

50 mA, high input voltage LDO Linear Regulators 71XX Series

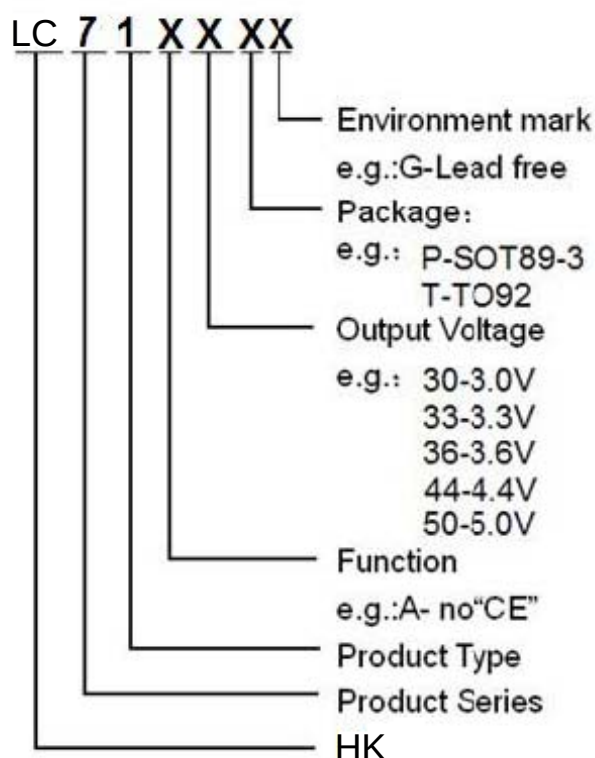
General Description

71XX series are low-dropout linear voltage regulators with a built-in voltage reference module, error correction module and phase compensation module. 71XX series are based on the CMOS process and allow high voltage input with low quiescent current. This series has the function of internal feedback resistor setting from 3.0V to 5.0V. The output accuracy is $\pm 2\%$.

Features

- High output accuracy: $\pm 2\%$
- Input voltage: up to 18 V
- Output voltage: 3.0 V ~ 5.0V
- Ultra-low quiescent current (Typ. = 3 μ A)
- Output Current: $I_{out} = 50\text{mA}$
(When $V_{in} = 7\text{V}$ and $V_{out} = 5\text{V}$)
- Importation good stability: Typ. 0.05% / V
- Low temperature coefficient
- Ceramic capacitor can be used
- Package: SOT89-3、TO92

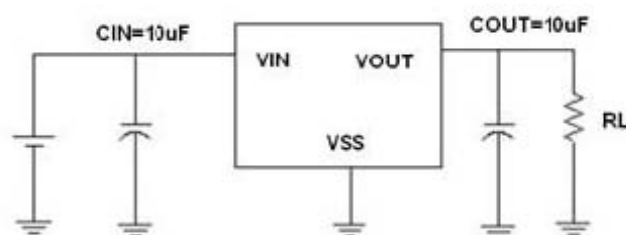
Selection Guide



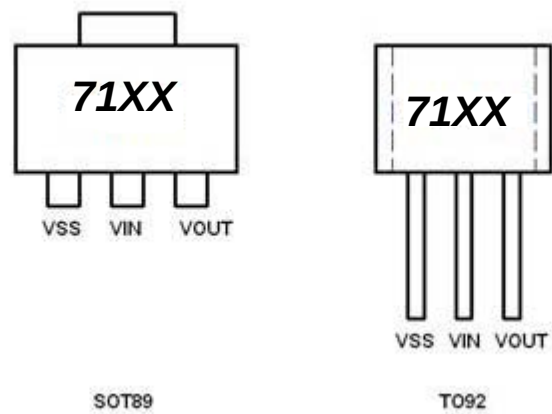
Typical Application

- Electronic weighbridge
- SCM
- Phones, cordless phones
- Security Products
- Water meters, power meters

Typical Application Circuit



Pin Configuration



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Pin Assignment

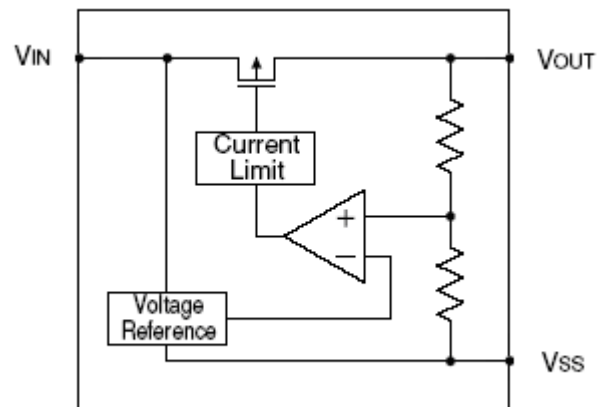
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Pin Number		Pin Name	Functions
SOT89-3	TO92		
1	1	V _{SS}	Ground
2	2	V _{IN}	Power Input
3	3	V _{OUT}	Output

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V _{IN}	18	V
Output Current		I _{OUT}	250	mA
Output Voltage		V _{OUT}	V _{SS} -0.3~V _{IN} +0.3	V
Power Dissipation	SOT89-3	P _D	500	mW
	TO92		500	mW
Operating Temperature Range		T _{OPR}	−25~+85	°C
Storage Temperature Range		T _{STG}	−40~+125	°C
Lead Temperature			260°C, 10sec	

Block Diagram



Electrical Characteristics

71XX

($V_{IN} = V_{OUT} + 2.0V$, $C_{IN} = C_L = 10\mu F$, $T_a = 25^\circ C$, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$, $V_{IN} = V_{out} + 2V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				18	V
Maximum Output Current	I_{OUT_max}	$V_{IN} = V_{out} + 2V$	150			mA
Load Regulation	ΔV_{OUT}	$V_{IN} = V_{out} + 2V$, $1mA \leq I_{OUT} \leq 100mA$		10		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 50mA$		250		mV
	V_{dif2}	$I_{OUT} = 100mA$		500		mV
	V_{dif3}	$I_{OUT} = 200mA$		1000		mV
Supply Current	I_{SS}	$V_{IN} = V_{out} + 2V$		3		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{out} + 2V \leq V_{IN} \leq 18V$		0.05		%/V

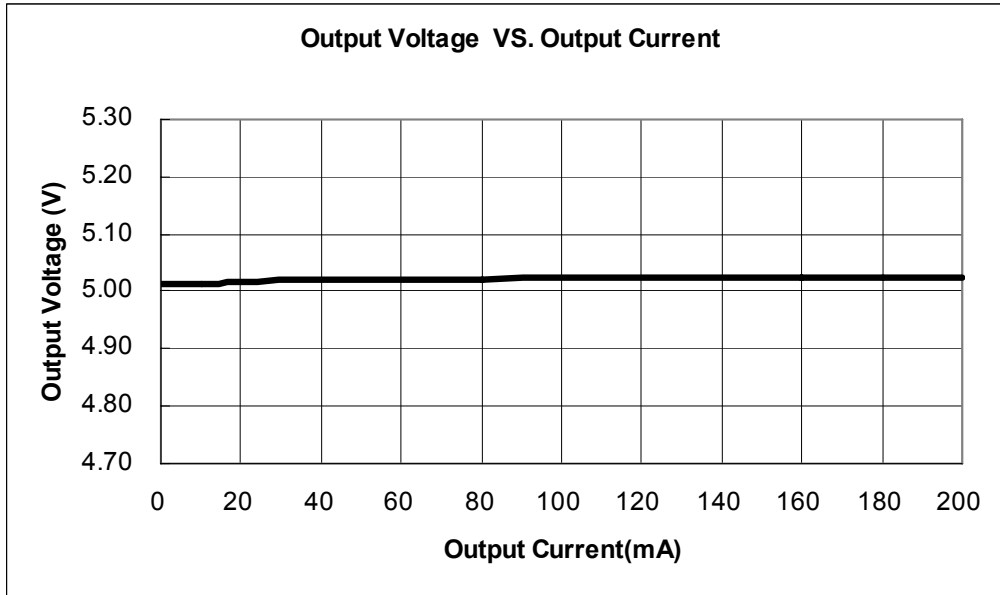
Note :

- $V_{OUT(T)}$: Specified Output Voltage
- $V_{OUT(E)}$: Effective Output Voltage (ie. The output voltage when " $V_{OUT(T)} + 2.0V$ " is provided at the Vin pin while maintaining a certain I_{out} value.)
- V_{DIF} : $V_{IN1} - V_{OUT(E)'}'$
 V_{IN1} : The input voltage when $V_{OUT(E)'}'$ appears as input voltage is gradually decreased.
 $V_{OUT(E)'}'$ = A voltage equal to 98% of the output voltage whenever an amply stabilized I_{out} and $\{V_{OUT(T)} + 2.0V\}$ is input.

Type Characteristics

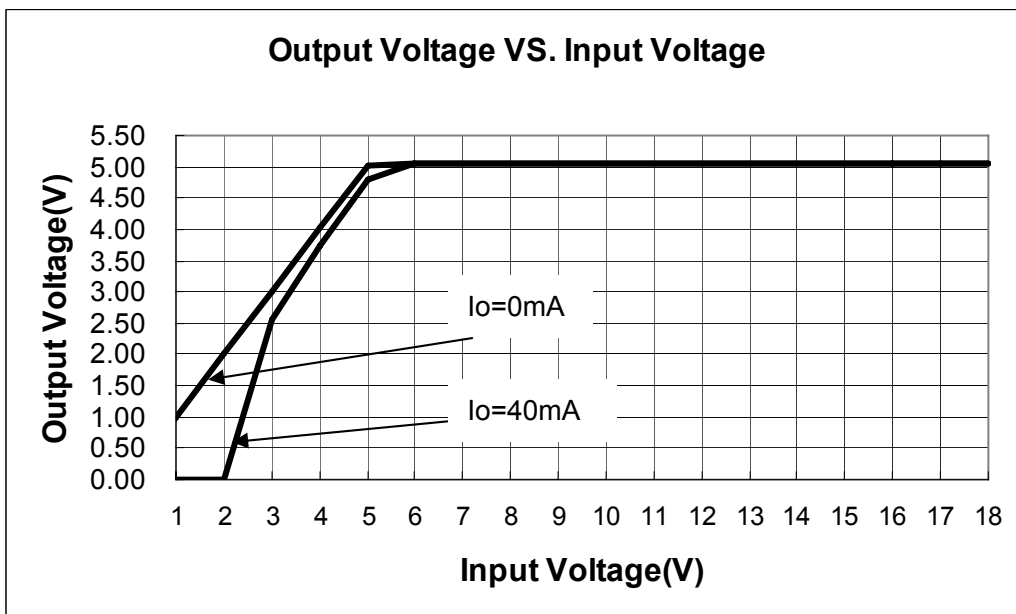
(1) Output Current VS. Output Voltage ($T_a = 25\text{ }^{\circ}\text{C}$)

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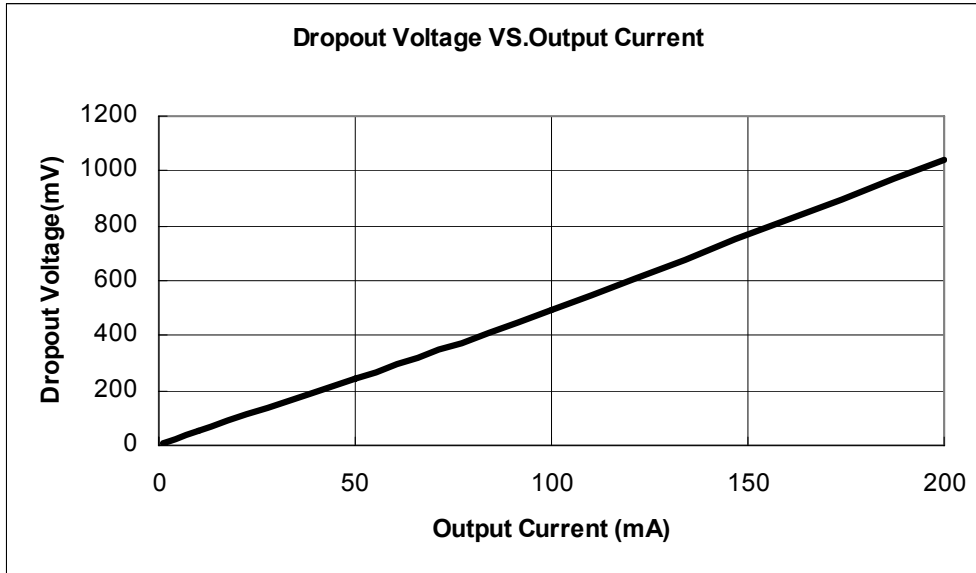
(2) Input Voltage VS. Output Voltage ($T_a = 25\text{ }^{\circ}\text{C}$)

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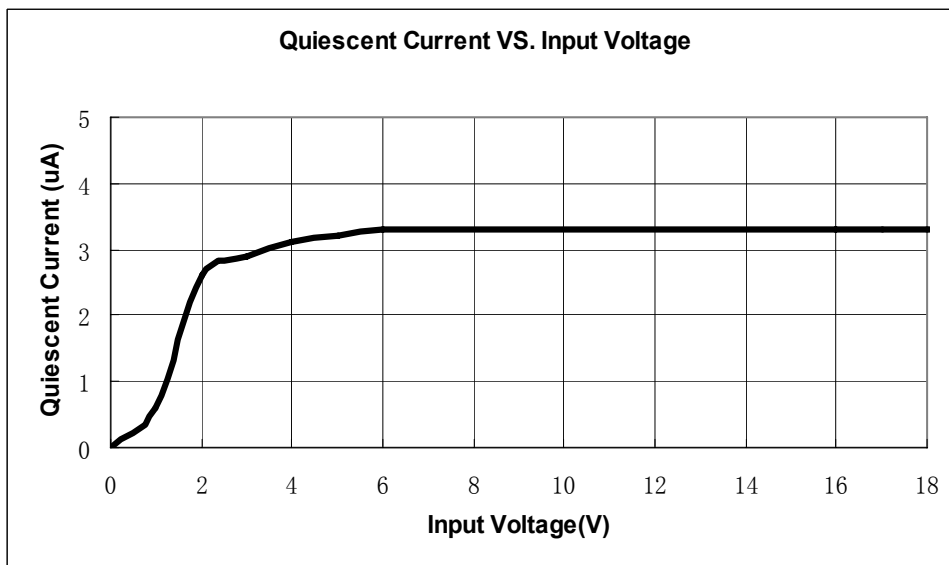
(3) Output Current VS. Dropout Voltage ($T_a = 25^\circ\text{C}$)

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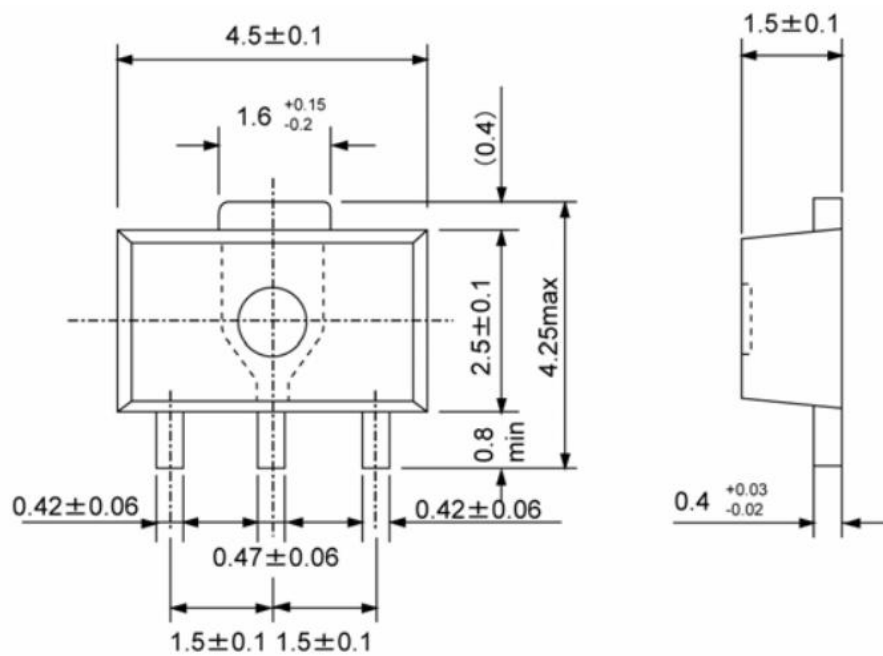
(4) Input Voltage VS. Supply Current ($T_a = 25^\circ\text{C}$)

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Packaging Information

● SOT89-3



● TO-92

