



**THE DATASHEET OF  
BA033LBSG2-TR**



# Super-mini package regulator IC

## BA000LBSG series

The BA000LBSG (the "000" indicates the output voltage value) is a low-saturation series regulator IC employing the super-mini mold package of the SMP5 (2916 package). Equipped with a power-saving function that reduces current consumption, it also offers outstanding ripple rejection and characteristics, and is ideal for cellular telephones and other.

### ●Applications

Residential / industrial device power supplies for cellular telephone such as the CDMA and GSM, and for other portable.

### ●Features

- 1) Internal output transistor ( $I_o=150\text{mA}$ )
- 2) Internal temperature protection circuit
- 3) Power-saving function enables designs with low current consumption
- 4) High level of ripple rejection (R.R.=66dB)
- 5) SMP5 super-mini package enables space-saving designs
- 6) Low I / O voltage differential (90mV Typ. at  $I_o=50\text{mA}$ )

### ●Super-mini regulator lineup

| Series    | Output voltage (V) |     |     |     |     |     |     |     |     |
|-----------|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | 2.8                | 2.9 | 3.0 | 3.2 | 3.3 | 3.6 | 3.8 | 4.0 | 5.0 |
| BA000LBSG | ○                  | ○   | ○   | ○   | ○   | ○   | ○   | ○   | ○   |

\* "000" indicates the output voltage value. (Example : For 2.8V output, BA028LBSG)

### ●Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

| Parameter             | Symbol | Limits   | Unit |
|-----------------------|--------|----------|------|
| Applied voltage       | Vcc    | 9        | V    |
| Power dissipation     | Pd     | 170*     | mW   |
| Operating temperature | Topr   | -40~+85  | °C   |
| Storage temperature   | Tstg   | -55~+125 | °C   |

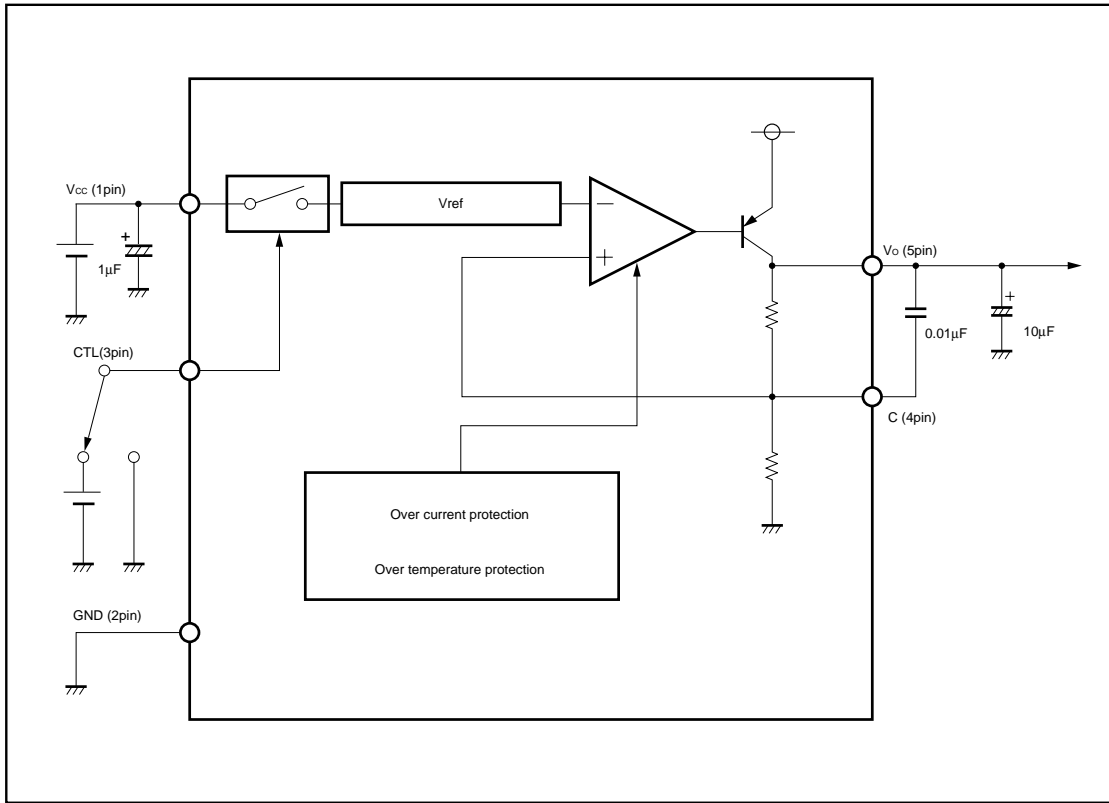
\* Reduced by 1.7mW for each increase in  $T_a$  of 1°C over 25°C

### ●Recommended operating conditions ( $T_a=25^\circ\text{C}$ )

| Parameter                      | Symbol      | Limits  | Unit |
|--------------------------------|-------------|---------|------|
| Operating power supply voltage | Vcc (input) | 2.5~7.0 | V    |

Regulator IC

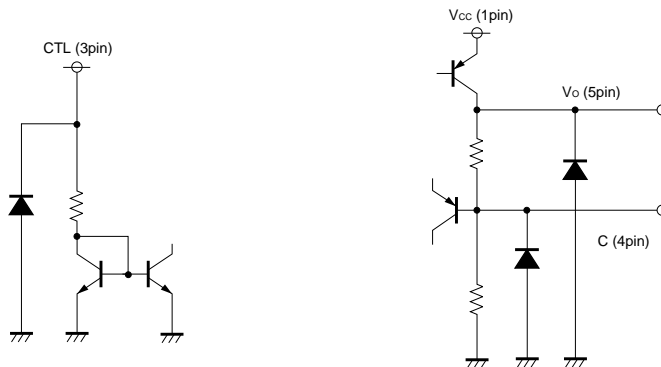
●Block diagram



●Pin descriptions

| Pin No. | Pin name | Function            |
|---------|----------|---------------------|
| 1       | Vcc      | Power supply        |
| 2       | GND      | Ground              |
| 3       | CTL      | Power-save function |
| 4       | C        | Ripple improvement  |
| 5       | OUT      | Output              |

●Input / output circuits



## Regulator IC

## ●Electrical characteristics

BA028LBSG (unless otherwise noted, Ta=25°C, Vcc=3.8V)

| Parameter                 | Symbol           | Min. | Typ. | Max. | Unit | Coniditions   |
|---------------------------|------------------|------|------|------|------|---|
| Standby current           | I <sub>ccs</sub> | -    | 0    | 10   | μA   | V <sub>ctl</sub> =0V  |
| Circuit current           | I <sub>cca</sub> | -    | 65   | 150  | μA   | V <sub>ctl</sub> =3V, no output load                        |
| <Output block>            |                  |      |      |      |      |   |
| Output voltage            | V <sub>o</sub>   | 2.73 | 2.80 | 2.87 | V    | I <sub>o</sub> =50mA* <sup>1</sup>                          |
| Dropout voltage           | ΔV <sub>d</sub>  | -    | 90   | 150  | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub>   |
| Output current capability | I <sub>o</sub>   | 150  | 280  | -    | mA   | -   |
| Load regulation           | Reg.L            | -    | 40   | 80   | mV   | I <sub>o</sub> =1~50mA* <sup>1</sup>                        |
| Input regulation          | Reg.I            | -    | 3    | 30   | mV   | I <sub>o</sub> =10mA, V <sub>cc</sub> =3.8~7V* <sup>1</sup> |
| Output noise voltage      | e <sub>n</sub>   | -    | 56   | -    | μV   | I <sub>o</sub> =10mA, C=0.01μF* <sup>2</sup>                |
| Ripple rejection 1        | R.R1             | 50   | 58   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz                               |
| Ripple rejection 2        | R.R2             | -    | 66   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF* <sup>2</sup>       |
| <Power-save block>        |                  |      |      |      |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -    | -    | 0.6  | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4  | -    | -    | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -    | 6.0  | 15   | μA   | V <sub>ctl</sub> =3V  |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

©Not designed for radiation resistance.

BA029LBSG (unless otherwise noted, Ta=25°C, Vcc=3.9V)

| Parameter                 | Symbol           | Min.  | Typ. | Max.  | Unit | Coniditions   |
|---------------------------|------------------|-------|------|-------|------|---|
| Standby current           | I <sub>ccs</sub> | -     | 0    | 10    | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -     | 65   | 150   | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |       |      |       |      |   |
| Output voltage            | V <sub>o</sub>   | 2.828 | 2.90 | 2.973 | V    | I <sub>o</sub> =50mA* <sup>1</sup>                        |
| Dropout voltage           | ΔV <sub>d</sub>  | -     | 90   | 150   | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150   | 280  | -     | mA   | -   |
| Load regulation           | Reg.L            | -     | 40   | 80    | mV   | I <sub>o</sub> =1~50mA* <sup>1</sup>                      |
| Input regulation          | Reg.I            | -     | 3    | 30    | mV   | V <sub>cc</sub> =3.9~7V                                   |
| Output noise voltage      | e <sub>n</sub>   | -     | 56   | -     | μV   | I <sub>o</sub> =10mA, C=0.01μF* <sup>2</sup>              |
| Ripple rejection 1        | R.R1             | 45    | 58   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -     | 66   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF* <sup>2</sup>     |
| <Power-save block>        |                  |       |      |       |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -     | -    | 0.6   | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4   | -    | -     | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -     | 6.0  | 15    | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

©Not designed for radiation resistance.

## Regulator IC

BA030LBSG (unless otherwise noted, Ta=25°C, Vcc=4.0V)

| Parameter                 | Symbol           | Min.  | Typ. | Max.  | Unit | Coniditions   |
|---------------------------|------------------|-------|------|-------|------|---|
| Standby current           | I <sub>ccs</sub> | -     | 0    | 10    | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -     | 65   | 150   | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |       |      |       |      |   |
| Output voltage            | V <sub>o</sub>   | 2.925 | 3.00 | 3.075 | V    | I <sub>o</sub> =50mA*1                                    |
| Dropout voltage           | ΔV <sub>d</sub>  | -     | 90   | 150   | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150   | 280  | -     | mA   | -   |
| Load regulation           | Reg.L            | -     | 40   | 80    | mV   | I <sub>o</sub> =1~50mA*1                                  |
| Input regulation          | Reg.I            | -     | 3    | 30    | mV   | I <sub>o</sub> =10mA, V <sub>cc</sub> =4.0~7V*1           |
| Output noise voltage      | en               | -     | 56   | -     | μV   | I <sub>o</sub> =10mA, C=0.01μF*2                          |
| Ripple rejection 1        | R.R1             | 50    | 58   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -     | 66   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF*2                 |
| <Power-save block>        |                  |       |      |       |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -     | -    | 0.6   | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4   | -    | -     | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -     | 6.0  | 15    | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

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BA032LBSG (unless otherwise noted, Ta=25°C, Vcc=4.2V)

| Parameter                 | Symbol           | Min. | Typ. | Max. | Unit | Coniditions   |
|---------------------------|------------------|------|------|------|------|---|
| Standby current           | I <sub>ccs</sub> | -    | 0    | 10   | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -    | 65   | 150  | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |      |      |      |      |   |
| Output voltage            | V <sub>o</sub>   | 3.12 | 3.20 | 3.28 | V    | I <sub>o</sub> =50mA*1                                    |
| Dropout voltage           | ΔV <sub>d</sub>  | -    | 90   | 150  | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150  | 280  | -    | mA   | -   |
| Load regulation           | Reg.L            | -    | 40   | 80   | mV   | I <sub>o</sub> =1~50mA*1                                  |
| Input regulation          | Reg.I            | -    | 3    | 30   | mV   | I <sub>o</sub> =10mA, V <sub>cc</sub> =4.2~7V*1           |
| Output noise voltage      | en               | -    | 56   | -    | μV   | I <sub>o</sub> =10mA, C=0.01μF*2                          |
| Ripple rejection 1        | R.R1             | 50   | 58   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -    | 66   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF*2                 |
| <Power-save block>        |                  |      |      |      |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -    | -    | 0.6  | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4  | -    | -    | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -    | 6.0  | 15   | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

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## Regulator IC

BA033LBSG (unless otherwise noted, Ta=25°C, Vcc=4.3V)

| Parameter                 | Symbol           | Min.  | Typ. | Max.  | Unit | Coniditions   |
|---------------------------|------------------|-------|------|-------|------|---|
| Standby current           | I <sub>ccs</sub> | -     | 0    | 10    | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -     | 65   | 150   | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |       |      |       |      |   |
| Output voltage            | V <sub>o</sub>   | 3.218 | 3.30 | 3.382 | V    | I <sub>o</sub> =50mA*1                                    |
| Dropout voltage           | ΔV <sub>d</sub>  | -     | 90   | 150   | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150   | 280  | -     | mA   | -   |
| Load regulation           | Reg.L            | -     | 40   | 80    | mV   | I <sub>o</sub> =1~50mA*1                                  |
| Input regulation          | Reg.I            | -     | 3    | 30    | mV   | V <sub>cc</sub> =4.3~7V                                   |
| Output noise voltage      | en               | -     | 56   | -     | μV   | I <sub>o</sub> =10mA, C=0.01μF*2                          |
| Ripple rejection 1        | R.R1             | 45    | 58   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -     | 66   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF*2                 |
| <Power-save block>        |                  |       |      |       |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -     | -    | 0.6   | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4   | -    | -     | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -     | 6.0  | 15    | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

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BA036LBSG (unless otherwise noted, Ta=25°C, Vcc=4.6V)

| Parameter                 | Symbol           | Min. | Typ. | Max. | Unit | Coniditions   |
|---------------------------|------------------|------|------|------|------|---|
| Standby current           | I <sub>ccs</sub> | -    | 0    | 10   | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -    | 65   | 150  | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |      |      |      |      |   |
| Output voltage            | V <sub>o</sub>   | 3.51 | 3.60 | 3.69 | V    | I <sub>o</sub> =50mA*1                                    |
| Dropout voltage           | ΔV <sub>d</sub>  | -    | 90   | 150  | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150  | 280  | -    | mA   | -   |
| Load regulation           | Reg.L            | -    | 40   | 80   | mV   | I <sub>o</sub> =1~50mA*1                                  |
| Input regulation          | Reg.I            | -    | 3    | 30   | mV   | V <sub>cc</sub> =4.6~7V                                   |
| Output noise voltage      | en               | -    | 56   | -    | μV   | I <sub>o</sub> =10mA, C=0.01μF*2                          |
| Ripple rejection 1        | R.R1             | 45   | 56   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -    | 66   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF*2                 |
| <Power-save block>        |                  |      |      |      |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -    | -    | 0.6  | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4  | -    | -    | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -    | 6.0  | 15   | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

©Not designed for radiation resistance.

## Regulator IC

BA038LBSG (unless otherwise noted, Ta=25°C, Vcc=4.8V)

| Parameter                 | Symbol           | Min.  | Typ. | Max.  | Unit | Coniditions   |
|---------------------------|------------------|-------|------|-------|------|---|
| Standby current           | I <sub>ccs</sub> | -     | 0    | 10    | μA   | V <sub>ctl</sub> =0V  |
| Circuit current           | I <sub>cca</sub> | -     | 65   | 150   | μA   | V <sub>ctl</sub> =3V, no output load                        |
| <Output block>            |                  |       |      |       |      |   |
| Output voltage            | V <sub>o</sub>   | 3.705 | 3.80 | 3.895 | V    | I <sub>o</sub> =50mA* <sup>1</sup>                          |
| Dropout voltage           | ΔV <sub>d</sub>  | -     | 90   | 150   | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub>   |
| Output current capability | I <sub>o</sub>   | 150   | 280  | -     | mA   | -   |
| Load regulation           | Reg.L            | -     | 40   | 80    | mV   | I <sub>o</sub> =1~50mA* <sup>1</sup>                        |
| Input regulation          | Reg.I            | -     | 3    | 30    | mV   | I <sub>o</sub> =10mA, V <sub>cc</sub> =4.8~7V* <sup>1</sup> |
| Output noise voltage      | en               | -     | 56   | -     | μV   | I <sub>o</sub> =10mA, C=0.01μF* <sup>2</sup>                |
| Ripple rejection 1        | R.R1             | 50    | 56   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz                               |
| Ripple rejection 2        | R.R2             | -     | 66   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF* <sup>2</sup>       |
| <Power-save block>        |                  |       |      |       |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -     | -    | 0.6   | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4   | -    | -     | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -     | 6.0  | 15    | μA   | V <sub>ctl</sub> =3V  |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

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BA040LBSG (unless otherwise noted, Ta=25°C, Vcc=5.0V)

| Parameter                 | Symbol           | Min. | Typ. | Max. | Unit | Coniditions   |
|---------------------------|------------------|------|------|------|------|---|
| Standby current           | I <sub>ccs</sub> | -    | 0    | 10   | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -    | 65   | 150  | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |      |      |      |      |   |
| Output voltage            | V <sub>o</sub>   | 3.90 | 4.00 | 4.10 | V    | I <sub>o</sub> =50mA* <sup>1</sup>                        |
| Dropout voltage           | ΔV <sub>d</sub>  | -    | 90   | 150  | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150  | 280  | -    | mA   | -   |
| Load regulation           | Reg.L            | -    | 40   | 80   | mV   | I <sub>o</sub> =1~50mA* <sup>1</sup>                      |
| Input regulation          | Reg.I            | -    | 3    | 30   | mV   | V <sub>cc</sub> =5.0~7V                                   |
| Output noise voltage      | en               | -    | 56   | -    | μV   | I <sub>o</sub> =10mA, C=0.01μF* <sup>2</sup>              |
| Ripple rejection 1        | R.R1             | 45   | 56   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -    | 66   | -    | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF* <sup>2</sup>     |
| <Power-save block>        |                  |      |      |      |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -    | -    | 0.6  | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4  | -    | -    | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -    | 6.0  | 15   | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta=Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

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Regulator IC

BA050LBSG (unless otherwise noted, Ta=25°C, Vcc=6.0V)

| Parameter                 | Symbol           | Min.  | Typ. | Max.  | Unit | Coniditions   |
|---------------------------|------------------|-------|------|-------|------|---|
| Standby current           | I <sub>ccs</sub> | -     | 0    | 10    | μA   | V <sub>ctl</sub> =0V                                      |
| Circuit current           | I <sub>cca</sub> | -     | 65   | 150   | μA   | V <sub>ctl</sub> =3V, no output load                      |
| <Output block>            |                  |       |      |       |      |   |
| Output voltage            | V <sub>o</sub>   | 4.875 | 5.00 | 5.125 | V    | I <sub>o</sub> =50mA*1                                    |
| Dropout voltage           | ΔV <sub>d</sub>  | -     | 90   | 150   | mV   | I <sub>o</sub> =50mA, V <sub>cc</sub> =0.95V <sub>o</sub> |
| Output current capability | I <sub>o</sub>   | 150   | 280  | -     | mA   | -   |
| Load regulation           | Reg.L            | -     | 40   | 80    | mV   | I <sub>o</sub> =1~50mA*1                                  |
| Input regulation          | Reg.I            | -     | 3    | 30    | mV   | V <sub>cc</sub> =6.0~7V                                   |
| Output noise voltage      | e <sub>n</sub>   | -     | 56   | -     | μV   | I <sub>o</sub> =10mA, C=0.01μF*2                          |
| Ripple rejection 1        | R.R1             | 45    | 54   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz                             |
| Ripple rejection 2        | R.R2             | -     | 66   | -     | dB   | I <sub>o</sub> =10mA, f=400Hz, C=0.01μF*2                 |
| <Power-save block>        |                  |       |      |       |      |   |
| CTL OFF voltage           | V <sub>off</sub> | -     | -    | 0.6   | V    | -   |
| CTL ON voltage            | V <sub>on</sub>  | 2.4   | -    | -     | V    | -   |
| CTL inflow current        | I <sub>ctl</sub> | -     | 6.0  | 15    | μA   | V <sub>ctl</sub> =3V                                      |

\* In order to measure at Ta≒Tj (pulse measurement), fluctuations in output resulting from temperature fluctuations are not included.

\* Design guaranteed. (Not all products have been inspected.)

A capacitor (0.01μF) is used between pin 4 and pin 5, to improve ripple rejection.

©Not designed for radiation resistance.

●Application example

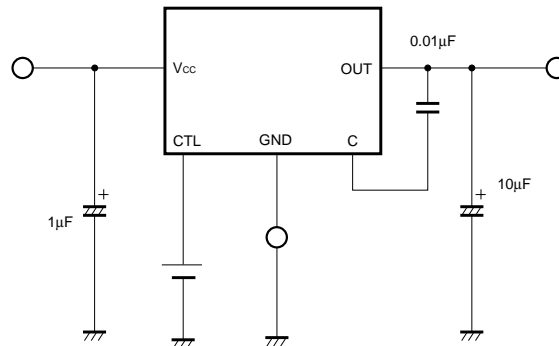
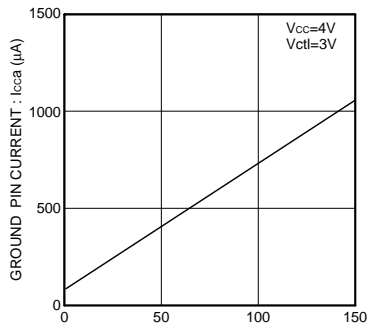


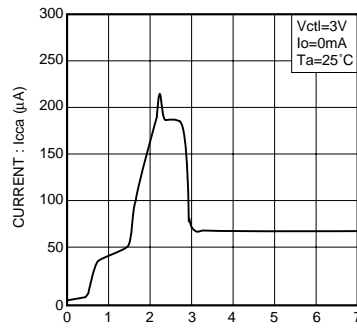
Fig.1

Regulator IC

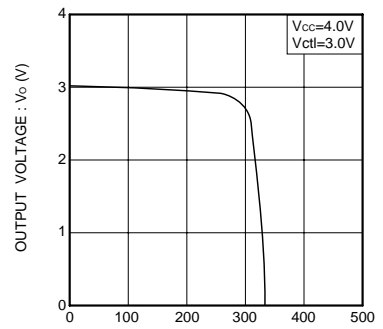
●Electrical characteristic curves (BA030LBSG)



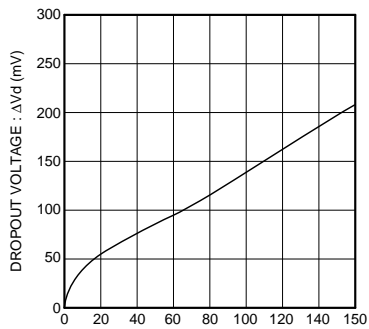
LOAD CURRENT :  $I_o$  (mA)  
Fig.2  $I_{cca}$  vs.  $I_o$



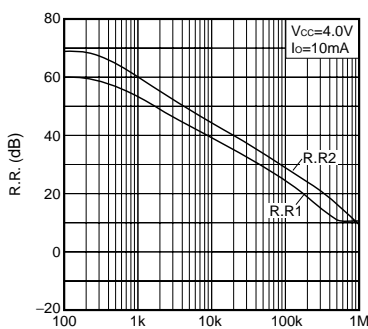
SUPPLY VOLTAGE :  $V_{cc}$  (V)  
Fig.3  $I_{cca}$  vs.  $V_{cc}$



LOAD CURRENT :  $I_o$  (mA)  
Fig.4  $I_o$  vs.  $V_o$

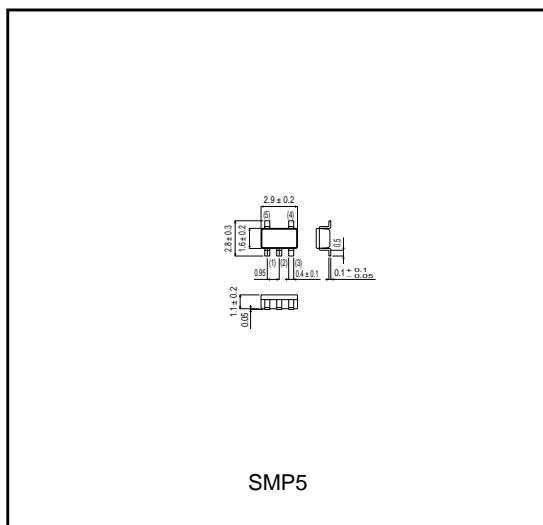


OUTPUT CURRENT :  $I_o$  (mA)  
Fig.5  $\Delta V_d$  vs.  $I_o$



FREQUENCY :  $f$  (Hz)  
Fig.6 R.R. vs.  $f$  characteristics

●External dimensions (Units : mm)



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