50 mA, high input voltage LDO Linear Regulators

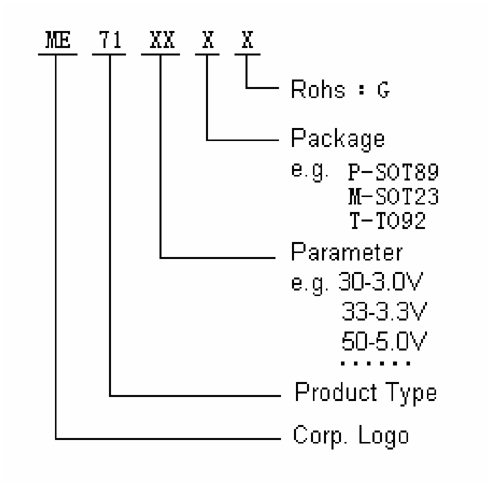
Descriptions

ME71XX series are low-dropout linear voltage regulators with a built-in voltage reference module, error correction module and phase compensation module. ME71XX 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 = 50mA
- Importation good stability: Typ. 0.3% / V
- Low temperature coefficient
- Ceramic capacitor can be used
- Package: SOT23, SOT89, TO92

Selection Guide

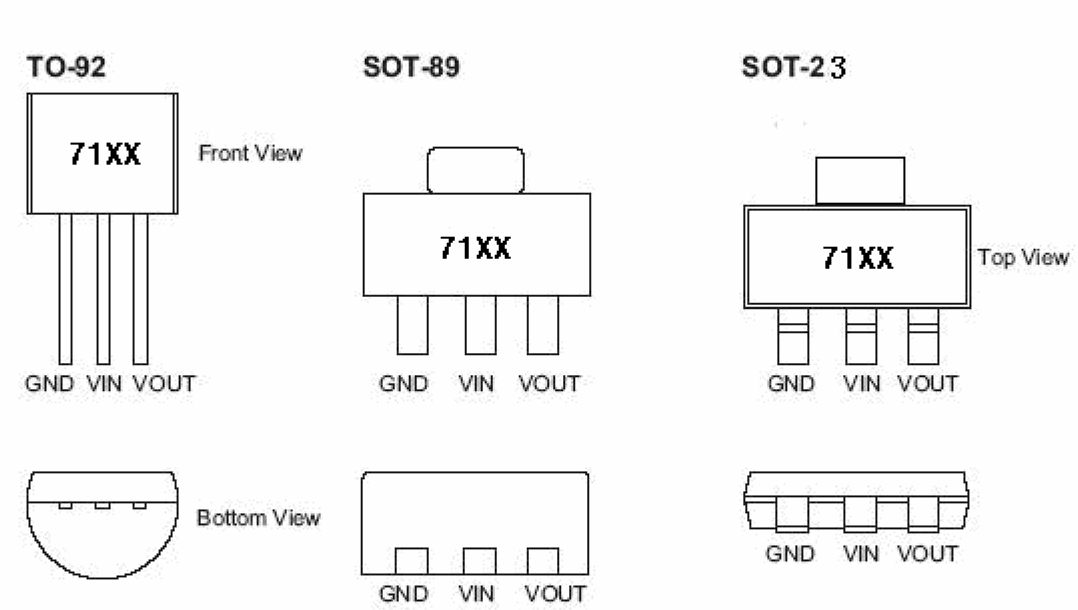


Applications

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

TYPE	POSTFIX	PACKAGE	CE FUNCTION	FEATURES
ME71xx	M	SOT23-3	No	
	P	SOT89-3		
	T	TO92		

Pin Configuration

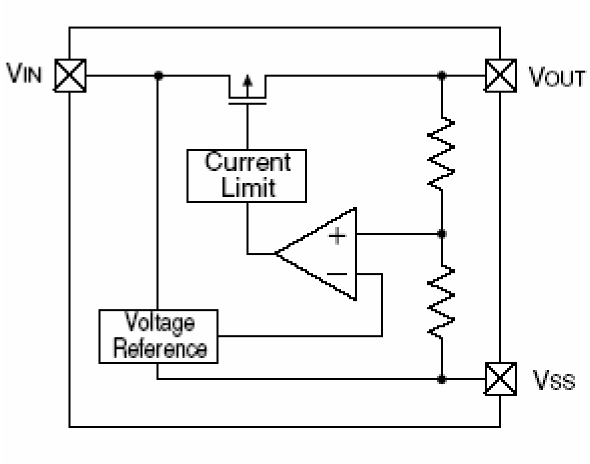


Pin Assignment

ME71xx

PIN Number			PIN NAME	FUNCTION
SOT23-3	SOT89-3	TO92		
1	1	1	Vss	Ground
2	2	2	Vin	input
3	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

ME71xx

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

PARAMETER	SYMBOL	CONDITION	MIX	TYP	MAX	UNITS
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}				9	
Maximum Output Voltage	I_{OUT} max	V_{IN}=Vout+2V		50		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

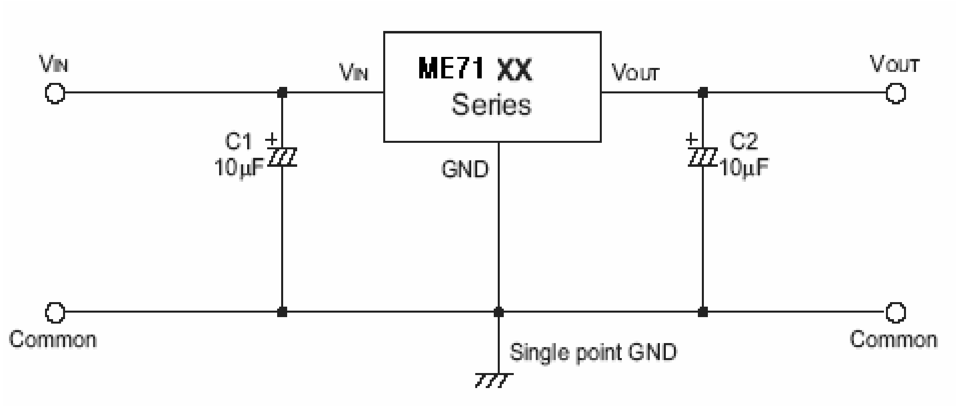
2.V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when “V_{OUT} (T)+2.0V”is provided at the Vin pin while maintaining a certain Iout value.)

3.V_{dif} ： V_{IN1} –V_{OUT} (E)’

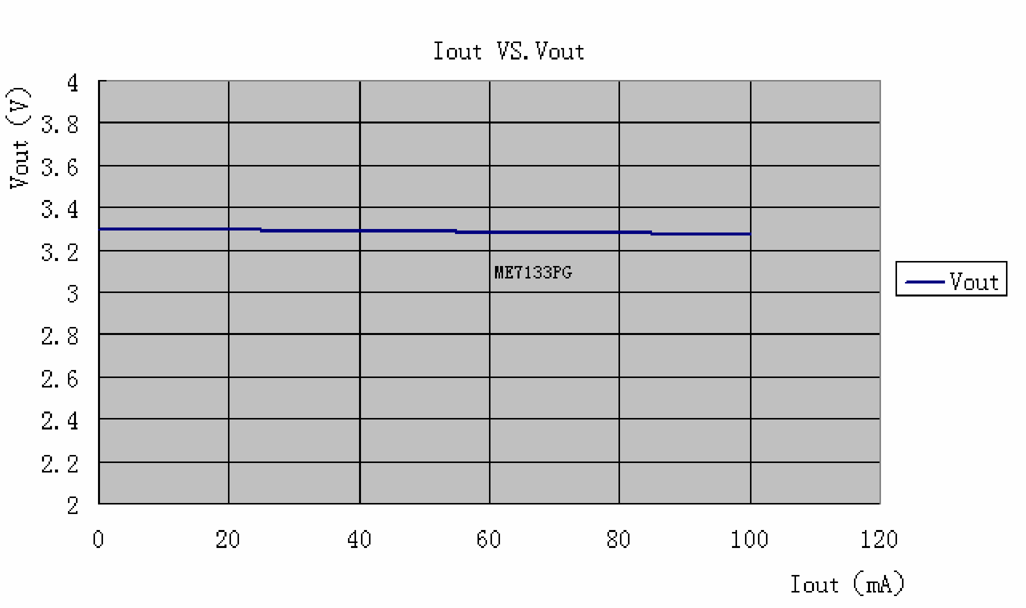
V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

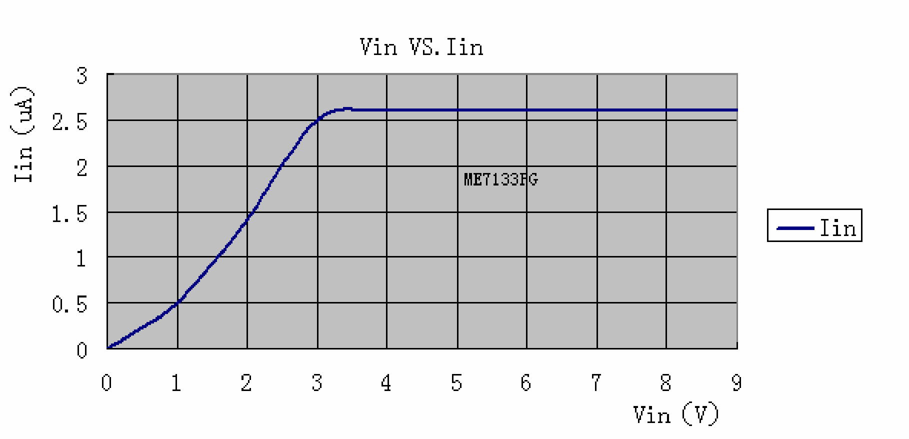
V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout {V_{OUT} (T)+2.0V} is input.

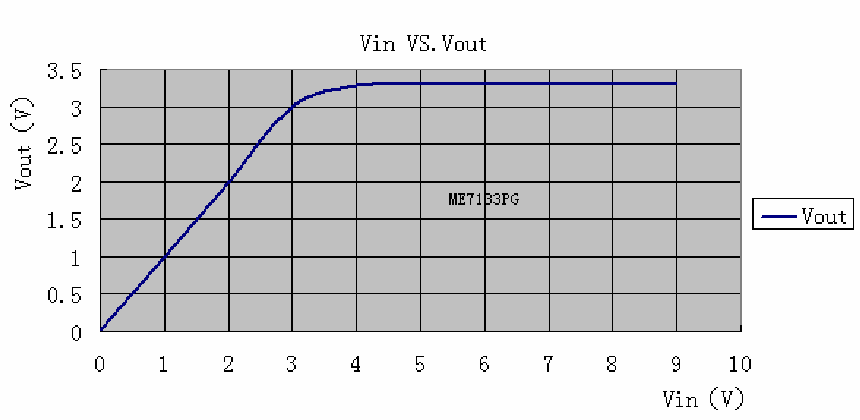
Test Circuits

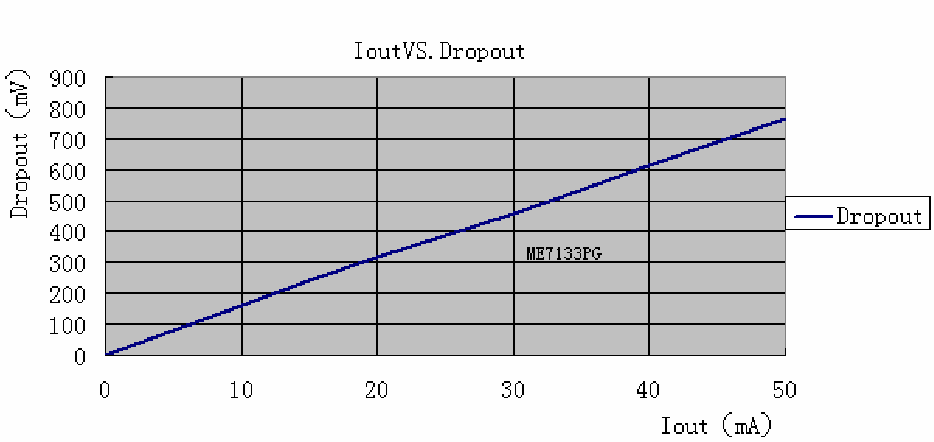


Type Characteristics




Vin VS.Iin
Iin (uA)
3
2.5
2
1.5
1
0.5
0
0 1 2 3 4 5 6 7 8 9
Vin (V)
ME7133PG
Iin


Vin VS.Vout
Vout (V)
3.5
3
2.5
2
1.5
1
0.5
0
0 1 2 3 4 5 6 7 8 9 10
Vin (V)
ME7133PG
Vout


IoutVS.Dropout
Dropout (mV)
900
800
700
600
500
400
300
200
100
0
0 10 20 30 40 50
Iout (mA)
ME7133PG
Dropout

Package Dimensions