AT6211 Series

High Speed LDO Regulators, High PSRR, Low noise

Product Summary

The AT6211 series are highly accurate, low noise,CMOS LDO Voltage Regulators. Offering low output noise, high ripple rejection ratio, low dropout and very fast turn-on times, the AT6211 series is ideal for today's cutting edge mobile phone. Internally the AT6211 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators. The AT6211's current limiters' foldback circuit also operates as a short protect for the output current limiter and. the output pin. The AT6211 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

- Maximum Output Current:500mA (Vin=4.3V,Vout=3.3V)
- Operating Voltage Range: 1.2V~6.0V
- Dropout Voltage：100mV@Iout=100mA
- High Accuracy: ±1％
- Low Power Consumption: 30uA（TYP.）
- Standby Current: 0.1uA（TYP.）
- High Ripple Rejection: 70dB@1KHz（AT6211C33）
- Low output noise: 50uVrms
- Line Regulation: 0.05％（TYP.）

Applications

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

Package

- 3-pin SOT89-3,SOT23-3
- 5-pin SOT23-5

Typical Application Circuit

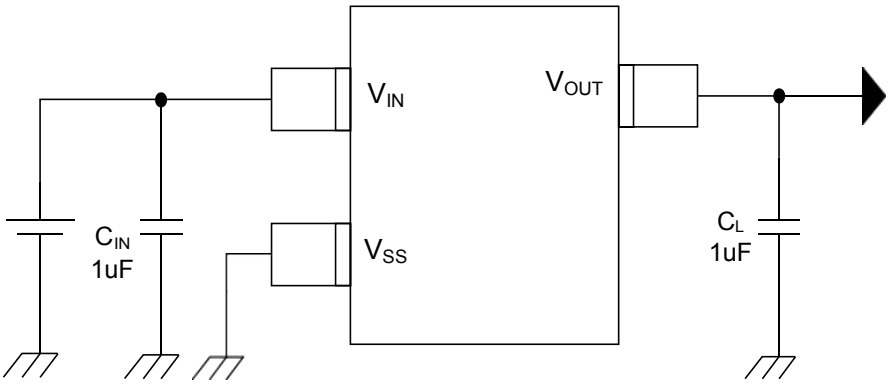


Fig1. AT6211A series

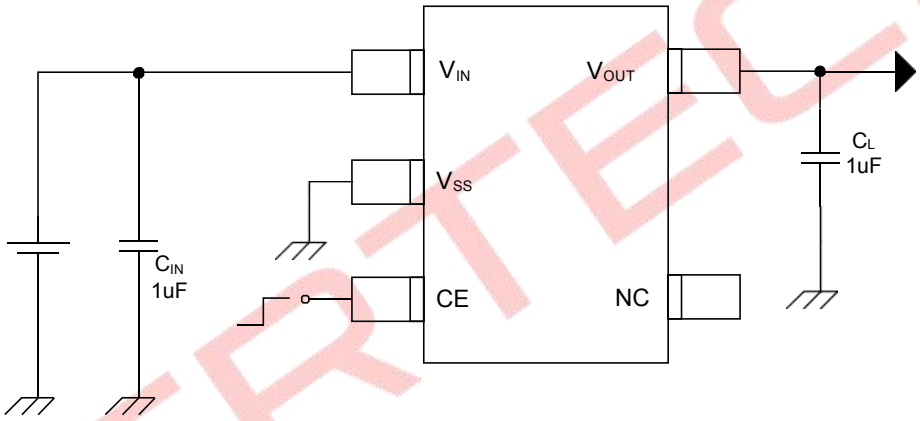


Fig2. AT6211C series

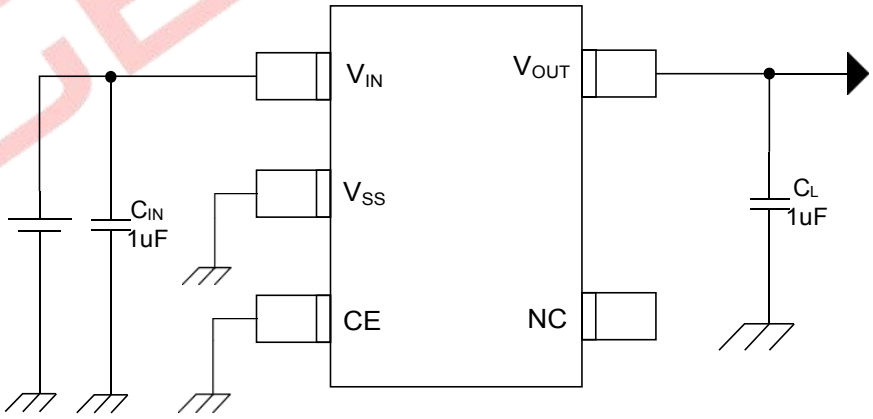
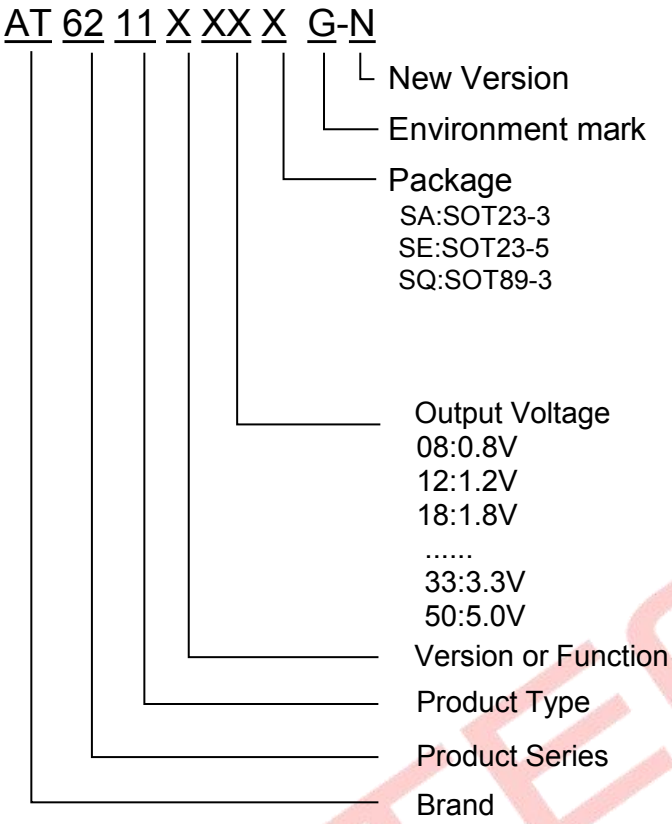


Fig3. AT6211H series

AT6211 Series

Selection Guide



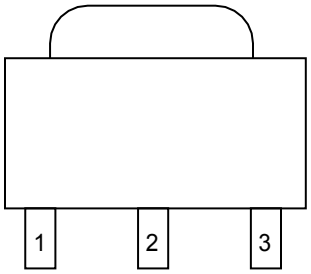
product series	product function	Output voltage	Package
AT6211A12SQG-N	Enable the internal connection of high	1.2V	SOT89-3
AT6211C33SEG-N	Enable can be set	3.3V	SOT23-5
AT6211H15SEG-N	Enable connected to a low	1.5V	SOT23-5

Marking:

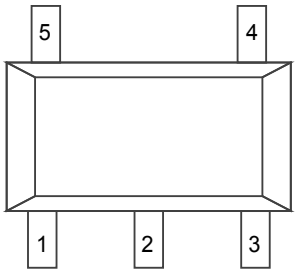
11X[1]XX
ATYWX

11:Product Type
X[1]:Version or Function
XX:Output Voltage
AT:Brand
YWX:Code

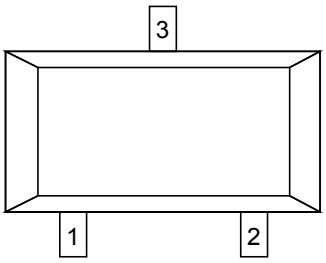
Pin Configuration



SOT89-3



SOT23-5



SOT23-3

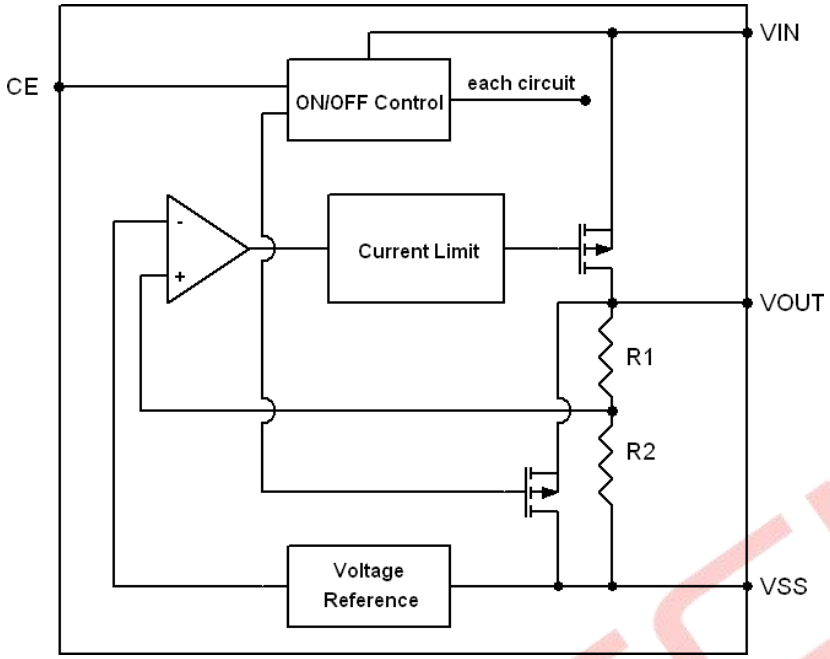
AT6211AXXG

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

AT6211CXXG/ AT6211HXXG

Pin Number	Pin Name	Functions
SE		
SOT23-5		
1	V_{IN}	Power Input
2	V_{SS}	Ground
3	CE	ON / OFF Control
4	NC	No Connect
5	V_{OUT}	Output

Block Diagram



Absolute Maximum Ratings (T_a=25℃,unless otherwise noted)

Parameter		Symbol	Ratings	Units
Input Voltage		V_{IN}	6.5	V
Output Current		I_{OUT}	600	mA
Output Voltage		V_{OUT}	Vss-0.3 ~ V_{IN} +0.3	V
CE Pin Voltage		V_{CE}	Vss-0.3 ~ V_{IN} +0.3	V
Power Dissipation	SOT23-3	P_D	0.54	W
	SOT23-5		0.60	
	SOT89-3		1.25	
Thermal resistance (Junction to air)	SOT23-3	θ_{JA}	230	℃/W
	SOT23-5		210	
	SOT89-3		100	
Operating Ambient Temperature Range		T_{OPR}	-40 ~ +85	℃
Storage Temperature Range		T_{STG}	-55 ~ +150	℃
Junction temperature		T_J	-40 ~ +150	℃

Electrical Characteristics(V_{IN}=V_{OUT}+1V, C_{IN}=C_{OUT}=1μF, T_A=25℃, unless otherwise specified)

AT6211C08 (V_{IN}= V_{OUT}+1V, V_{CE} = V_{IN}, C_{IN}=C_L=1uF, Ta=25°C , unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			250		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			7		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			600		mV
	V_{DIF2}	I_{OUT} =200mA			850		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE "High" Voltage	VCEH	Start up		1.0			V
CE "Low" Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA, 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

AT6211C10 (V_{IN}= V_{OUT}+1V, V_{CE} = V_{IN}, C_{IN}=C_L=1uF, Ta=25°C ,unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			5		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			400		mV
	V_{DIF2}	I_{OUT} =200mA			650		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.035		%/V
CE "High" Voltage	VCEH	Start up		1.0			V
CE "Low" Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA, 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

AT6211C12 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25^{O}C ,unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			8		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			280		mV
	V_{DIF2}	I_{OUT} =200mA			500		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.03		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

AT6211C15 (V_{IN}= V_{OUT}+1V, VCE = V_{IN}, C_{IN}=C_L=1uF, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			200		mV
	V_{DIF2}	I_{OUT} =200mA			400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Shut up		1.0			V
CE “Low” Voltage	VCEL	Start down				0.5	V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN}=[V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA, 10kHZ		62		dB

AT6211C18 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			200		mV
	V_{DIF2}	I_{OUT} =200mA			400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

AT6211C25 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X1.01	V
Maximum Output Current	IOUTMAX	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			110		mV
	V_{DIF2}	I_{OUT} =200mA			220		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT}=30mA,V_{OUT}+1V ≤V_{IN}≤6.5V			0.04		%/V
CE“High”Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN}=[V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OUT} =0V			60		mA

AT6211C28 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.99	V_{OUT} (T) (Note 1)	X1.01	V
Maximum Outputcurrent	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		450		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA		7		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA		110		mV
	V_{DIF2}	I_{OUT} =200mA		220		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V		0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.04		%/V
CE“High”Voltage	VCEH	Start up	1.0			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN}=[V_{OUT}+1]V+ 1Vp-pAC, I_{OUT}=10mA,1kHZ		70		dB
		V_{IN}=[V_{OUT}+1]V+ 1Vp-pAC, I_{OUT}=100mA,10kHZ		62		
		V_{IN}=[V_{OUT}+1]V+ 1Vp-pAC, I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OUT} =0V		65		mA

AT6211C30 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA		8		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA		100		mV
	V_{DIF2}	I_{OUT} =200mA		210		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V		0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	1.0			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT}+1]V +1Vp-pAC, I_{OUT}=10mA,1kHZ		70		dB
		V_{IN} = [V_{OUT}+1]V +1Vp-pAC, I_{OUT}=100mA,10kHZ		62		
		V_{IN} = [V_{OUT}+1]V +1Vp-pAC, I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OU} =0V		65		mA

AT6211C33 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-byCurrent	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OUT} =0V			70		mA

AT6211C33 （SOT343R，FBP1*1-4L，SOT353）

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

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-byCurrent	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OUT} =0V			70		mA

AT6211C36 (V_{IN}=V_{OUT}+1V,V_{CE} =V_{IN},C_{IN}=C_L=1uF,Ta=25°C,unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X1.01	V
Maximum utput Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			8		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			100		mV
	V_{DIF2}	I_{OUT} =200mA			200		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			40	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}=V_{IN}, V_{OUT}=0V			100		mA

AT6211C50 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			8		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			100		mV
	V_{DIF2}	I_{OUT} =200mA			200		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			40	60	μA
Stand-by Current	I_{CEL}	V_{CE} =0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.7	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}=V_{IN}, V_{OUT}=0V			100		mA

AT6211A30 (V_{IN}= V_{OUT}+1V，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			8		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			100		mV
	V_{DIF2}	I_{OUT} =200mA			210		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE} =V_{IN}, V_{OUT} =0V			65		mA

AT6211A33 (V_{IN}= V_{OUT}+1V，C_{IN}=C_L=1uF，Ta=25°C,unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.1	1.0	%/V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} =[V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{OUT} =0V			70		mA

AT6211A25 (V_{IN}= V_{OUT}+1V，C_{IN}=C_L=1uF，Ta=25°C,unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA		9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA		80		mV
	V_{DIF2}	I_{OUT} =200mA		180		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.1	1.0	%/V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC; I_{OUT}=10mA,1kHZ		70		dB
		I_{OUT}=100mA,10kHZ		62		
		I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{OUT} =0V		60		mA

AT6211H15 (V_{IN}= V_{OUT}+1V，V_{CE} = GND，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.98	V_{OUT} (T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA		9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA		200		mV
	V_{DIF2}	I_{OUT} =200mA		400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		30	60	μA
Stand-by Current	I_{CEL}	V_{CE} =V_{IN}		0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Shut down	1.0			V
CE “Low” Voltage	VCEL	Start up			0.4	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC; I_{OUT}=10mA,1kHZ		70		dB

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 Vin pin while maintaining a certain Iout value.)

3.V_{DIF}:V_{IN1} –V_{OUT} (E)’

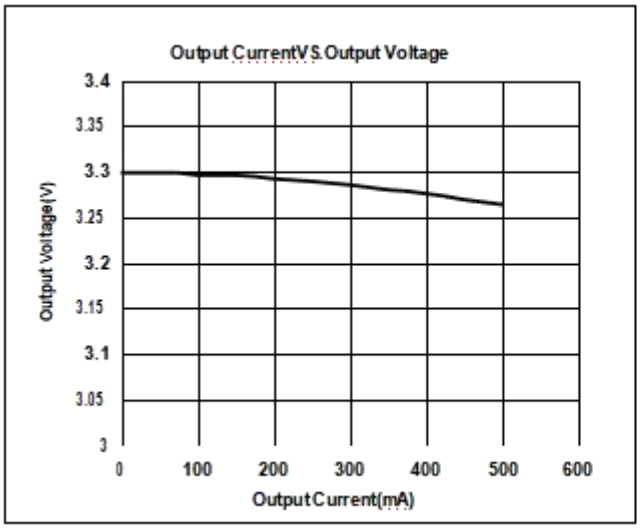
V_{IN1}: The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

V_{OUT} (E)’=Avoltage equal to 98% of the output voltage whenever an amply stabilized Iout{V_{OUT} (T)+1.0V} is input.

Typical Characteristics

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

AT6211C33SEG



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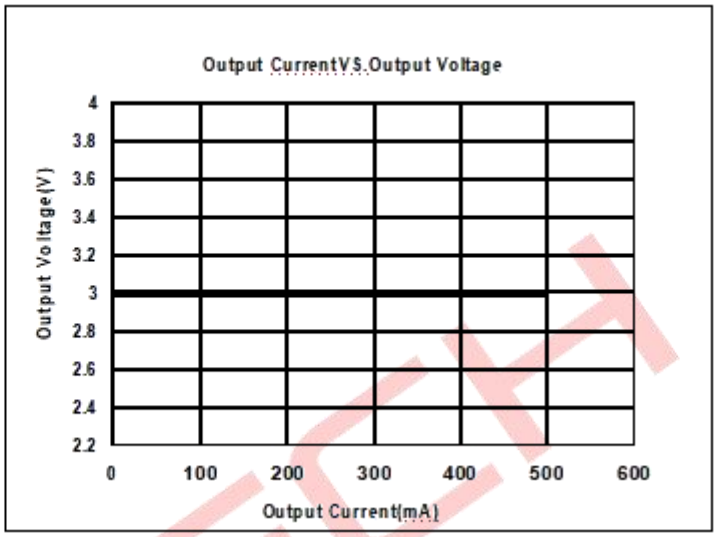

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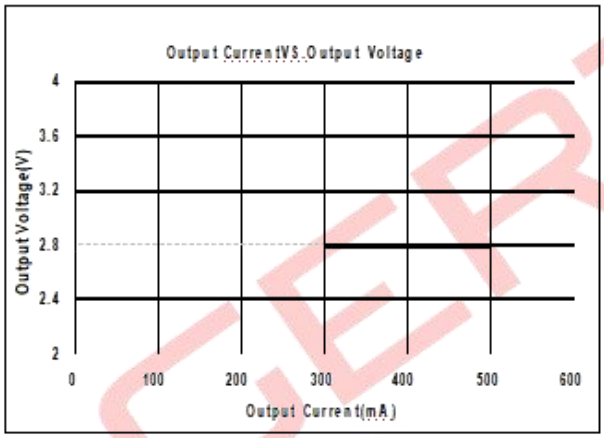

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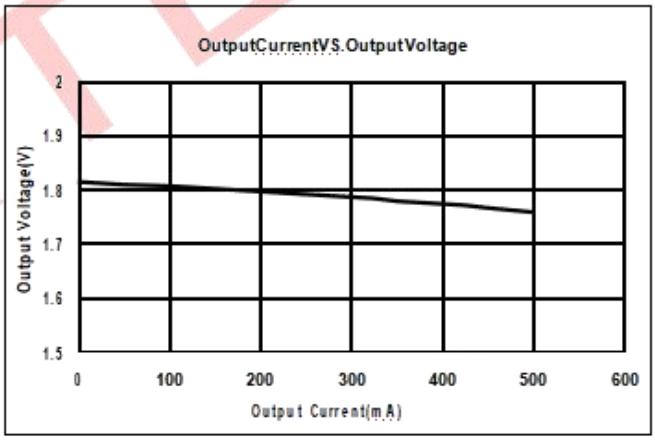

Output Voltage(V)

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

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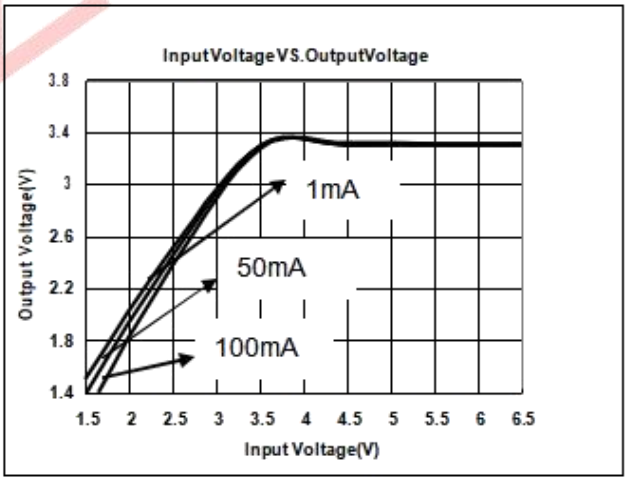

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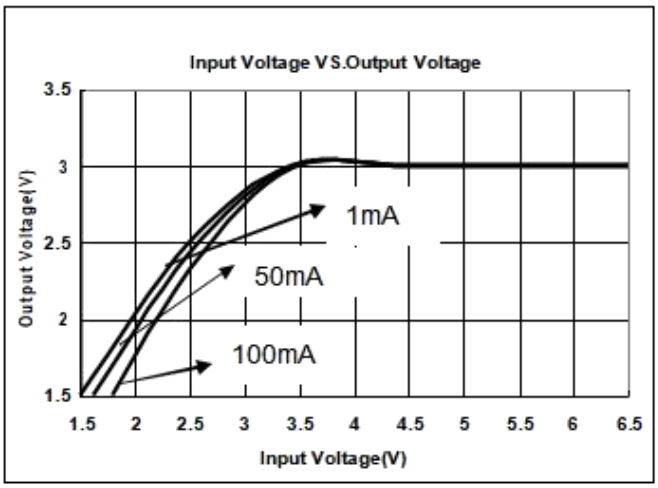

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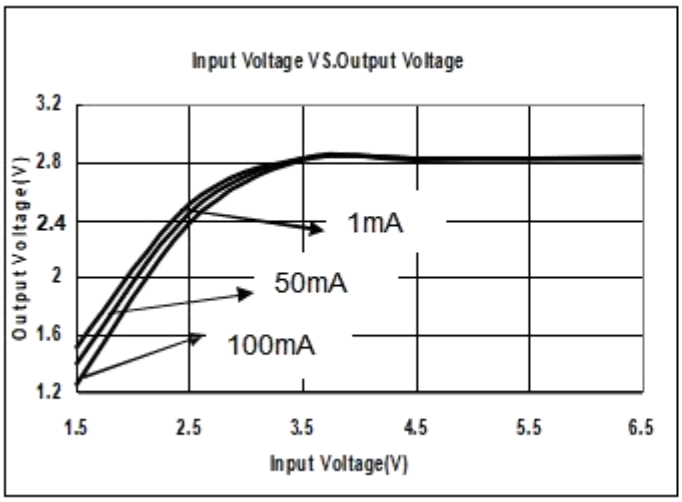

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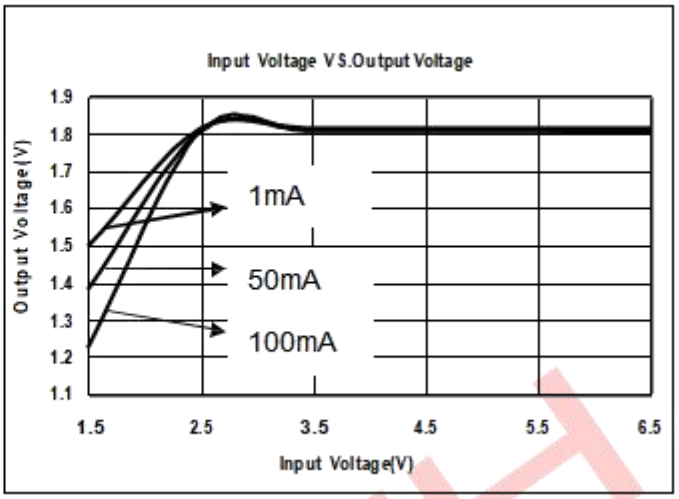

（3） Output Current VS.Droput Voltage （VIN=Vout+1V,**Ta = 25 °C**）

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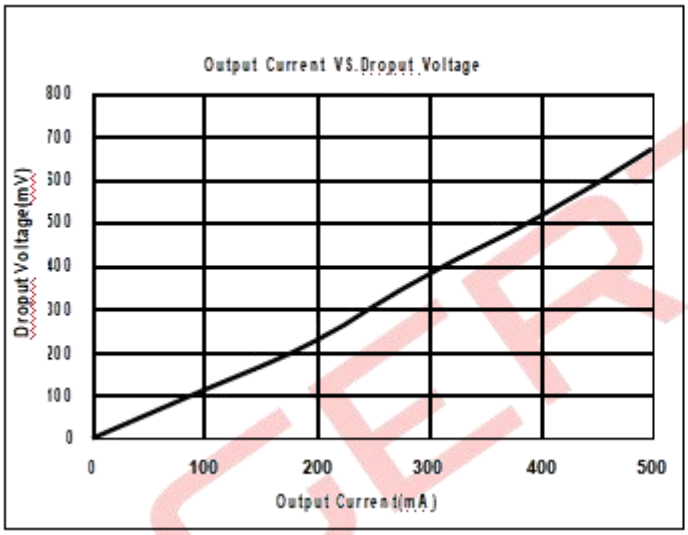

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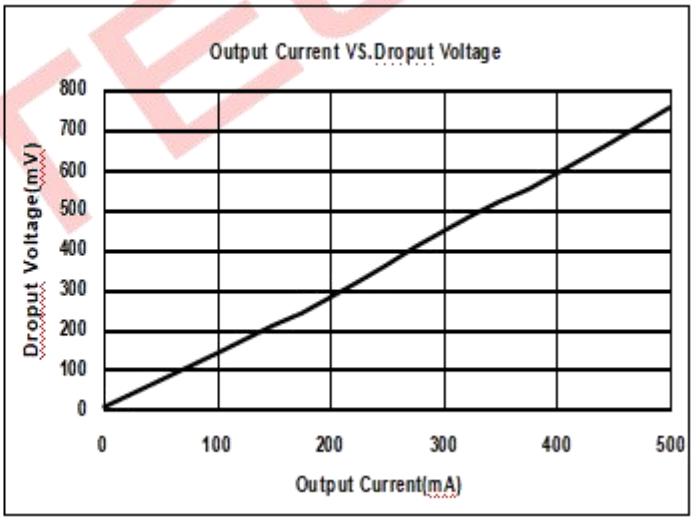

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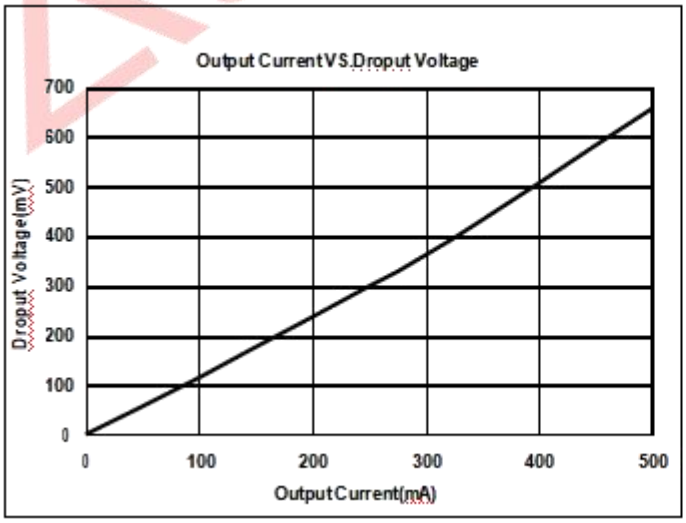

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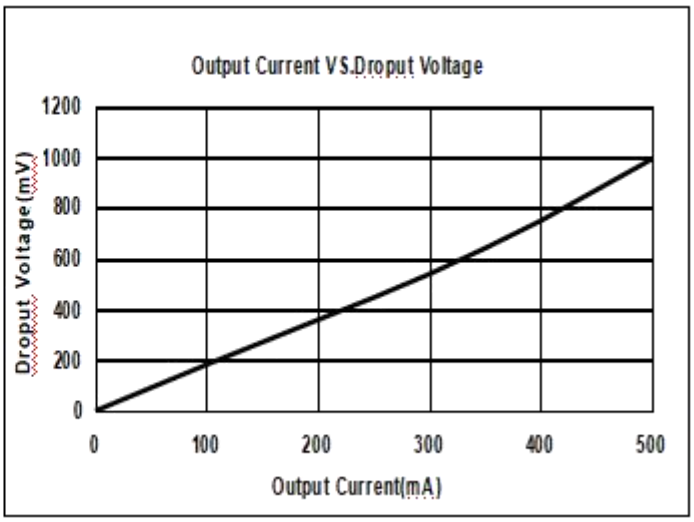
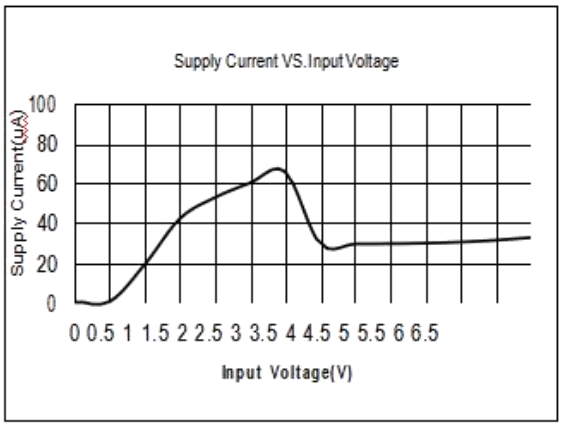


（4） Input Voltage VS. Supply Current （**Ta = 25 °C**）

AT6211C33SEG



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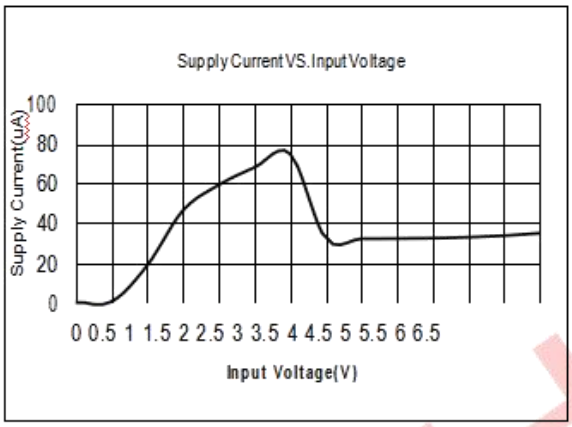

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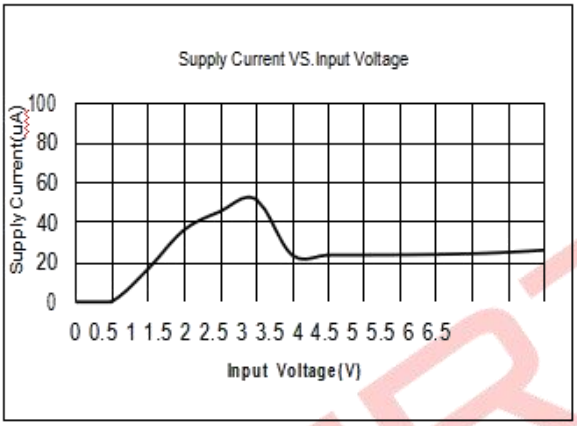

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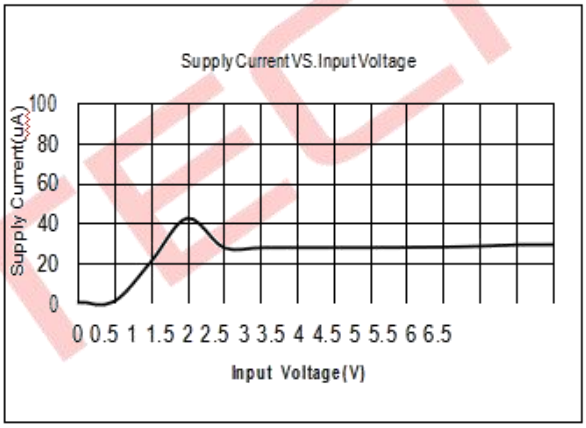
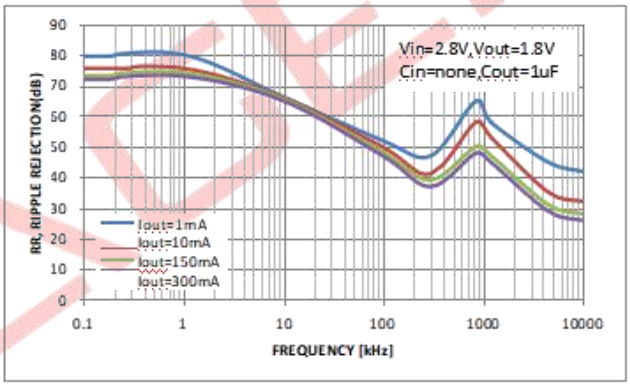


（5） PSRR

AT6211C18SEG



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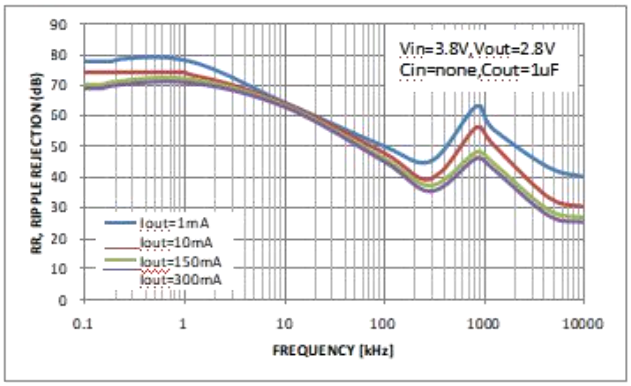
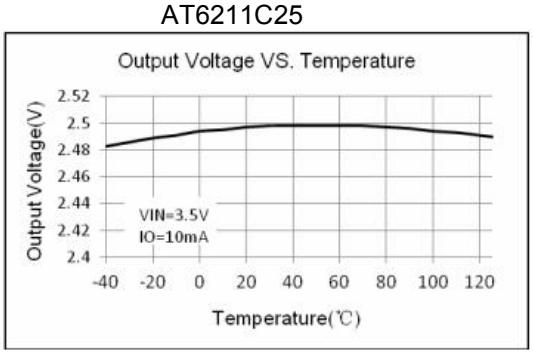


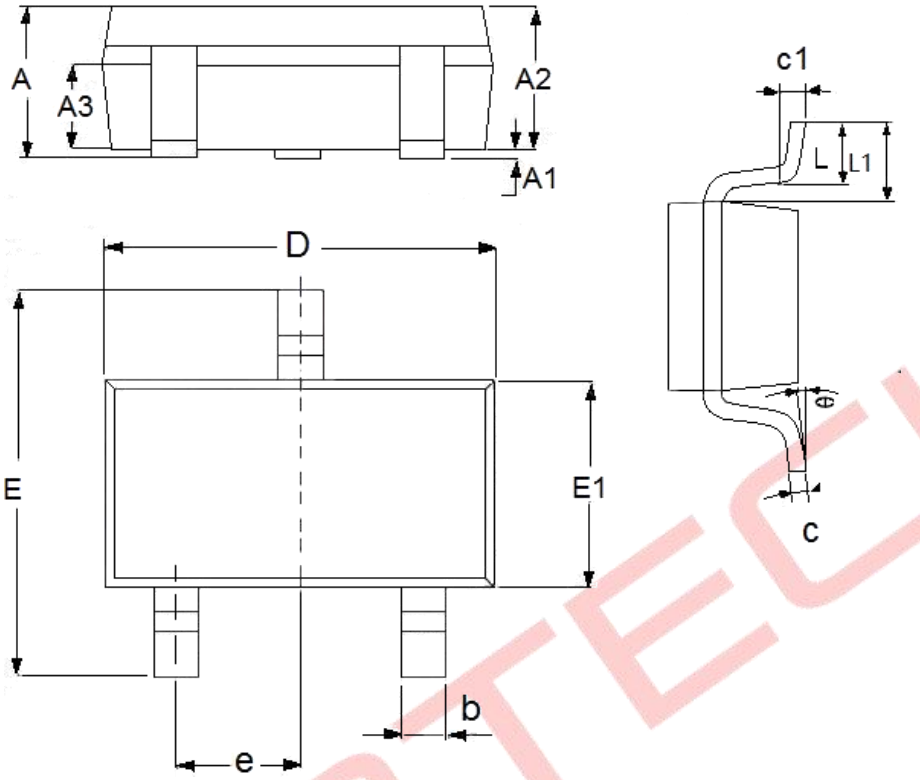
（6） Temperature vs. Output Voltage

AT6211C25



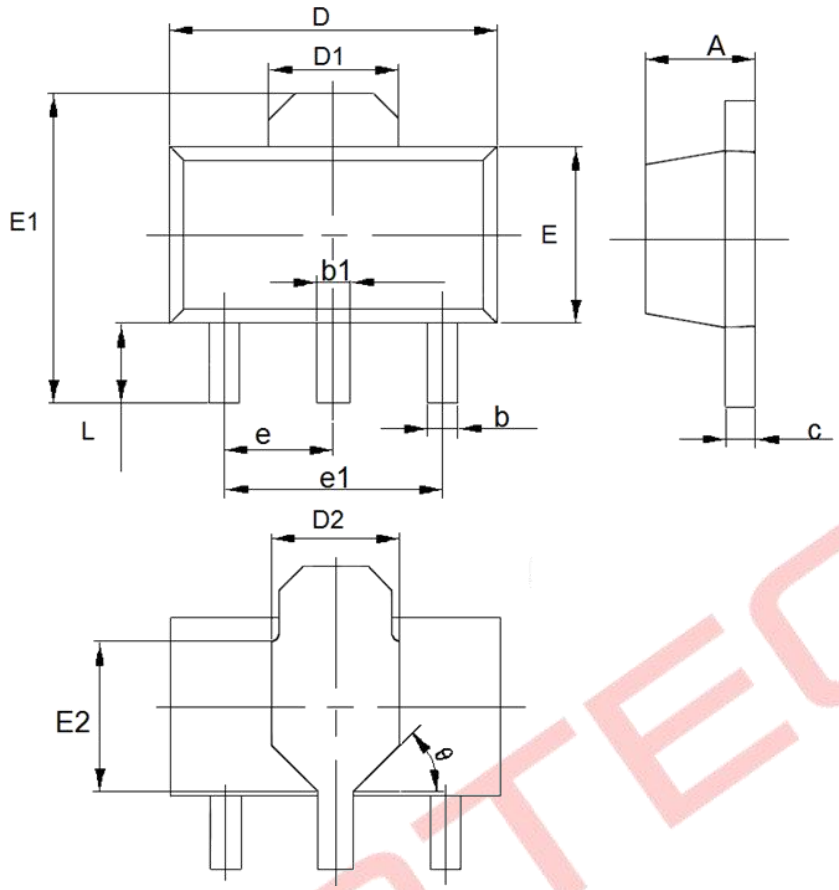
Packaging Information

- Package Type：SOT23-3



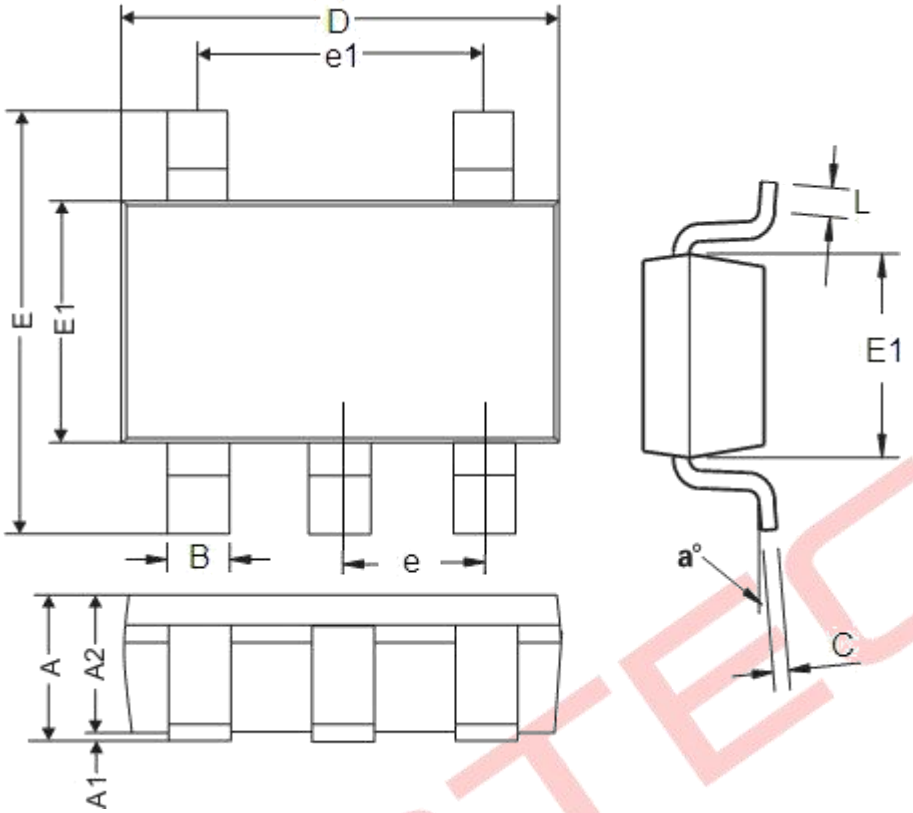
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0571
A1	0	0.15	0.0000	0.0059
A2	0.9	1.3	0.0354	0.0512
A3	0.6	0.7	0.0236	0.0276
b	0.25	0.5	0.0098	0.0197
c	0.1	0.25	0.0039	0.0098
D	2.8	3.1	0.1102	0.1220
E	2.6	3.1	0.1023	0.1220
E1	1.5	1.8	0.0591	0.0709
e	0.95(TYP)		0.0374(TYP)	
L	0.25	0.6	0.0098	0.0236
L1	0.59(TYP)		0.0232(TYP)	
θ	0	8°	0.0000	8°
c1	0.2(TYP)		0.0079(TYP)	

- **Package Type：SOT89-3**



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.4	1.6	0.0551	0.063
b	0.32	0.52	0.0126	0.0205
b1	0.4	0.58	0.0157	0.0228
c	0.35	0.45	0.0138	0.01772
D	4.4	4.6	0.1732	0.1811
D1	1.55(TYP)		0.061(TYP)	
D2	1.75(TYP)		0.0689(TYP)	
e1	3(TYP)		0.1181(TYP)	
E	2.3	2.6	0.0906	0.1023
E1	3.94	4.4	0.1551	0.1732
E2	1.9(TYP)		0.0748(TYP)	
e	1.5(TYP)		0.0591(TYP)	
L	0.8	1.2	0.0315	0.0472
θ	45°		45°	

- **Package Type：SOT23-5**



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.25	0.5	0.0098	0.0196
C	0.10	0.23	0.0039	0.0090
D	2.82	3.05	0.1110	0.1200
E	2.60	3.05	0.1023	0.1200
E1	1.50	1.75	0.0590	0.0688
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a^0	0^0	30^0	0^0	30^0

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