100 mA, high input voltage LDO Linear Regulators

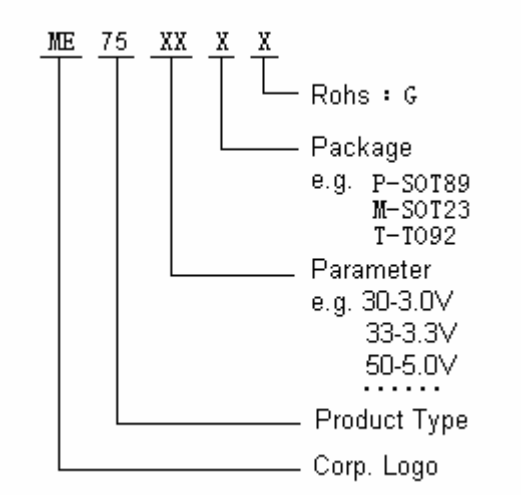
Descriptions

ME75XX series are low-dropout linear voltage regulators with a built-in voltage reference module, error correction module and phase compensation module. ME75XX 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 3V to 5V. The output accuracy is ± 3%.

Features

- High output accuracy: ± 3%
- Input voltage: up to 9 V
- Output voltage: 3.0 V ~ 5.0V
- Ultra-low quiescent current (Typ. = 3 μ A)
- When Vin = 5.3V and Vout = 3.3V when Iout = 100mA
- Importation good stability: Typ. 0.3% / V
- Low temperature coefficient
- Ceramic capacitor can be used
- Package: SOT23, SOT89, TO92

Selection Guide

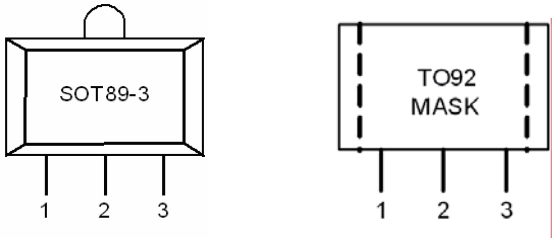


Applications

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

TYPE	POSTFIX	PACKAGE	CE FUNCTION	FEATURES
ME75xx	P	SOT89-3	No	
	T	TO92		

Pin Configuration

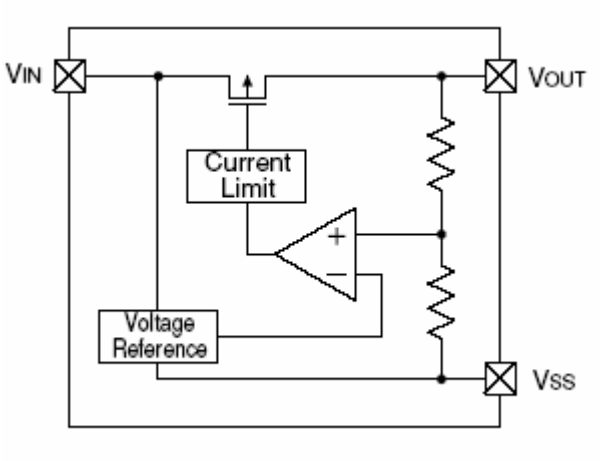


Pin Assignment

ME75xx

PIN Number		PIN NAME	FUNCTION
SOT89-3	TO92		
1	1	Vss	Ground
2	2	Vin	input
3	3	Vout	Output

Block Diagram



Absolute Maximum Ratings

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		V_{IN}	9	V
Output Current		I_{out}	200	mA
Output Voltage		V_{out}	Vss-0.3 ~ Vout+0.3	V
Power Dissipation	SOT89	Pd	500	mW
	TO92	Pd	500	mW
Operating Ambient Temperature		T_{Opr}	-25 ~ +85	℃
Storage Temperature		T_{stg}	-40 ~ +125	℃
Soldering Temperature And Time		T_{solder}	260℃, 10s	

Electrical Characteristics

ME75xx

(Vin=Vout+2V,Cin=Cout=1u,Ta=25^{0}C Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNIT
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=40mA, V_{IN}=Vout+2V	X 0.97		X 1.03	V
Input Voltage	V_{IN}				20	
Maximum Output Voltage	I_{OUT} max	V_{IN}=Vout+2V	100			mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+2V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =1mA		50		mV
	V_{dif2}	I_{OUT} =10mA		200		mV
Supply Current	I_{SS}	V_{IN}=Vout+2V		3		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} * V_{OUT}}$	I_{OUT} =40mA Vout+2V ≤V_{IN}≤20V		0.3		%/V

Note：

1. V_{OUT} (T) ： Specified Output Voltage

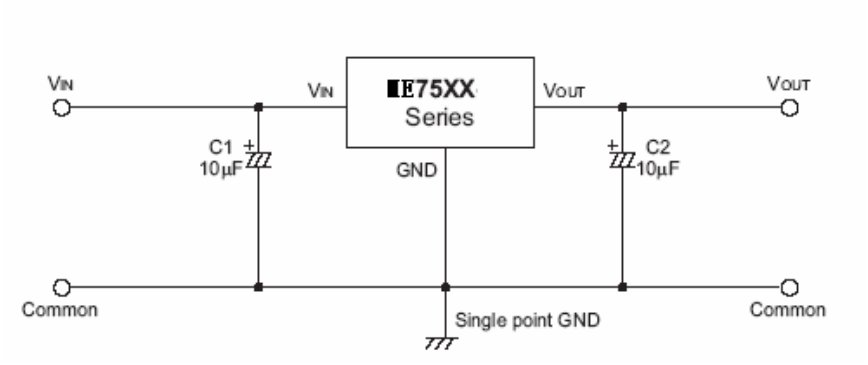
2.V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when “V_{OUT} (T)+2.0V”is provided at the Vin pin while maintaining a certain Iout value.)

3.V_{dif} ： V_{IN1} –V_{OUT} (E)’

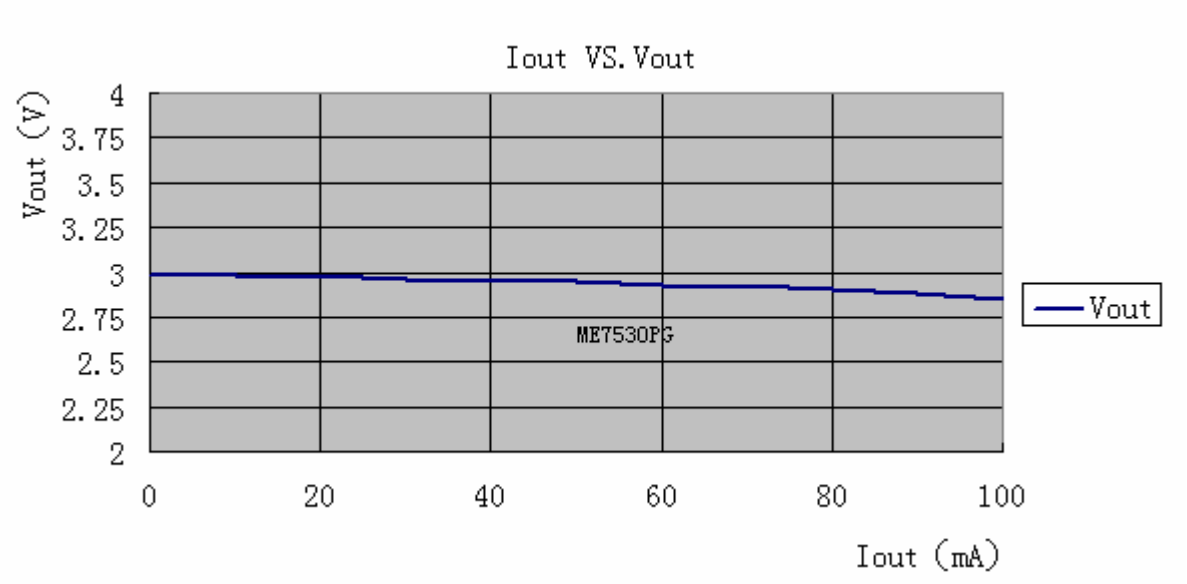
V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

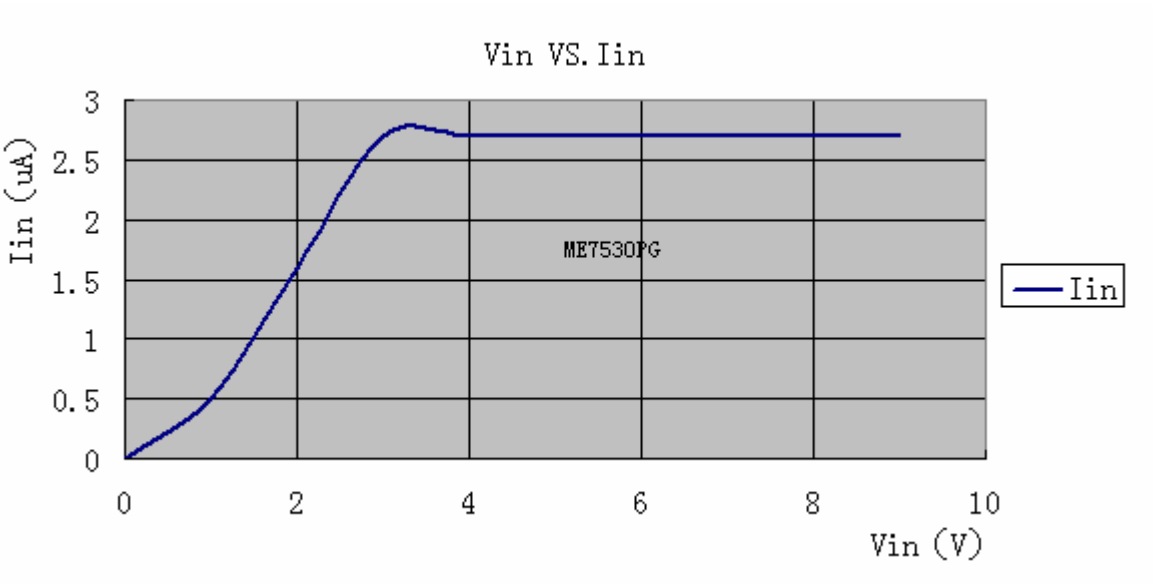
V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout {V_{OUT} (T)+2.0V} is input.

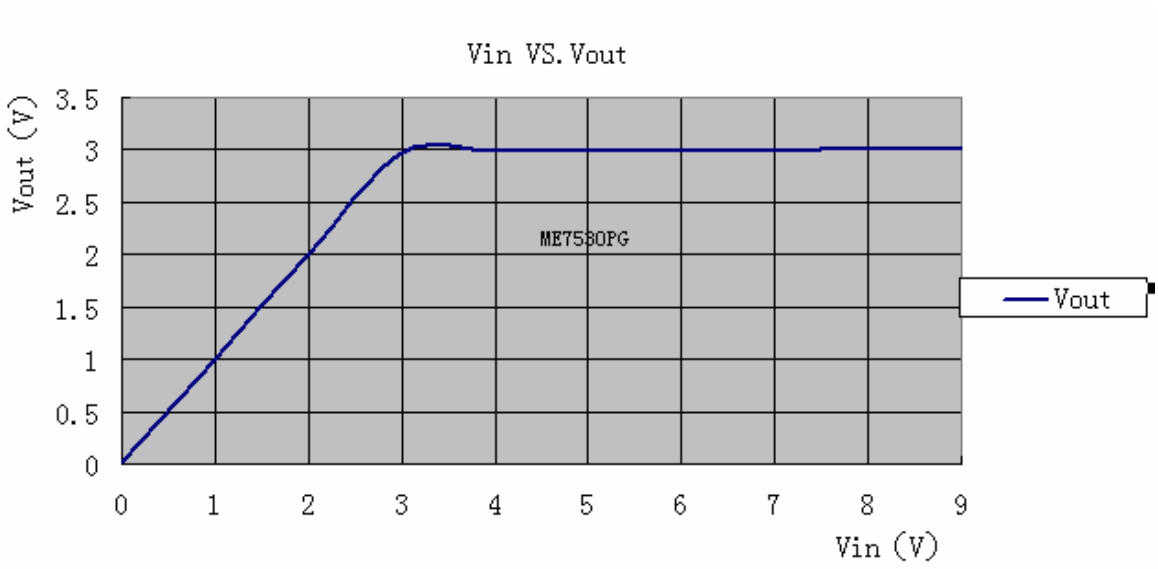
Test Circuits

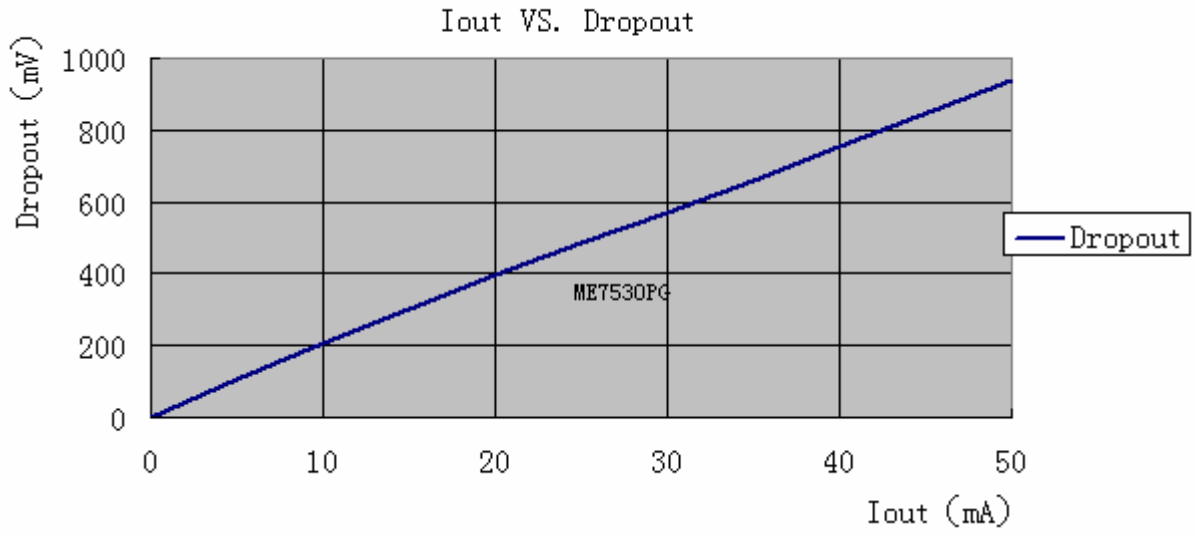


Type Characteristics

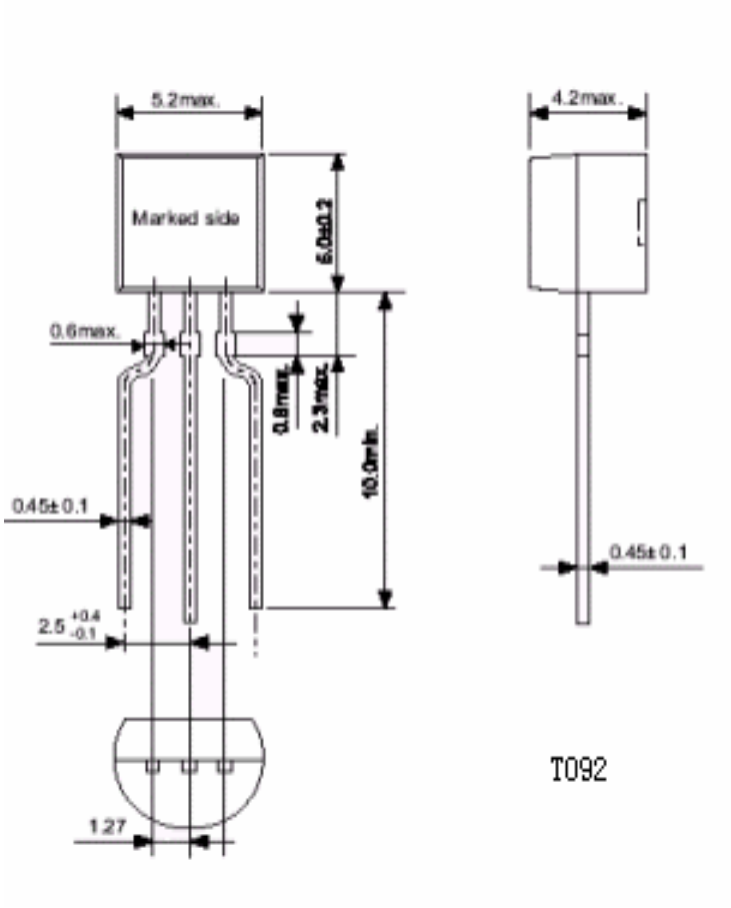


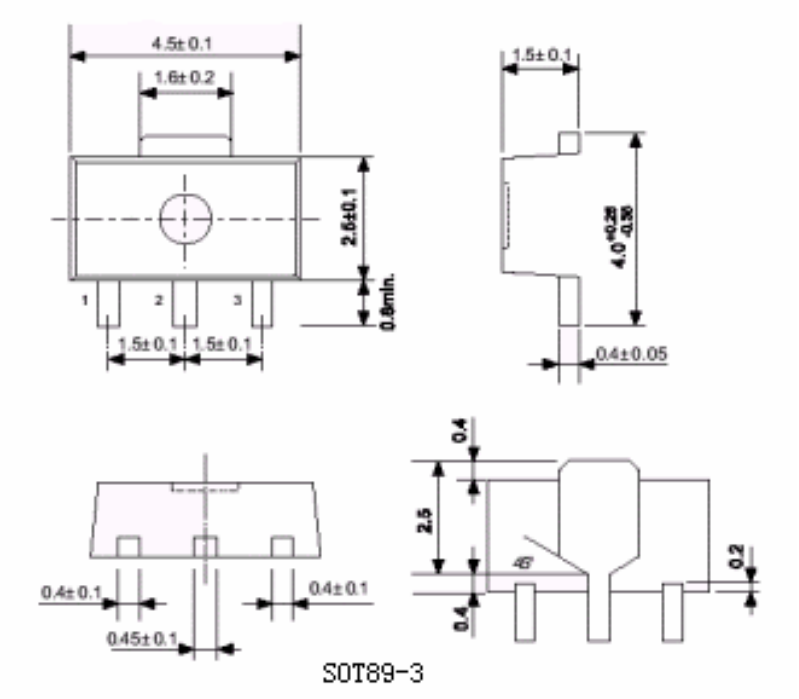



Vin VS. Vout
Vout (V)
3.5
3
2.5
2
1.5
1
0.5
0
ME7530PG
Vout
0
1
2
3
4
5
6
7
8
9
Vin (V)


Iout VS. Dropout
Dropout (mV)
1000
800
600
400
200
0
ME7530PG
Dropout
0
10
20
30
40
50
Iout (mA)

Package Dimensions





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