

## Low Power Consumption LDO ME6209 Series

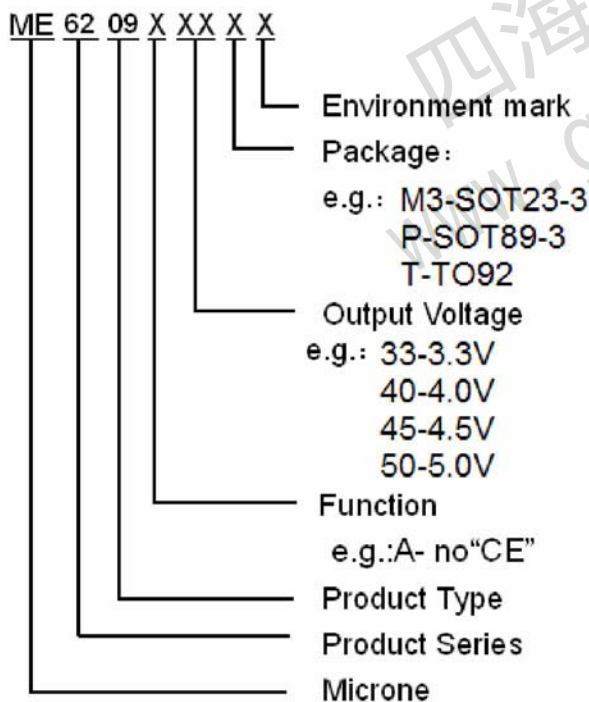
### General Description

The ME6209 series are a group of positive voltage output, three-pin regulator, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS technology. They allow input voltages as high as 18V.

### Features

- | Ultra low quiescent current: 3.0uA(typ)
- | High input voltage (up to 18v)
- | Low dropout voltage :80mV@Iout=40mA (Vout=3.3v)
- | Output voltage accuracy : ±2%
- | Maximum output current : 250mA (within max.power dissipation,Vout=3.3V)
- | Low temperature coefficient
- | Package : SOT23-3, TO-92, SOT89-3

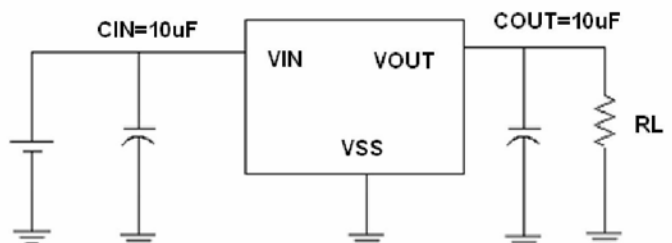
### Selection Guide



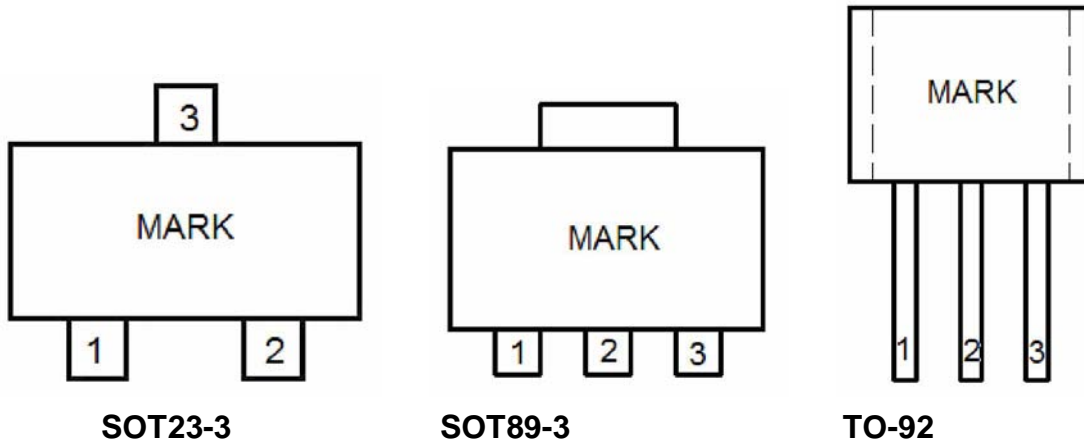
### Typical Application

- | Cameras, video recorders
- | Voltage regulator for microprocessor
- | Voltage regulator for LAN cards
- | Wireless communication equipment
- | Audio/Video equipment

### Typical Application Circuit



## Pin Configuration



## Pin Assignment

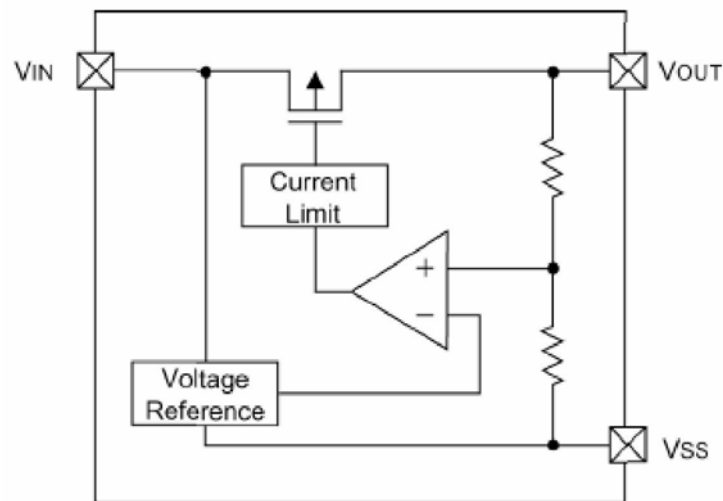
ME6209AXX

Pin Number		Pin Name	Functions
SOT89-3/TO-92	SOT23-3		
1	1	$V_{SS}$	Ground
2	3	$V_{IN}$	Input
3	2	$V_{OUT}$	Output

## Absolute Maximum Ratings

Parameter	Symbol	Ratings	Units
Input Voltage	$V_{IN}$	18	V
Output Voltage	$V_{OUT}$	$V_{SS}-0.3 \sim V_{IN} +0.3$	V
Output Current	$I_{out}$	500	mA
Operating Temperature Range	$T_{OPR}$	-40 ~ + 85	
Storage Temperature Range	$T_{STG}$	- 40 ~ + 125	
Power Dissipation	SOT89-3	500	mW
	TO-92	500	
	SOT23-3	300	

## Block Diagram



## Electrical Characteristics

### ME6209A33

( $V_{IN} = V_{OUT} + 1.0V$ ,  $C_{IN} = C_L = 10\mu F$ ,  $T_a = 25^\circ C$ , unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT} = 40mA$ , $V_{IN} = V_{OUT} + 1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	$V_{IN}$				18	V
Maximum Output Voltage	$I_{OUT\_max}$	$V_{IN} = V_{OUT} + 1V$	250			mA
Load Regulation	$V_{OUT}$	$V_{IN} = V_{OUT} + 1V$ , $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	$V_{dif}$	$I_{OUT} = 40mA$		80		mV
Supply Current	$I_{SS}$	$V_{IN} = V_{OUT} + 1V$		3	4	$\mu A$
Line Regulations	$\frac{V_{OUT}}{V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$V_{OUT} / T_a$	Temperature Coefficient	$V_{IN} = V_{OUT} + 1V$ , $I_{OUT} = 40mA$ $-40 < T_a < 85$		$\pm 0.7$		mV/

## ME6209A40

( $V_{IN} = V_{OUT} + 1.0V$ ,  $C_{IN} = C_L = 10\mu F$ ,  $T_a = 25^\circ C$ , unless otherwise noted)

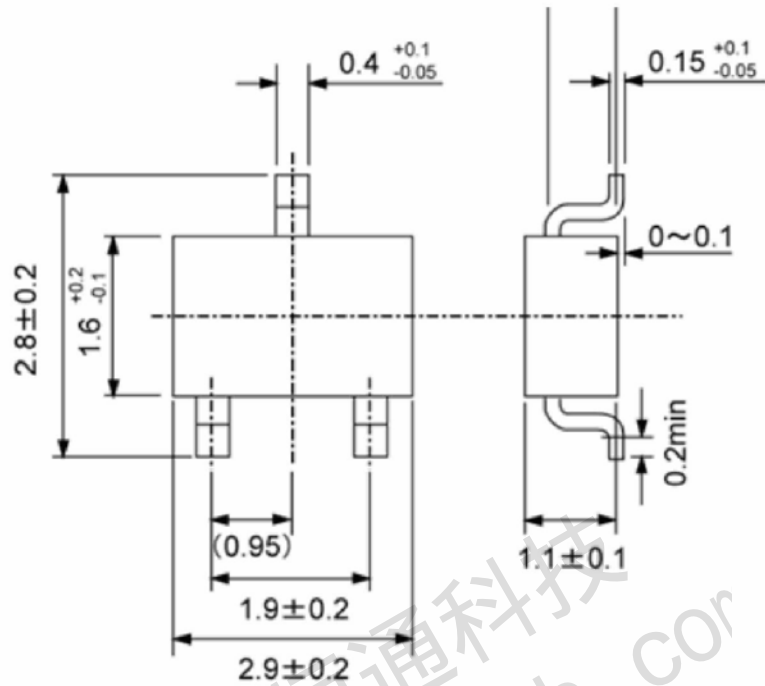
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	$V_{OUT}(E)$ (Note 2)	$I_{OUT} = 40mA$ , $V_{IN} = V_{OUT} + 1V$	X 0.98	$V_{OUT}(T)$ (Note 1)	X 1.02	V
Input Voltage	$V_{IN}$				18	V
Maximum Output Voltage	$I_{OUT\_max}$	$V_{IN} = V_{OUT} + 1V$	250			mA
Load Regulation	$V_{OUT}$	$V_{IN} = V_{OUT} + 1V$ , $1mA \leq I_{OUT} \leq 60mA$		15	40	mV
Dropout Voltage (Note 3)	$V_{dif}$	$I_{OUT} = 40mA$		70		mV
Supply Current	$I_{SS}$	$V_{IN} = V_{OUT} + 1V$		3	4	$\mu A$
Line Regulations	$\frac{V_{OUT}}{V_{IN} \times V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT} + 1V \leq V_{IN} \leq 18V$		0.1	0.2	%/V
$V_{OUT}/T_a$	Temperature Coefficient	$V_{IN} = V_{OUT} + 1V$ , $I_{OUT} = 40mA$ $-40 < T_a < 85$		$\pm 0.7$		mV/

Note :

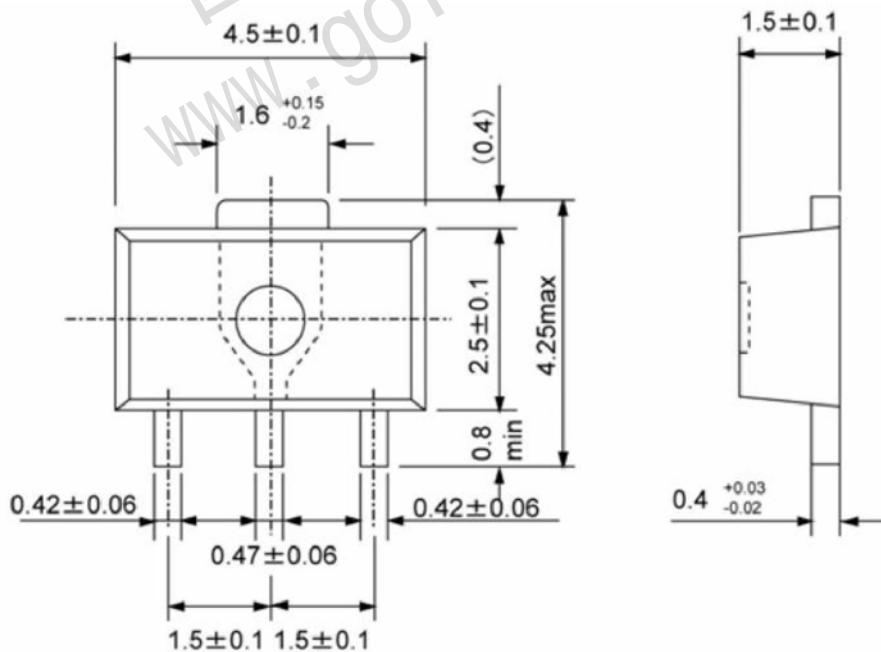
- $V_{OUT}(T)$  : Specified Output Voltage
- $V_{OUT}(E)$  : Effective Output Voltage ( ie. The output voltage when " $V_{OUT}(T) + 1.0V$ " is provided at the  $V_{IN}$  pin while maintaining a certain  $I_{OUT}$  value.)
- $V_{DIF}$  :  $V_{IN1} - V_{OUT}(E)$   
 $V_{IN1}$  : The input voltage when  $V_{OUT}(E)$  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  $\{V_{OUT}(T) + 1.0V\}$  is input.

Packaging Information:

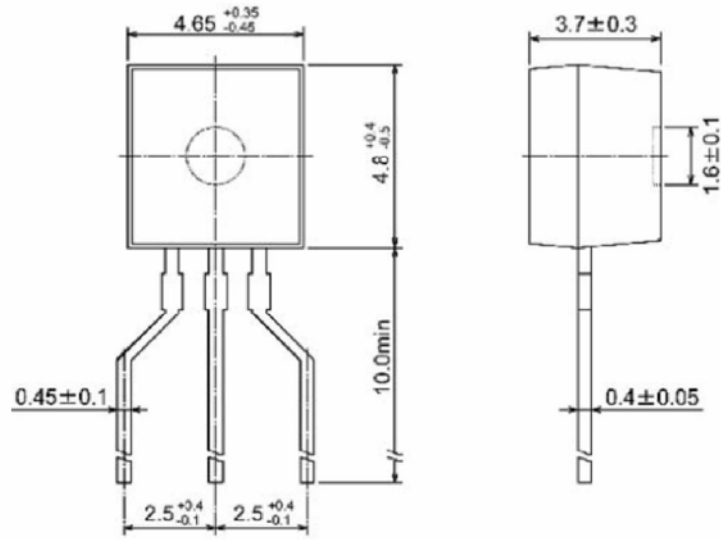
SOT23-3



SOT89-3



TO-92



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