BP662 Series Low ESR Cap Compatable Positive Voltage Regulators

BP662 series are highly precise, low power consumption, high voltage, positive voltage regulators manufactured using CMOS and laser trimming technologies .The series provides large currents with a significantly small dropout voltage**.**

The series is compatible with low ESR ceramic capacitors .The current limiter's foldback circuit also operates as a short protect for the output current limiter and the output pin.

FEATURES

- Highly Accurate：±2%；
- Output voltage range：1.5V~5.0V (selectable in 0.1V steps)；
- Low power consumption：Typ. =8.0μA；
- Large output current ：300mA；
- Input voltage: up to 7 V
- Dropout voltage：
  0.2V at 100mA and 0.40V at 200mA；
- Input Stability
- Be available to regulator and reference voltage；
- Packages：SOT23-3，SOT89-3，SOT23，TO-92

Selection Guide

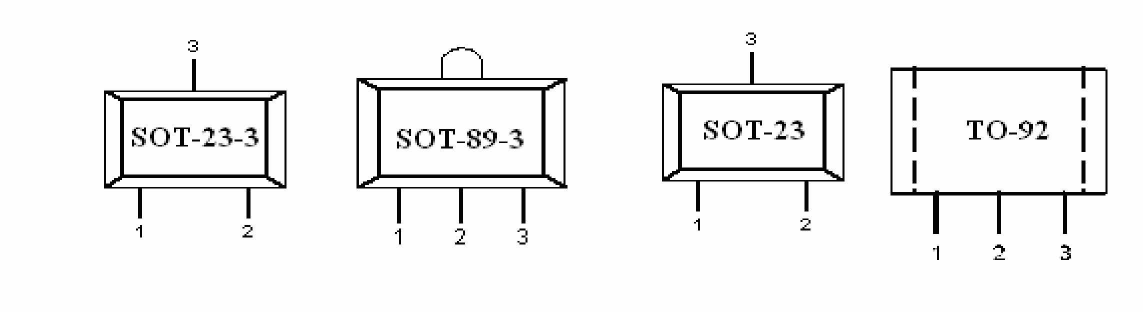
BP 662 A xx x

BP	Better Power
662	Product series
A	Sersion or Function
xx	Feature Code
x	Package P-SOT-89-3 M3-SOT23-3

APPLICATIONS

- Battery powered equipment；
- Communication tools；
- Mobile phones；
- Portable games；
- Portable AV systems；
- Cameras, Video systems；
- Reference voltage sources。

PINCONFIGURATION

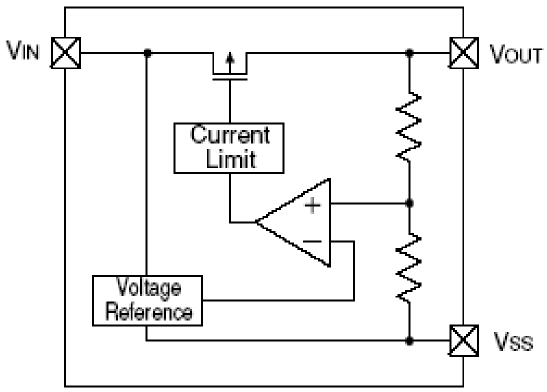


PIN ASSIGNMENT

BP662Axx

PIN					NAME	FUNCTION
M3	P	P1	X	T		
SOT23-3	SOT89-3	SOT89-3	SOT23	TO-92		
1	1	2	1	1	Vss	Ground
2	3	1	2	3	Vout	Output
3	2	3	3	2	Vin	input

Block　Diagram



Absolute Maximum Ratings

PARAMETER		SYMBOL	DESCRIPTION	UNIT
Input Voltage		V_{IN}	8	V
Output Current		I_{out}	500	mA
Output Voltage		V_{out}	Vss-0.3 ~ Vout+0.3	V
Power Dissipation	SOT23-3	Pd	300	mW
	SOT89-3	Pd	500	mW
	SOT23	Pd	300	mW
	TO-92	Pd	500	mW
Operating Ambient Temperature		T_{Opr}	-25 ~ +85	℃
Storage Temperature		T_{stg}	-40 ~ +125	℃

Electrical Characteristics

BP662A15

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
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
Input Voltage	V_{IN}				7	V
Maximum Output Current	I_{OUT} (max)	V_{IN}=Vout+1V		100		mA
Load Regulation	ΔV_{OUT}	V_{IN}=Vout+1V, 1mA≤I_{OUT}≤80mA		10		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =20mA		180		mV
	V_{dif2}	I_{OUT} =50mA		360		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		7		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	I_{OUT} =10mA Vout+1V ≤V_{IN}≤5V		0.1		%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		45		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		20		mA
Over Current Protection	I_{limit}			300		mA

BP662A28

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
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
Input Voltage	V_{IN}				7	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		12		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =80mA		180		mV
	V_{dif2}	I_{OUT} =200mA		360		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		8		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤5V		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		45		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		25		mA
Over Current Protection	I_{limit}			500		mA

BP662A30

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
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
Input Voltage	V_{IN}				7	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		14		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =80mA		180		mV
	V_{dif2}	I_{OUT} =200mA		380		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		8		μ A
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6V		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		50		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		30		mA
Over Current Protection	I_{limit}			500		mA

BP662A33

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
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
Input Voltage	V_{IN}				7	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		14		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =80mA		180		mV
	V_{dif2}	I_{OUT} =200mA		380		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		8		μ A
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6V		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		50		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		30		mA
Over Current Protection	I_{limit}			500		mA

BP662A50

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
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
Input Voltage	V_{IN}				7	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		14		mV
Dropout Voltage (Note 3)	V_{dif1}	I_{OUT} =80mA		180		mV
	V_{dif2}	I_{OUT} =200mA		380		mV
Supply Current	I_{SS}	V_{IN}=Vout+1V		8		μ A
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =40mA Vout+1V ≤V_{IN}≤6V		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	Vin= [Vout+1]V +1Vp-pAC I_{OUT} =10mA,f=1kHz		50		dB
Short Circuit Current	I_{short}	Vin=Vout(T)+1.5V Vout=Vss		30		mA
Over Current Protection	I_{limit}			500		mA

Note :

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

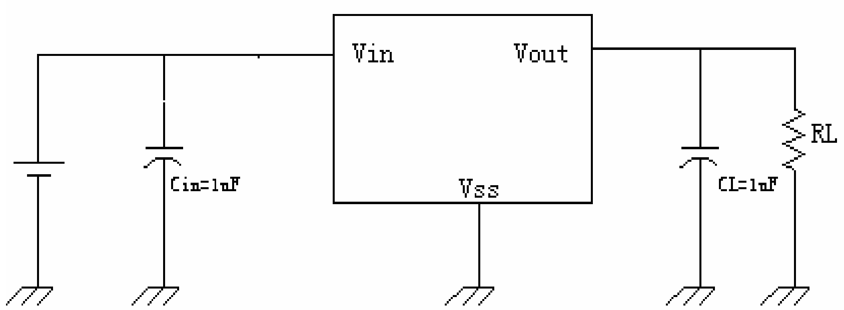
2.V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when "V_{OUT} (T)+1.0V"is provided at the Vin pin while maintaining a certain Iout value.)

3.V_{dif} ： V_{IN1} –V_{OUT} (E)'

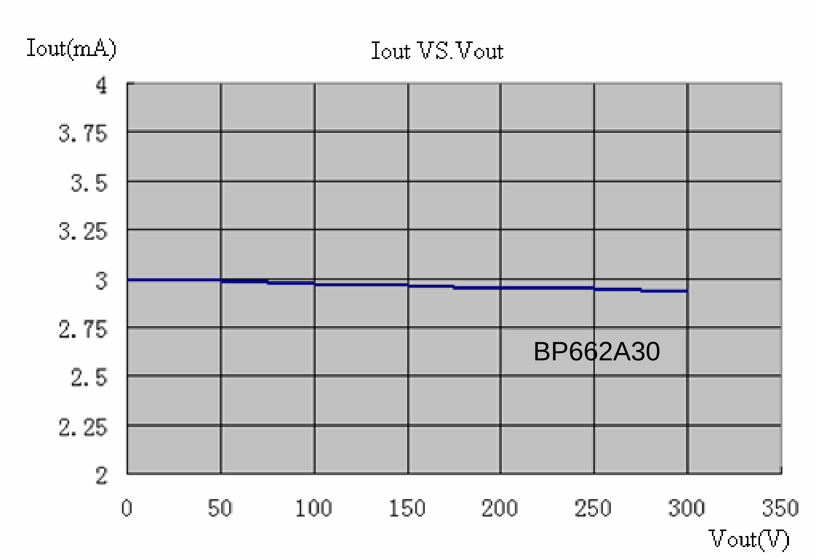
V_{IN1} ： The input voltage when V_{OUT}(E)' appears as input voltage is gradually decreased.

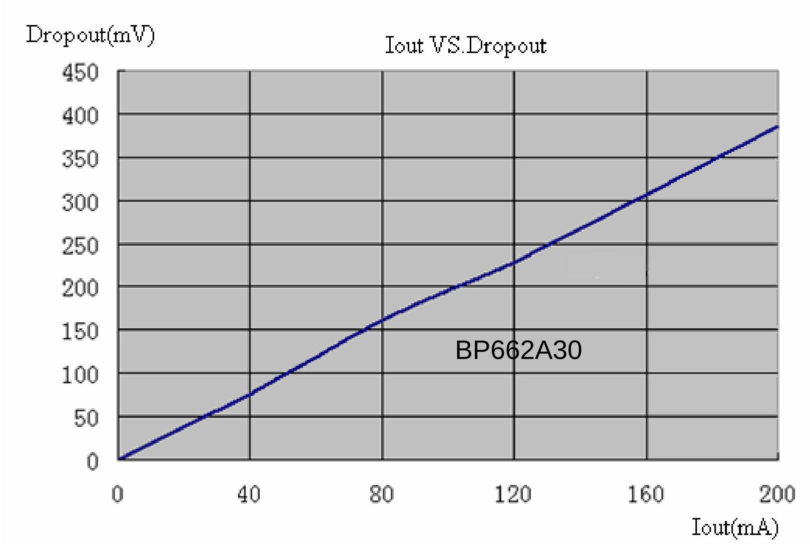
V_{OUT} (E)'=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout {V_{OUT} (T)+1.0V} is input.

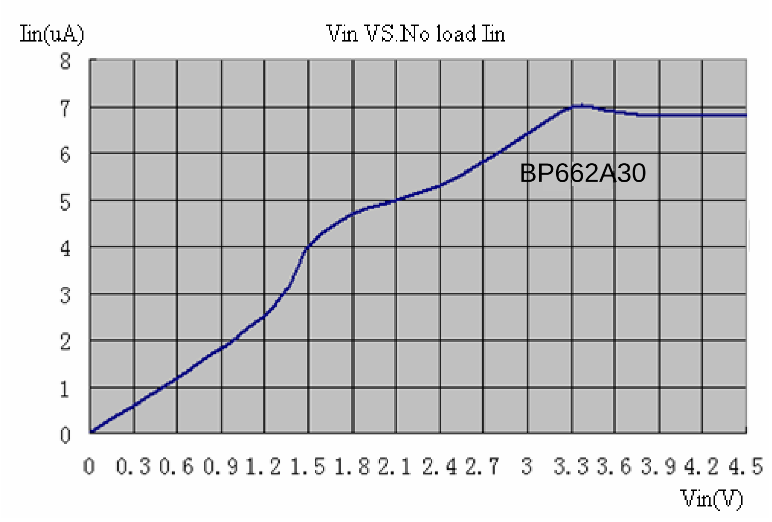
Test Circuits



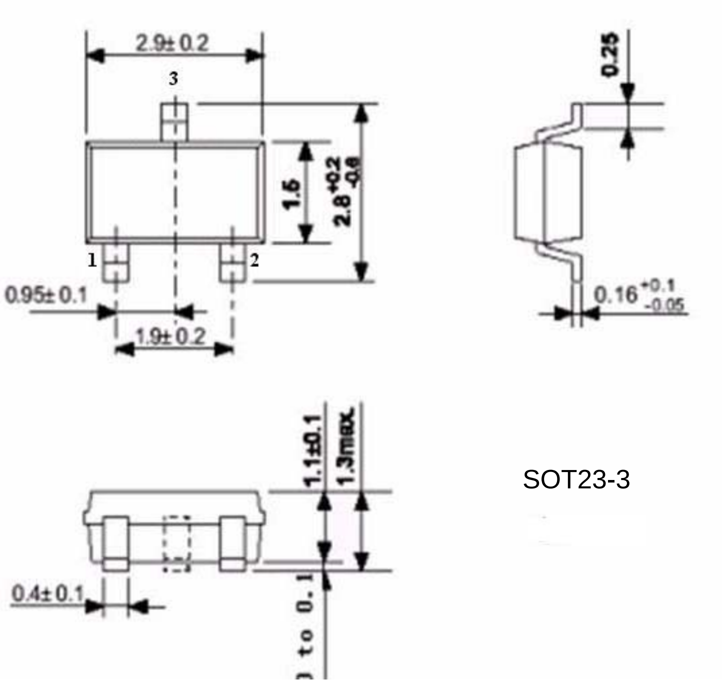
Type Characteristics



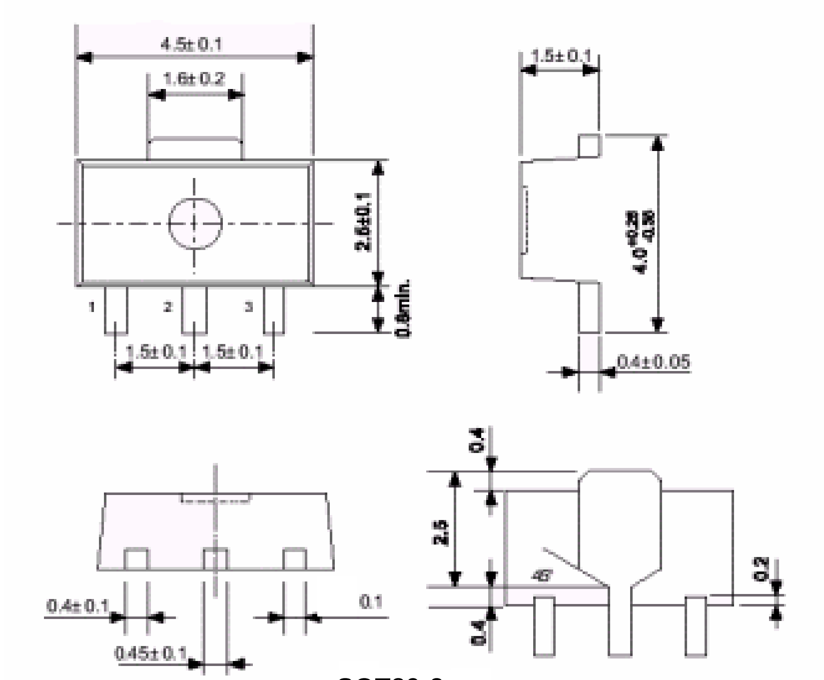




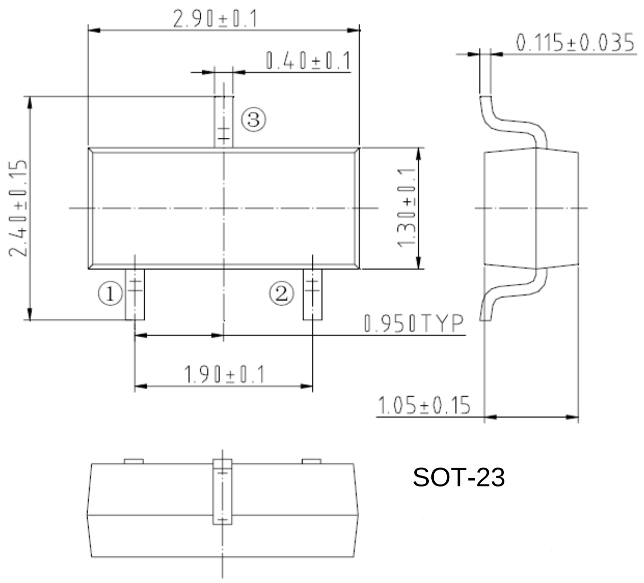
Package



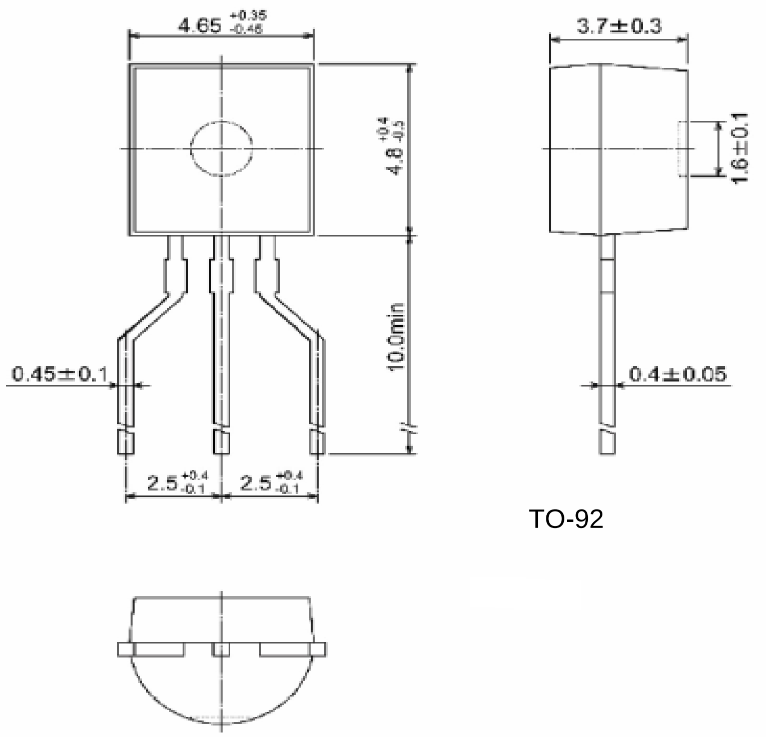
SOT23-3



SOT89-3


2.90±0.1
0.40±0.1
0.115±0.035
③
2.40±0.15
1.30±0.1
①
②
0.950TYP
1.90±0.1
1.05±0.15

SOT-23


4.65 +0.35 -0.46
3.7±0.3
4.8 +0.4 -0.5
1.6±0.1
10.0min
0.45±0.1
0.4±0.05
2.5 +0.4 -0.1
2.5 +0.4 -0.1

TO-92