

BP662 Series Low ESR Cap Compatible

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: $\pm 2\%$;
- Output voltage range: 1.5V~5.0V (selectable in 0.1V steps);
- Low power consumption: Typ. $\approx 8.0 \mu A$;
- 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

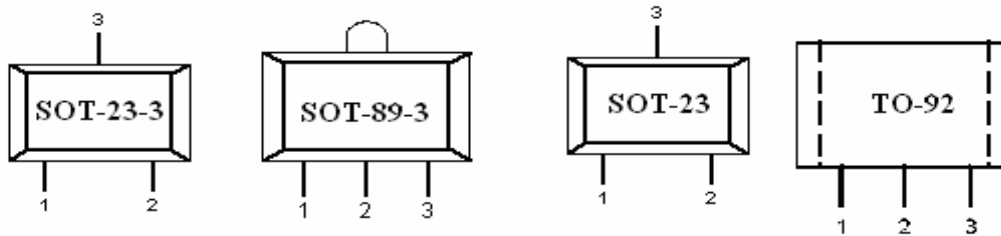
Selection Guide

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.

PIN CONFIGURATION

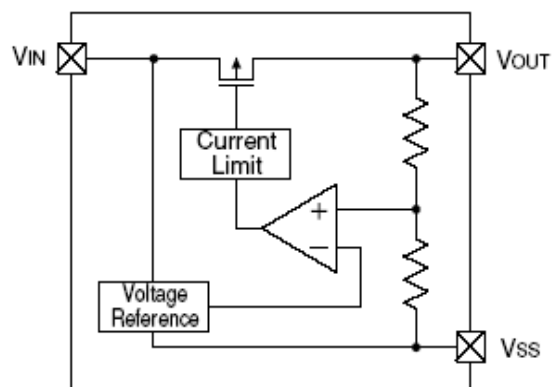


PIN ASSIGNMENT

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}	$V_{ss}-0.3 \sim V_{out}+0.3$	V
Power Dissipation	SOT23-3	P_d	300
	SOT89-3	P_d	500
	SOT23	P_d	300
	TO-92	P_d	500
Operating Ambient Temperature	T_{Opr}	-25 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +125	°C

Electrical Characteristics**BP662A15****(Vin=Vout+1V, Cin=Cout=1uF, Ta=25°C Unless otherwise stated)**

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=10mA$, $V_{IN}=V_{out}+1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				7	V
Maximum Output Current	$I_{OUT} (max)$	$V_{IN}=V_{out}+1V$		100		mA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{out}+1V$, $1mA \leq I_{OUT} \leq 80mA$		10		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 20mA$		180		mV
	V_{dif2}	$I_{OUT} = 50mA$		360		mV
Supply Current	I_{SS}	$V_{IN}=V_{out}+1V$		7		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 10mA$ $V_{out}+1V \leq V_{IN} \leq 5V$		0.1		%/V
Power Supply Ripple Rejection Ratio	PSRR	$V_{in} = [V_{out}+1]V$ $+1Vp-pAC$ $I_{OUT} = 10mA, f=1kHz$		45		dB
Short Circuit Current	I_{short}	$V_{in}=V_{out(T)}+1.5V$ $V_{out}=V_{ss}$		20		mA
Over Current Protection	I_{limit}			300		mA

BP662A28**(Vin=Vout+1V, Cin=Cout=1uF, Ta=25°C Unless otherwise stated)**

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=10mA$, $V_{IN}=V_{out}+1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				7	V
Maximum Output Current	$I_{OUT} (max)$	$V_{IN}=V_{out}+1V$		300		mA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{out}+1V$, $1mA \leq I_{OUT} \leq 100mA$		12		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 80mA$		180		mV
	V_{dif2}	$I_{OUT} = 200mA$		360		mV
Supply Current	I_{SS}	$V_{IN}=V_{out}+1V$		8		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{out}+1V \leq V_{IN} \leq 5V$		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	$V_{in} = [V_{out}+1]V$ $+1Vp-pAC$ $I_{OUT} = 10mA, f=1kHz$		45		dB
Short Circuit Current	I_{short}	$V_{in}=V_{out(T)}+1.5V$ $V_{out}=V_{ss}$		25		mA
Over Current Protection	I_{limit}			500		mA

BP662A30

($V_{IN}=V_{OUT}+1V$, $C_{IN}=C_{OUT}=1\mu F$, $T_a=25^{\circ}C$ Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=10mA$, $V_{IN}=V_{OUT}+1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				7	V
Maximum Output Current	$I_{OUT (max)}$	$V_{IN}=V_{OUT}+1V$		300		mA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{OUT}+1V$ $1mA \leq I_{OUT} \leq 100mA$		14		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 80mA$		180		mV
	V_{dif2}	$I_{OUT} = 200mA$		380		mV
Supply Current	I_{SS}	$V_{IN}=V_{OUT}+1V$		8		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT}+1V \leq V_{IN} \leq 6V$		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	$V_{IN} = [V_{OUT}+1]V$ $+1Vp-pAC$ $I_{OUT} = 10mA, f=1kHz$		50		dB
Short Circuit Current	I_{short}	$V_{IN}=V_{OUT(T)}+1.5V$ $V_{OUT}=V_{SS}$		30		mA
Over Current Protection	I_{limit}			500		mA

BP662A33

($V_{IN}=V_{OUT}+1V$, $C_{IN}=C_{OUT}=1\mu F$, $T_a=25^{\circ}C$ Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=10mA$, $V_{IN}=V_{OUT}+1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				7	V
Maximum Output Current	$I_{OUT (max)}$	$V_{IN}=V_{OUT}+1V$		300		mA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{OUT}+1V$ $1mA \leq I_{OUT} \leq 100mA$		14		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 80mA$		180		mV
	V_{dif2}	$I_{OUT} = 200mA$		380		mV
Supply Current	I_{SS}	$V_{IN}=V_{OUT}+1V$		8		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT}+1V \leq V_{IN} \leq 6V$		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	$V_{IN} = [V_{OUT}+1]V$ $+1Vp-pAC$ $I_{OUT} = 10mA, f=1kHz$		50		dB
Short Circuit Current	I_{short}	$V_{IN}=V_{OUT(T)}+1.5V$ $V_{OUT}=V_{SS}$		30		mA
Over Current Protection	I_{limit}			500		mA

BP662A50

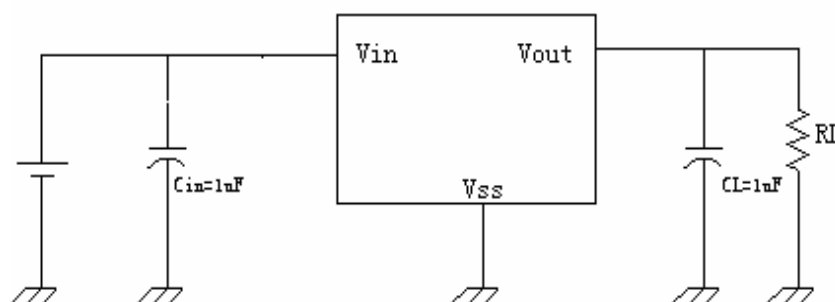
($V_{IN}=V_{OUT}+1V$, $C_{IN}=C_{OUT}=1\mu F$, $T_a=25^\circ C$ Unless otherwise stated)

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Output Voltage	$V_{OUT}(E)$ (Note 2)	$I_{OUT}=10mA$, $V_{IN}=V_{OUT}+1V$	X 0.98	$V_{OUT}(T)$ (Note 1)	X 1.02	V
Input Voltage	V_{IN}				7	V
Maximum Output Current	$I_{OUT} (max)$	$V_{IN}=V_{OUT}+1V$		300		mA
Load Regulation	ΔV_{OUT}	$V_{IN}=V_{OUT}+1V$ $1mA \leq I_{OUT} \leq 100mA$		14		mV
Dropout Voltage (Note 3)	V_{dif1}	$I_{OUT} = 80mA$		180		mV
	V_{dif2}	$I_{OUT} = 200mA$		380		mV
Supply Current	I_{SS}	$V_{IN}=V_{OUT}+1V$		8		μA
Line Regulations	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{OUT}+1V \leq V_{IN} \leq 6V$		0.03		%/V
Power Supply Ripple Rejection Ratio	PSRR	$V_{IN} = [V_{OUT}+1]V$ $+1V_{p-p}AC$ $I_{OUT} = 10mA, f=1kHz$		50		dB
Short Circuit Current	I_{short}	$V_{IN}=V_{OUT}(T)+1.5V$ $V_{OUT}=V_{SS}$		30		mA
Over Current Protection	I_{limit}			500		mA

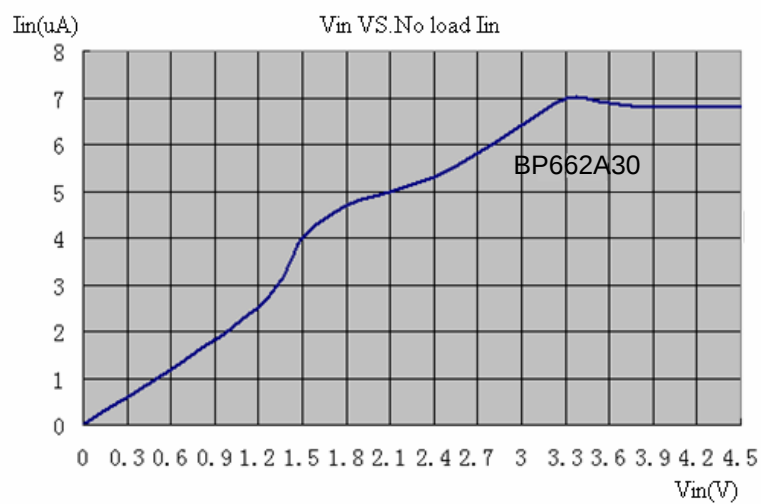
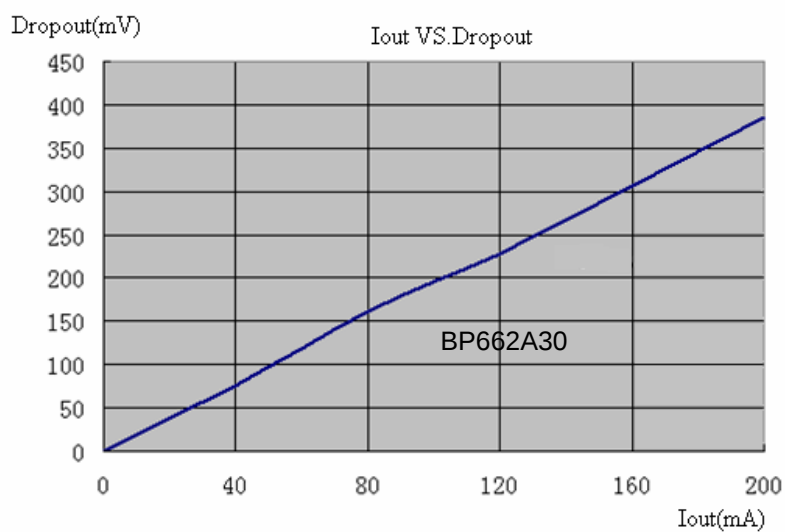
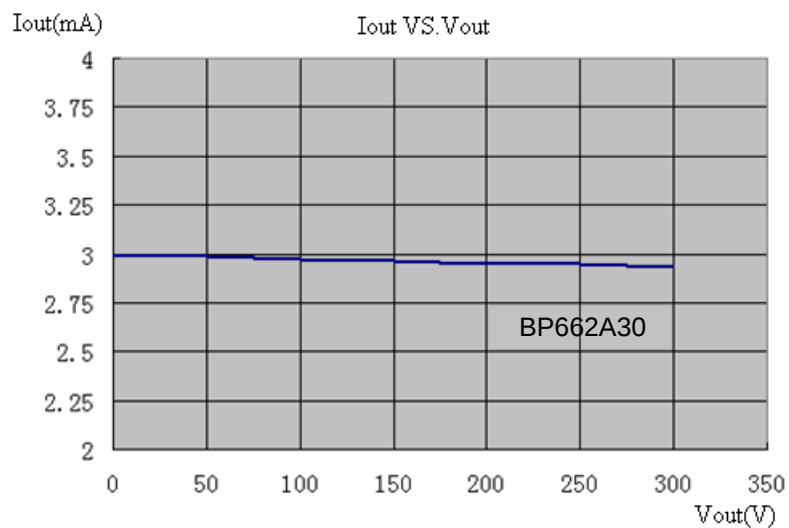
Note :

1. $V_{OUT} (T)$: Specified Output Voltage
2. $V_{OUT} (E)$: Effective Output Voltage (i.e. 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.

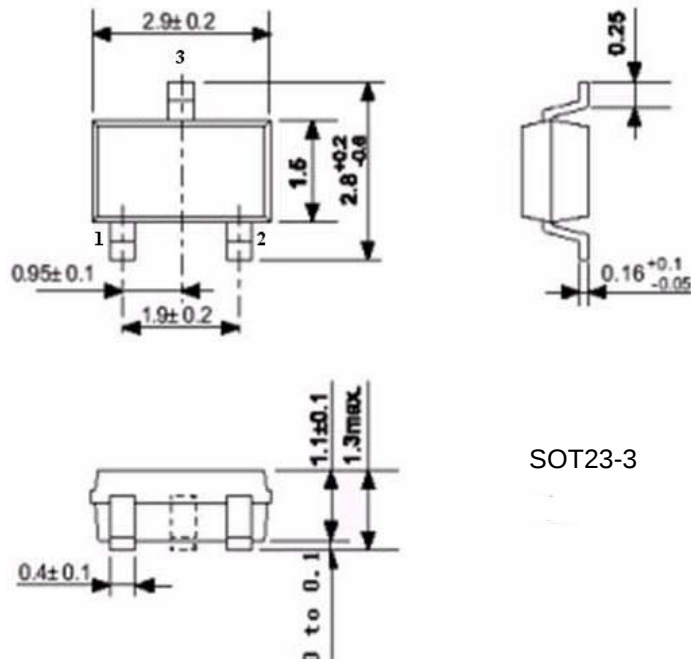
Test Circuits



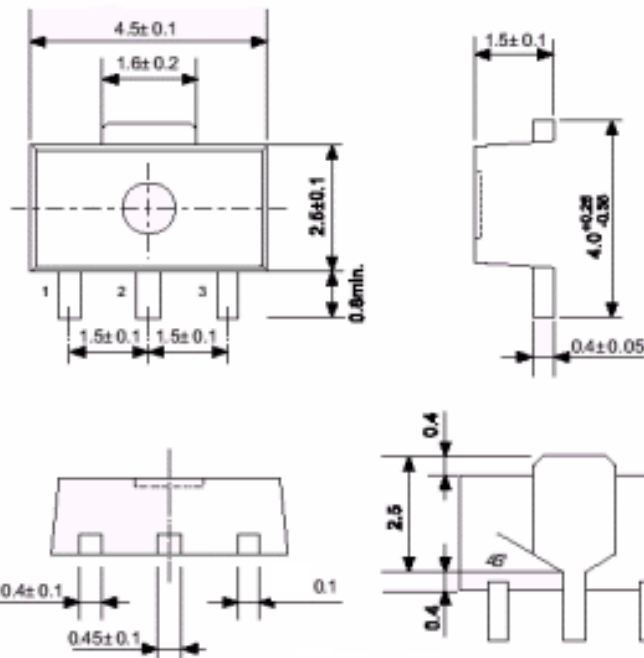
Type Characteristics



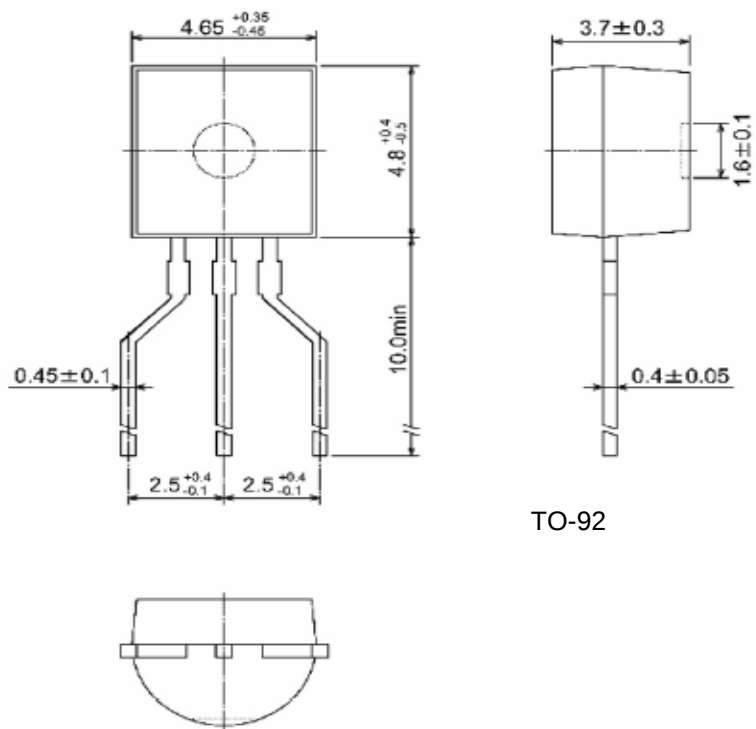
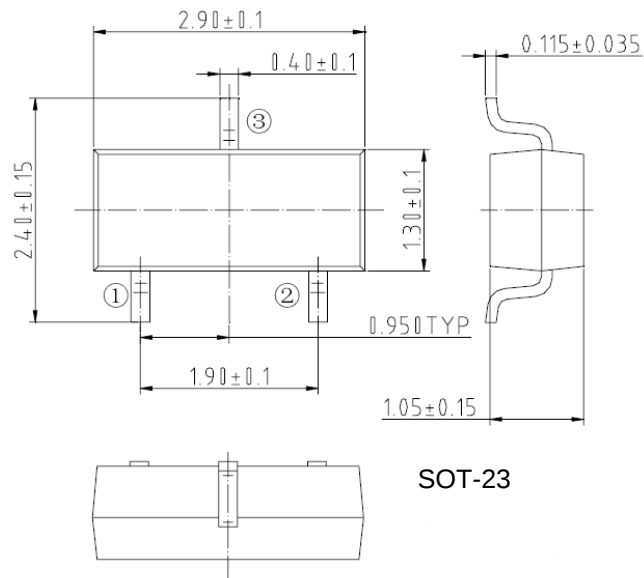
Package



SOT23-3



SOT89-3



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