High accurate,Low noise,Ultra small package ME6219 Series

General Description

ME6219 series are highly accurate, low noise, CMOS LDO voltage regulators. Offering low output noise, high ripple rejection ratio, low dropout, the ME6219 series is ideal for today's cutting edge mobile phone. The ME6219 series is also fully compatible with low ESR ceramic capacitors, reducing cost and improving output stability. This high level of output stability is maintained even during frequent load fluctuations, due to the excellent transient response performance and high PSRR achieved across a broad range of frequencies . The CE function allows the output of regulator to be turned off, resulting in greatly reduced power consumption.

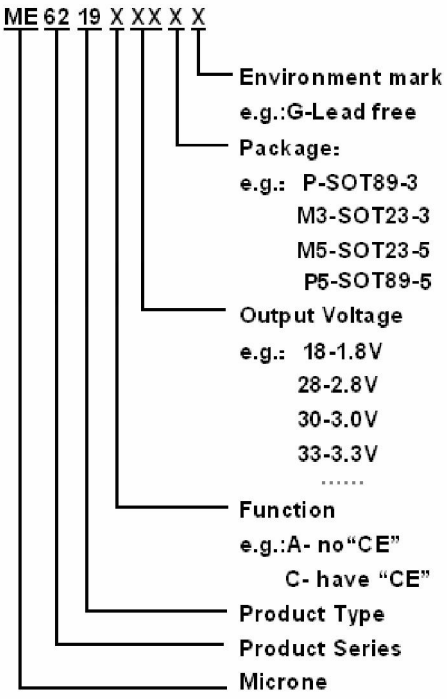
Features

- l Highly accurate:±2%
- l Operating voltage range:1.2V~5.0V (selectable in 0.1V steps)
- l Power consumption:65uA (TYP.)
- l Large output current:300mA（V_{IN}=4.3V,V_{OUT}=3.3V）
- l Input stability:0.05%/V(TYP.)
- l Packages：SOT23-3,SOT89-3,SOT23-5,SOT89-5

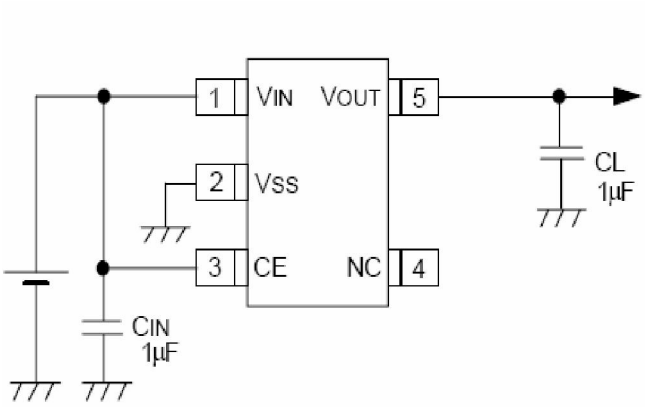
Typical Application

- l Mobile phones
- l Cordless phones, radio communication equipment
- l Portable games
- l Cameras, Video cameras
- l Reference voltage sources
- l Battery powered equipment

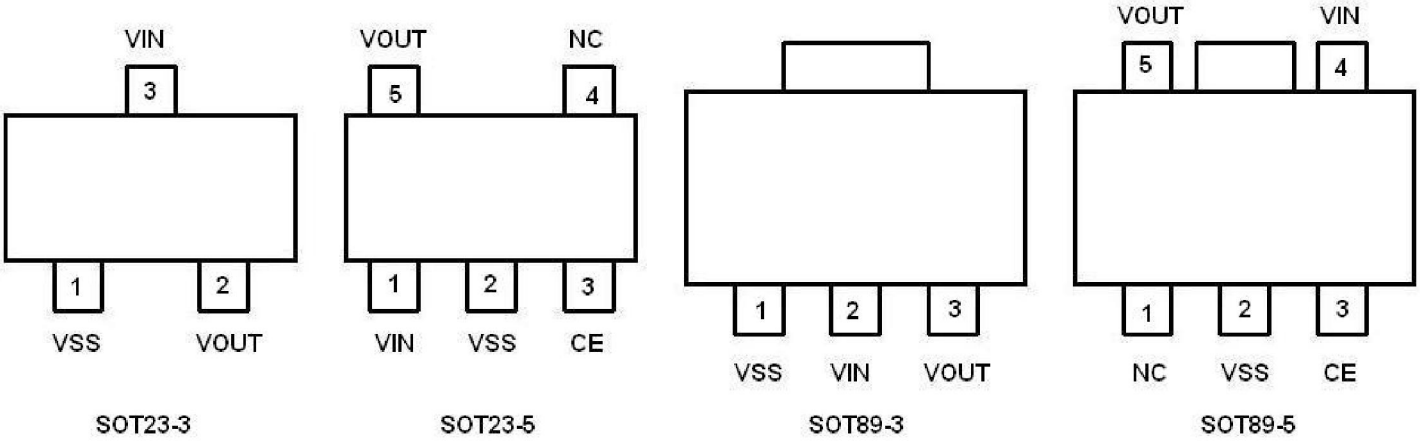
Selection Guide



Typical Application Circuit



Pin Configuration



Pin Assignment

ME6219Axx

Pin Number			Pin Name	Functions
SOT23-3	SOT23-3*	SOT89-3		
1	2	1	V_{SS}	Ground
2	1	3	V_{OUT}	Output
3	3	2	V_{IN}	Input

ME6219Cxx

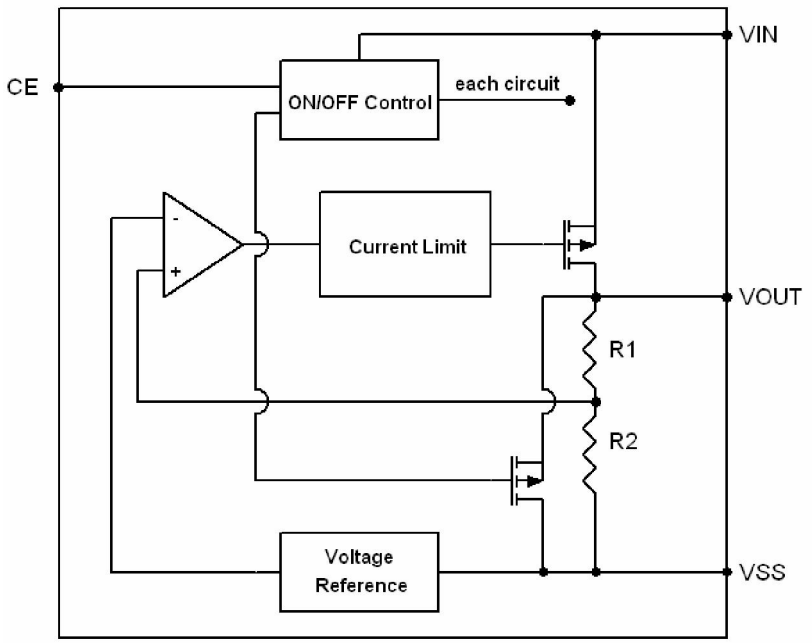
Pin Number			Pin Name	Functions
SOT23-5	SOT23-5*	SOT89-5		
1	5	4	V_{IN}	Input
2	2	2	V_{SS}	Ground
3	1	3	CE	ON/OFF Switch
4	3	1	NC	No Connection
5	4	5	V_{OUT}	Output

*:Special pin array

Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V_{IN}	6.5	V
Output Current		I_{OUT}	500	mA
Output Voltage		V_{OUT}	Vss-0.3 ~ Vout+0.3	V
CE pin Voltage		V_{CE}	Vss-0.3 ~ Vout+0.3	V
Power Dissipation	SOT23	P_D	250	mW
	SOT89	P_D	500	mW
Operating Ambient Temperature		T	-25 ~ +85	℃
Storage Temperature		T_{STG}	-40 ~ +125	℃
Soldering Temperature And Time		T_{SOLDER}	260℃, 10s	

Block Diagram



Electrical Characteristics

ME6219C12

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25^{O}C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		130		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =50mA		750		mV
	V_{dif2}	I_{OUT} =100mA		800		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

ME6219C18

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25^{O}C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		200		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		210		mV
	V_{dif2}	I_{OUT} =200mA		420		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

ME6219C25

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25^{O}C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		250		mA
Load Regulation	**Δ**V_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		170		mV
	V_{dif2}	I_{OUT} =200mA		350		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

ME6219C28

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25^{O}C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		300		mA
Load Regulation	**Δ**V_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		180		mV
	V_{dif2}	I_{OUT} =200mA		320		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

ME6219C30

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25°C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		160		mV
	V_{dif2}	I_{OUT} =200mA		330		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

ME6219C33

(V_{IN}=V_{OUT}+1V,V_{CE}=V_{IN},C_{IN}=C_{OUT}=1uF,Ta=25°C Unless otherwise stated)

Parameter	Symbol	Conditions	Min	TYP.	MAX	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}=Vout+1V	X 0.98	V_{OUT}(T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤100mA		30		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =100mA		180		mV
	V_{dif2}	I_{OUT} =200mA		310		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		65		μA
Stand-by Current	I_{CEL}	Vce＝0V		0.1	1	μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	0.6			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =50mA,f=1kHz		62		dB
Output noises	en	I_{OUT} =40mA，300Hz~50kHz		50		uVrms

Note：

1. V_{OUT} (T) ：Specified Output Voltage
2. 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.)
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 I_{OUT} {V_{OUT} (T)+1.0V} is input.

Type Characteristics

（1）Output CurrentVS.Output Voltage（VIN=Vout+1, **Ta = 25 °C**）

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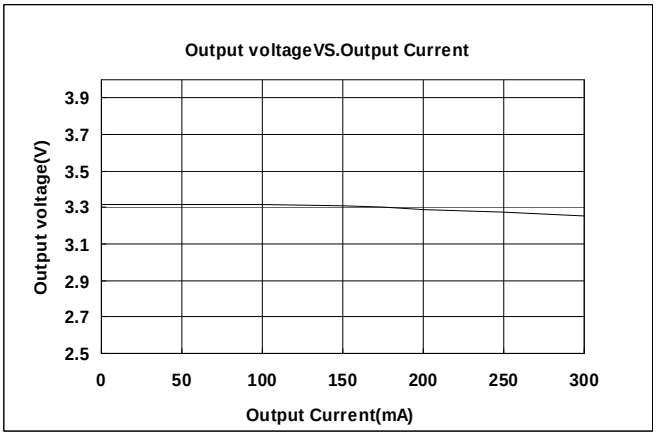

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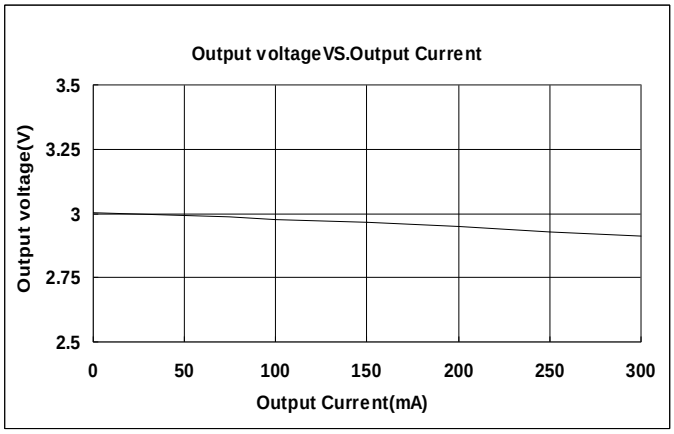

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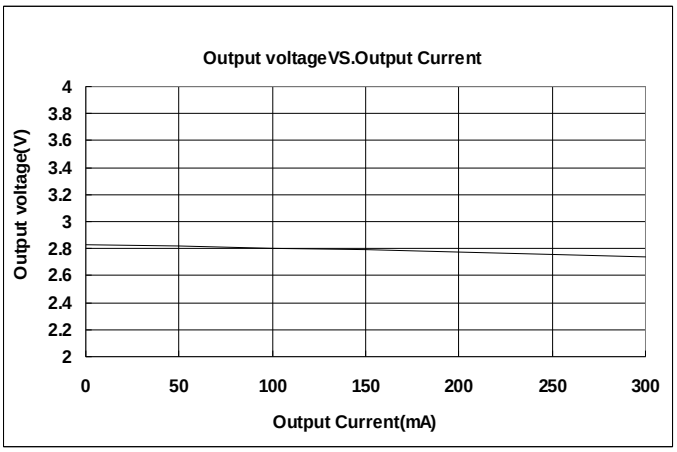

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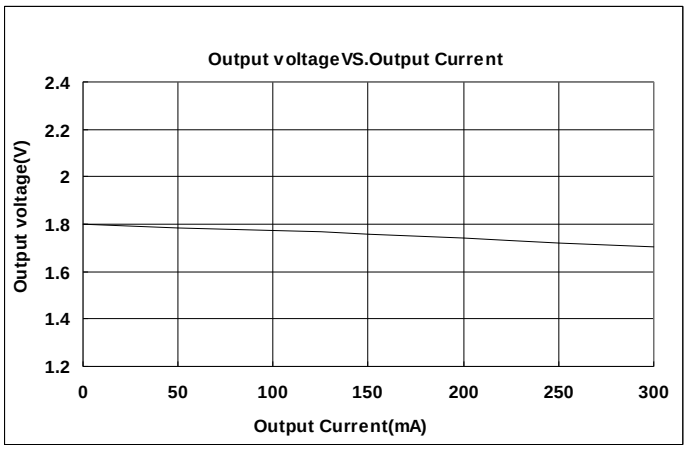

（2）Input VoltageVS.Output Voltage（**Ta = 25 °C**）

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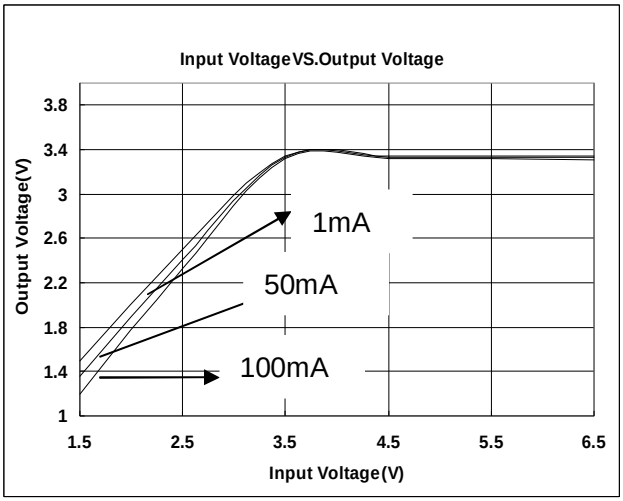

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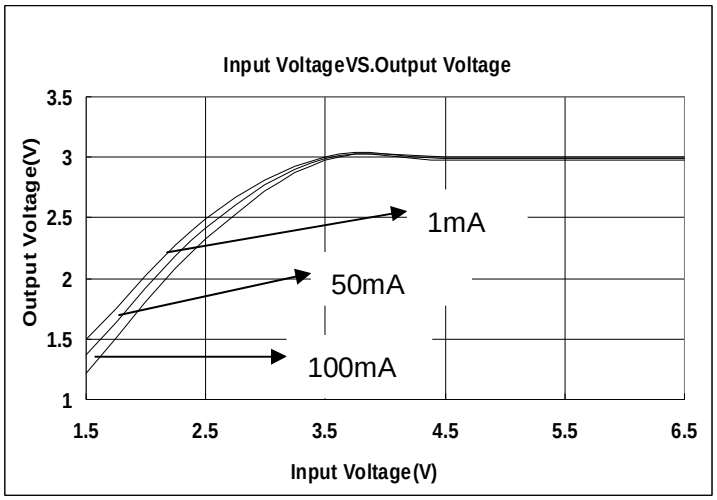

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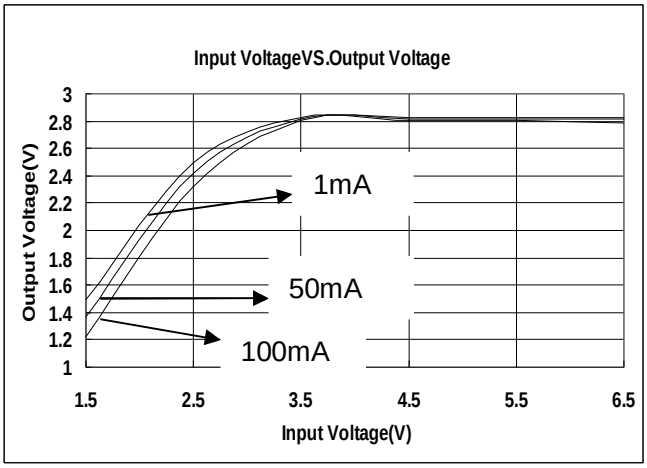

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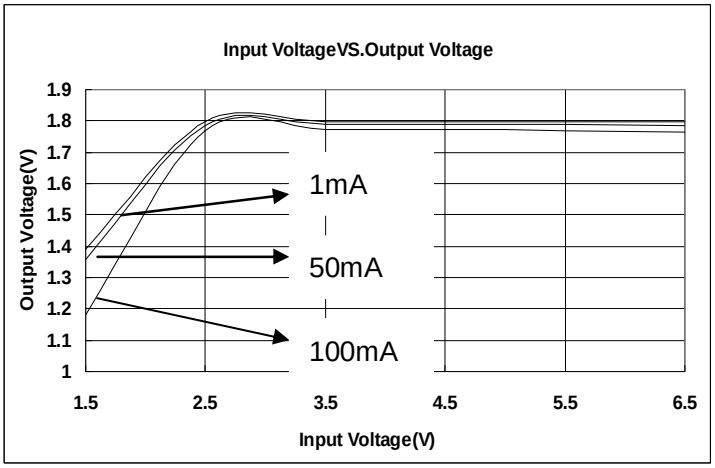

（3）Output Current VS.Droput Voltage（VIN=Vout+1V,**Ta = 25 °C**）

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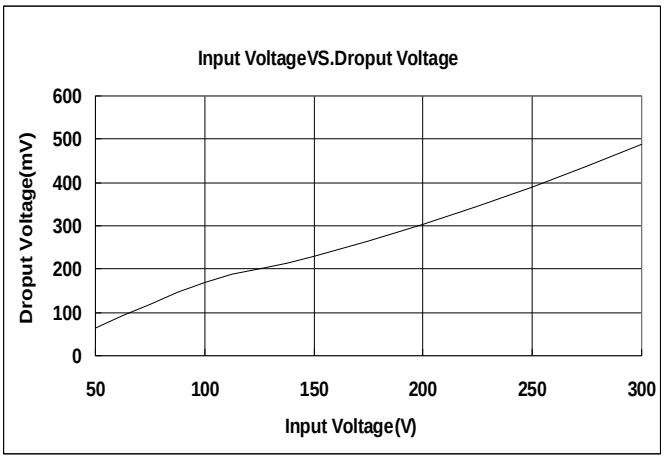

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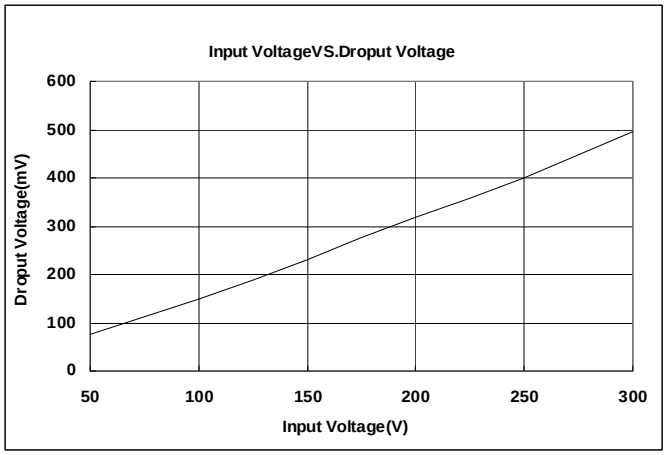

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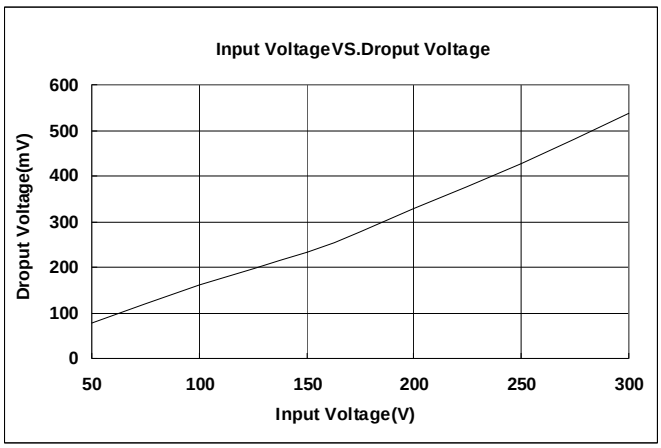

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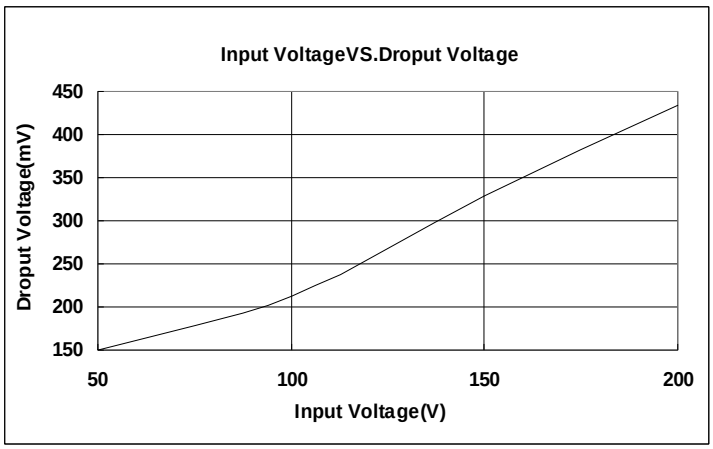

（4）Input Voltage VS. Supply Current（**Ta = 25 °C**）

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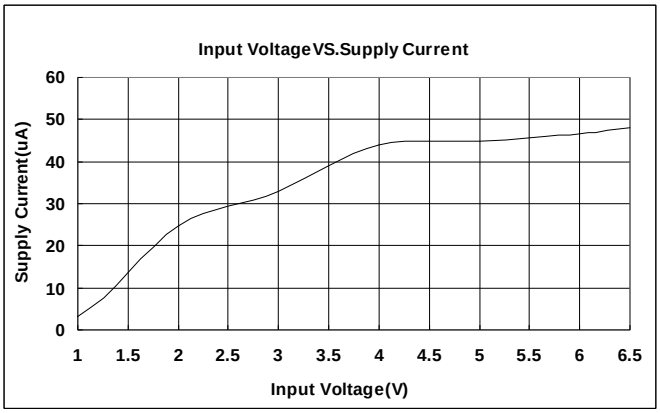

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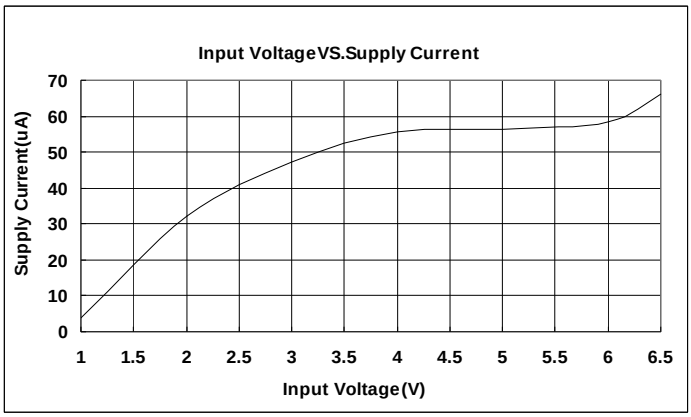

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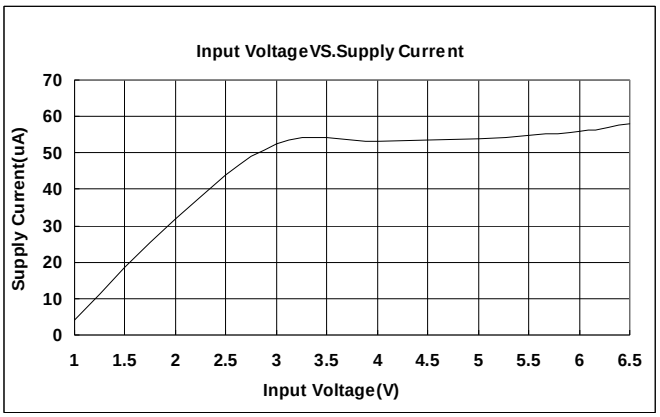

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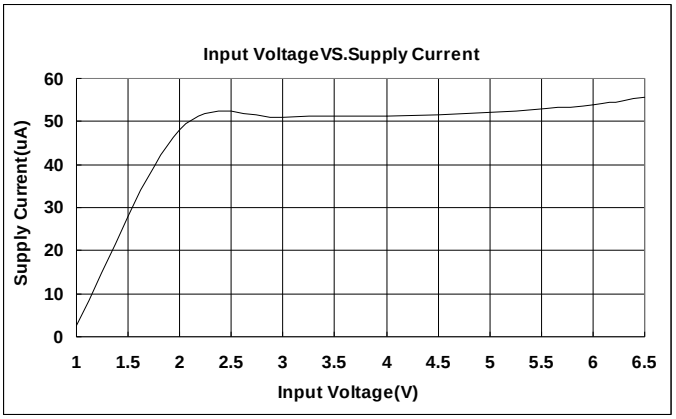
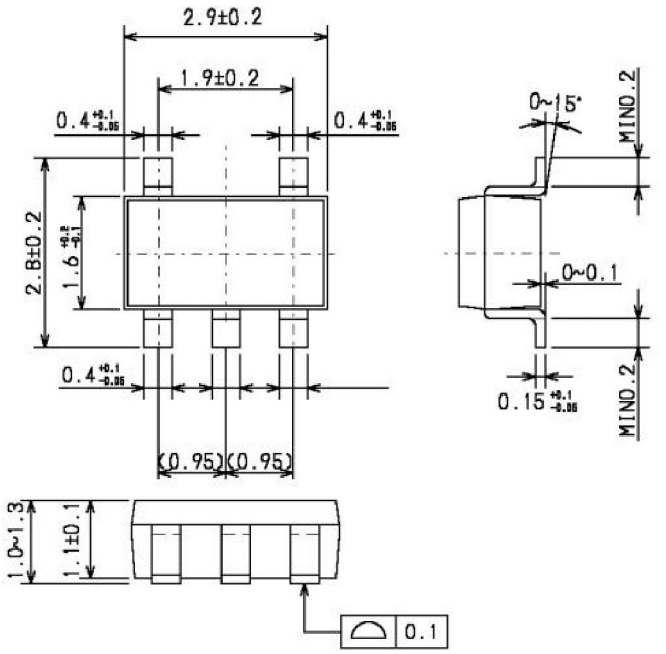


Packaging Information

● SOT23-5



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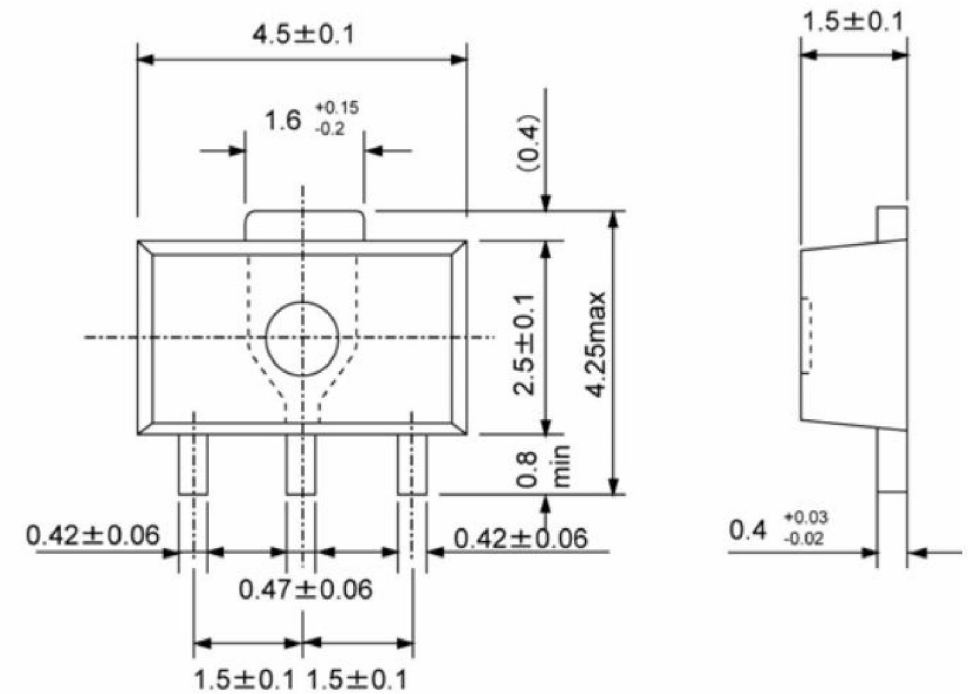

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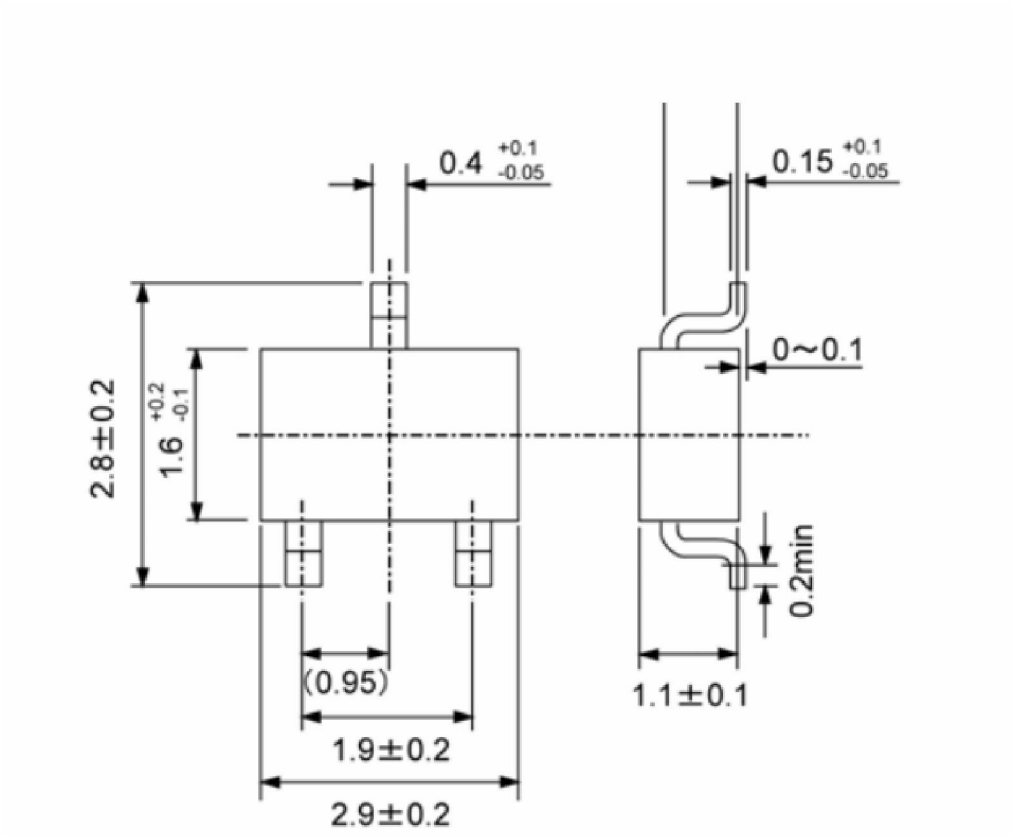

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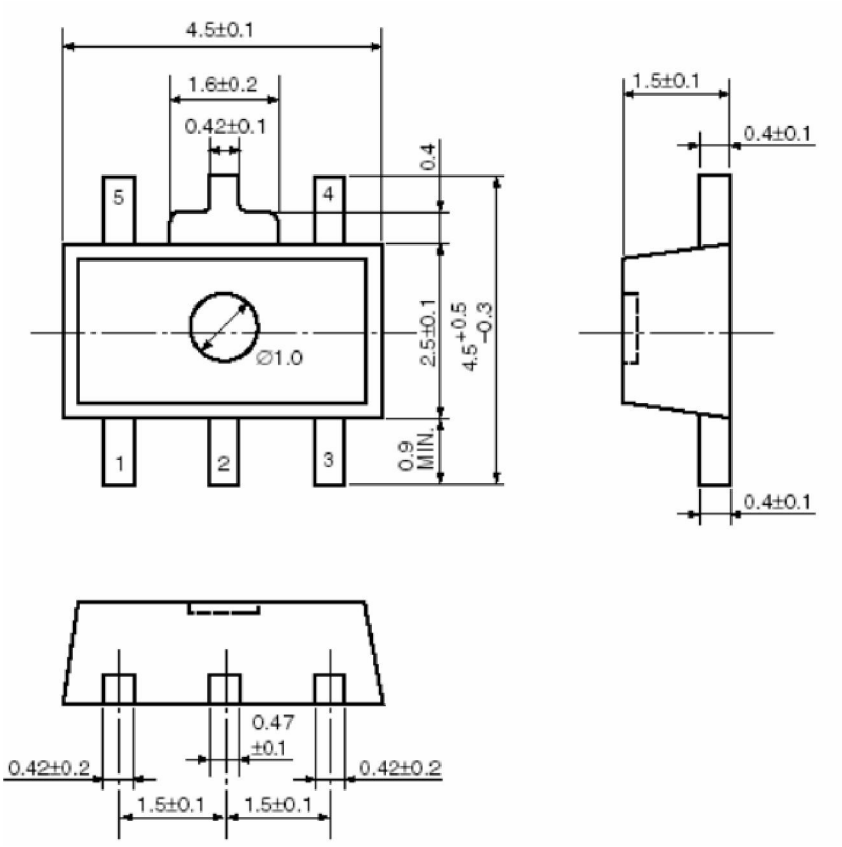

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