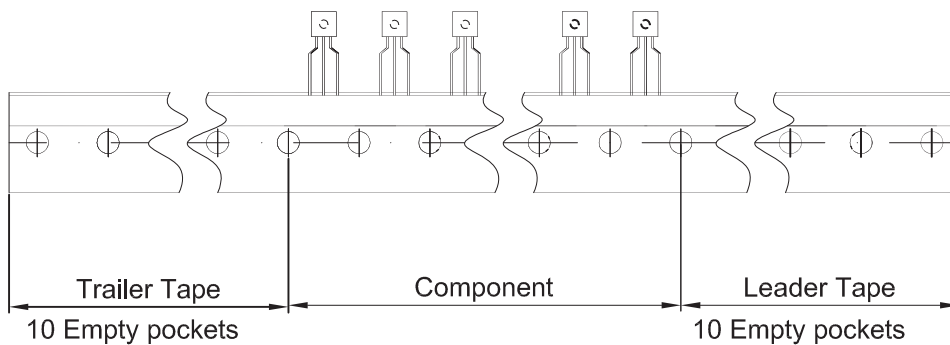
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250

DISCLAIMER

IMPORTANT NOTICE, PLEASE READ CAREFULLY

The information in this data sheet is intended to describe the operation and characteristics of our products. JSCJ has the right to make any modification, enhancement, improvement, correction or other changes to any content in this data sheet, including but not limited to specification parameters, circuit design and application information, without prior notice.

Any person who purchases or uses JSCJ products for design shall: 1. Select products suitable for circuit application and design; 2. Design, verify and test the rationality of circuit design; 3. Procedures to ensure that the design complies with relevant laws and regulations and the requirements of such laws and regulations. JSCJ makes no warranty or representation as to the accuracy or completeness of the information contained in this data sheet and assumes no responsibility for the application or use of any of the products described in this data sheet.

Without the written consent of JSCJ, this product shall not be used in occasions requiring high quality or high reliability, including but not limited to the following occasions: medical equipment, automotive electronics, military facilities and aerospace. JSCJ shall not be responsible for casualties or property losses caused by abnormal use or application of this product.

Official Website: www.jscj-elec.com

Copyright © JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Linear Voltage Regulators](#) category:

Click to view products by [Changjing Electronics Technology](#) manufacturer:

Other Similar products are found below :

[LV5684PVD-XH](#) [MCDTSA6-2R](#) [L7815ACV-DG](#) [LV56801P-E](#) [UA7805CKC](#) [714954EB](#) [ZMR500QFTA](#) [BA033LBSG2-TR](#)

[NCV78M05ABDTRKG](#) [LV5680P-E](#) [L79M05T-E](#) [L78LR05D-MA-E](#) [NCV317MBTG](#) [NTE7227](#) [MP2018GZD-33-P](#) [MP2018GZD-5-P](#)

[LV5680NPVC-XH](#) [ZTS6538SE](#) [UA78L09CLP](#) [UA78L09CLPR](#) [CAT6221-PPTD-GT3](#) [MC78M09CDTRK](#) [NCV51190MNTAG](#)

[BL1118CS8TR1833](#) [BL8563CKETR18](#) [BL8077CKETR33](#) [BL9153-33CC3TR](#) [BL9161G-15BADRN](#) [BL9161G-28BADRN](#)

[BRCO7530MMC](#) [CJ7815B-TFN-ARG](#) [LM317C](#) [GM7333K](#) [GM7350K](#) [XC6206P332MR](#) [HT7533](#) [LM7912S/TR](#) [LT1764S/TR](#) [LM7805T](#)

[LM338T](#) [LM1117IMP-3.3/TR](#) [HT1117AM-3.3](#) [HT7550S](#) [AMS1117-3.3](#) [HT7150S](#) [78L12](#) [HT7550](#) [HT7533-1](#) [HXY6206I-2.5](#) [HT7133](#)