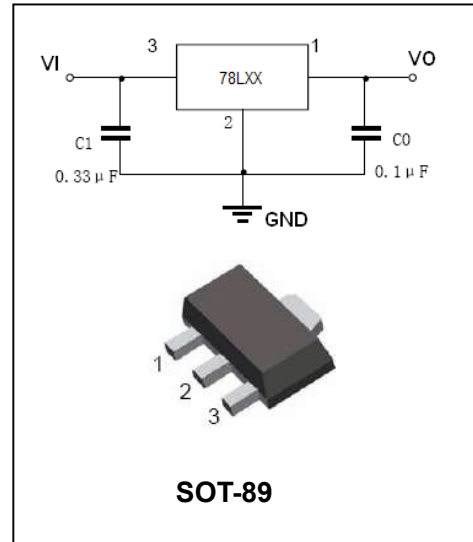


## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### FEATURES

- Wide range of available, fixed output voltage.
- Low cost.
- Internal short-circuit current limiting.
- Internal thermal overload protection.
- No external components required.
- Complementary negative regulators offered (BL79LXX series).



### APPLICATIONS

- Three-terminal positive voltage regulator.

### ORDERING INFORMATION

| Type No. | Marking | Package Code |
|----------|---------|--------------|
| BL78LXX  | 78LXX   | SOT-89       |

### MAXIMUM RATING operating temperature range applies unless otherwise specified

| Symbol         | Parameter                            | Value       | Units |
|----------------|--------------------------------------|-------------|-------|
| $V_I$          | Input voltage(3.3V-9V)               | 30          | V     |
|                | (10V-15V)                            | 35          |       |
|                | (18V-24V)                            | 40          |       |
| $I_{CM}$       | Maximum output current               | 100         | mA    |
| $R_{th\ j-c}$  | Thermal Resistance, Junction to Case | 250         | °C/W  |
| $P_D$          | Power dissipation                    | 500         | mW    |
| $T_{OPR}$      | Operating junction temperature       | -25 to +125 | °C    |
| $T_J, T_{STG}$ | Storage temperature range            | -65 to +150 | °C    |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

**ELECTRICAL CHARACTERISTICS** (refer to the test circuits,  $T_J = 0$  to  $125^\circ\text{C}$ ,  $V_I = 8.3\text{V}$ ,  $I_O = 40\text{mA}$ ,  $C_I = 0.33\ \mu\text{F}$ ,  $C_O = 0.1\ \mu\text{F}$  unless otherwise specified)

| Parameter                | Symbol                     | Test conditions   | BL78L33 |     |       | UNIT          |
|--------------------------|----------------------------|---|---------|-----|-------|---------------|
|                          |                            |   | MIN     | TYP | MAX   |               |
| Output voltage           | $V_O$                      | $T_J = 25^\circ\text{C}$  | 3.036   | 3.3 | 3.564 | V             |
|                          |                            | $5.3\text{V} \leq V_i \leq 20\text{V}, I_O = 1\text{mA} - 40\text{mA}$                                    | 2.97    |     | 3.63  |               |
|                          |                            | $V_i = 8.3\text{V}, I_O = 1\text{mA} - 70\text{mA}$   | 2.97    |     | 3.63  |               |
| Load regulation          | $\text{Reg}_{\text{load}}$ | $T_J = 25^\circ\text{C}, I_O = 1\text{mA} - 100\text{mA}$   |         |     | 60    | mV            |
|                          |                            | $T_J = 25^\circ\text{C}, I_O = 1\text{mA} - 40\text{mA}$  |         |     | 30    |               |
| Line regulation          | $\text{Reg}_{\text{line}}$ | $5.3\text{V} \leq V_i \leq 20\text{V}, T_J = 25^\circ\text{C}$  |         |     | 150   | mV            |
|                          |                            | $6.3\text{V} \leq V_i \leq 20\text{V}, T_J = 25^\circ\text{C}$  |         |     | 100   |               |
| Quiescent Current        | $I_d$                      | $T_J = 25^\circ\text{C}$  |         |     | 6.0   | mA            |
|                          |                            | $T_J = 125^\circ\text{C}$   |         |     | 5.5   |               |
| Quiescent Current Change | $\Delta I_d$               | $6.3\text{V} \leq V_i \leq 20\text{V}$  |         |     | 1.5   | mA            |
|                          |                            | $1\text{mA} \leq I_O \leq 40\text{mA}$  |         |     | 0.2   |               |
| Output noise voltage     | $e_N$                      | $10\text{Hz} \leq f \leq 100\text{KHz}$   |         | 40  |       | $\mu\text{V}$ |
| Supply Voltage Rejection | SVR                        | $I_O = 40\text{mA}, 6.3\text{V} \leq V_i \leq 16.3\text{V}$<br>$f = 120\text{Hz}, T_J = 25^\circ\text{C}$ | 41      | 49  |       | dB            |
| Dropout Voltage          | $V_d$                      |   |         | 1.7 |       | V             |

### ELECTRICAL CHARACTERISTICS

( $V_{IN} = 10\text{V}, I_O = 40\text{mA}, 0^\circ\text{C} < T_J < 125^\circ\text{C}, C_I = 0.33\ \mu\text{F}, C_O = 0.1\ \mu\text{F}$ , unless otherwise specified)

| Parameter                 | Symbol                     | Test conditions   | BL78L05 |     |      | UNIT          |
|---------------------------|----------------------------|---|---------|-----|------|---------------|
|                           |                            |   | MIN     | TYP | MAX  |               |
| Output voltage            | $V_O$                      | $T_J = 25^\circ\text{C}$  | 4.8     | 5.0 | 5.2  | V             |
|                           |                            | $7\text{V} \leq V_i \leq 20\text{V}, I_O = 1\text{mA} - 40\text{mA}$                                  | 4.75    |     | 5.25 |               |
|                           |                            | $V_i = 10\text{V}, I_O = 1\text{mA} - 70\text{mA}$  | 4.75    |     | 5.25 |               |
| Load regulation           | $\text{Reg}_{\text{load}}$ | $T_J = 25^\circ\text{C}, I_O = 1\text{mA} - 100\text{mA}$   |         | 11  | 60   | mV            |
|                           |                            | $T_J = 25^\circ\text{C}, I_O = 1\text{mA} - 40\text{mA}$  |         | 5   | 30   |               |
| Line regulation           | $\text{Reg}_{\text{line}}$ | $7\text{V} \leq V_i \leq 20\text{V}, T_J = 25^\circ\text{C}$  |         | 55  | 150  | mV            |
|                           |                            | $8\text{V} \leq V_i \leq 20\text{V}, T_J = 25^\circ\text{C}$  |         | 45  | 100  |               |
| Input Bias Current        | $I_{IB}$                   | $T_J = 25^\circ\text{C}$  |         | 3.8 | 6.0  | mA            |
|                           |                            | $T_J = 125^\circ\text{C}$   |         |     | 5.5  |               |
| Input Bias Current Change | $\Delta I_{IB}$            | $8\text{V} \leq V_i \leq 20\text{V}$  |         |     | 1.5  | mA            |
|                           |                            | $1\text{mA} \leq I_O \leq 40\text{mA}$  |         |     | 0.1  |               |
| Output noise voltage      | $V_N$                      | $10\text{Hz} \leq f \leq 100\text{KHz}$   |         | 40  |      | $\mu\text{V}$ |
| Ripple rejection          | RR                         | $I_O = 40\text{mA}, 8\text{V} \leq V_i \leq 18\text{V}, f = 120\text{Hz}$<br>$T_J = 25^\circ\text{C}$ | 41      | 49  |      | dB            |
| Dropout voltage           | $V_I - V_O$                | $T_J = 25^\circ\text{C}$  |         | 1.7 |      | V             |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=12V, I_O=40mA, 0^\circ C < T_j < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol          | Test conditions  | BL78L06 |      |      | UNIT        |
|---------------------------|-----------------|--|---------|------|------|-------------|
|                           |                 |  | MIN     | TYP  | MAX  |             |
| Output voltage            | $V_O$           | $T_j=25^\circ C$   | 5.75    | 6.0  | 6.25 | V           |
|                           |                 | $V_1=8.5V-20V, I_O=1mA-40mA$                               | 5.7     |      | 6.3  |             |
|                           |                 | $V_1=8.5V, I_O=1mA-70mA$                                   | 5.7     |      | 6.3  |             |
| Load regulation           | $Reg_{load}$    | $T_j=25^\circ C, I_O=1mA-100mA$                            |         | 12.8 | 80   | mV          |
|                           |                 | $T_j=25^\circ C, I_O=1mA-70mA$                             |         | 5.8  | 40   |             |
| Line regulation           | $Reg_{line}$    | $8.5V \leq V_i \leq 20V, T_j=25^\circ C$                   |         | 64   | 175  | mV          |
|                           |                 | $9V \leq V_i \leq 20V, T_j=25^\circ C$                     |         | 54   | 125  |             |
| Input Bias Current        | $I_{IB}$        | $T_j=25^\circ C, V_{IN}=12V, I_O=40mA$                     |         |      | 5.5  | mA          |
|                           |                 | $T_j=125^\circ C, V_{IN}=12V, I_O=40mA$                    |         | 3.9  | 6.0  |             |
| Input Bias Current Change | $\Delta I_{IB}$ | $9V \leq V_i \leq 20V$                                     |         |      | 1.5  | mA          |
|                           |                 | $1mA \leq I_O \leq 40mA$                                   |         |      | 0.1  |             |
| Output noise voltage      | $V_N$           | $10Hz \leq f \leq 100KHz$                                  |         | 40   |      | $\mu V/V_O$ |
| Ripple rejection          | RR              | $I_O=40mA, 10V \leq V_i \leq 20V, f=120Hz, T_j=25^\circ C$ | 40      | 46   |      | dB          |
| Dropout voltage           | $V_D$           | $T_j=25^\circ C$   |         | 1.7  |      | V           |

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=14V, I_O=40mA, 0^\circ C < T_j < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol          | Test conditions  | BL78L08 |     |     | UNIT    |
|---------------------------|-----------------|--|---------|-----|-----|---------|
|                           |                 |  | MIN     | TYP | MAX |         |
| Output voltage            | $V_O$           | $T_j=25^\circ C$   | 7.7     | 8.0 | 8.3 | V       |
|                           |                 | $10.5V \leq V_i \leq 23V, I_O=1mA-40mA$                    | 7.6     |     | 8.4 |         |
|                           |                 | $V_1=14V, I_O=1mA-70mA$                                    | 7.6     |     | 8.4 |         |
| Load regulation           | $Reg_{load}$    | $T_j=25^\circ C, I_O=1mA-100mA$                            |         | 15  | 80  | mV      |
|                           |                 | $T_j=25^\circ C, I_O=1mA-40mA$                             |         | 8.0 | 40  |         |
| Line regulation           | $Reg_{line}$    | $10.5V \leq V_i \leq 23V, T_j=25^\circ C$                  |         | 20  | 175 | mV      |
|                           |                 | $11V \leq V_i \leq 23V, T_j=25^\circ C$                    |         | 12  | 125 |         |
| Input Bias Current        | $I_{IB}$        | $T_j=25^\circ C$   |         | 3   | 6.0 | mA      |
|                           |                 | $T_j=125^\circ C$  |         |     | 5.5 |         |
| Input Bias Current Change | $\Delta I_{IB}$ | $11V \leq V_i \leq 23V$                                    |         |     | 1.5 | mA      |
|                           |                 | $1mA \leq I_O \leq 40mA$                                   |         |     | 0.1 |         |
| Output noise voltage      | $V_N$           | $T_A=25^\circ C, 10Hz \leq f \leq 100KHz$                  |         | 60  |     | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 12V \leq V_i \leq 23V, f=120Hz, T_j=25^\circ C$ | 37      | 57  |     | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_j=25^\circ C$   |         | 1.7 |     | V       |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=15V, I_O=40mA, 0^{\circ}C < T_j < 125^{\circ}C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol          | Test conditions   | BL78L09 |     |            | UNIT    |
|---------------------------|-----------------|---|---------|-----|------------|---------|
|                           |                 |   | MIN     | TYP | MAX        |         |
| Output voltage            | $V_O$           | $T_j=25^{\circ}C$   | 8.6     | 9.0 | 9.4        | V       |
|                           |                 | $V_i=11.5V-24V, I_O=1mA-40mA$                               | 8.5     |     | 9.5        |         |
|                           |                 | $V_i=15V, I_O=1mA-70mA$                                     | 8.5     |     | 9.5        |         |
| Load regulation           | $Reg_{load}$    | $T_j=25^{\circ}C, I_O=1mA-100mA$                            |         | 15  | 90         | mV      |
|                           |                 | $T_j=25^{\circ}C, I_O=1mA-40mA$                             |         | 8.0 | 40         |         |
| Line regulation           | $Reg_{line}$    | $11.5V \leq V_i \leq 24V, T_j=25^{\circ}C$                  |         | 20  | 175        | mV      |
|                           |                 | $12V \leq V_i \leq 24V, T_j=25^{\circ}C$                    |         | 12  | 125        |         |
| Input Bias Current        | $I_{IB}$        | $T_j=25^{\circ}C$   |         | 3.0 | 6.0        | mA      |
|                           |                 | $T_j=125^{\circ}C$  |         |     | 5.5        |         |
| Input Bias Current Change | $\Delta I_{IB}$ | $11V \leq V_i \leq 23V$<br>$1mA \leq I_O \leq 40mA$         |         |     | 1.5<br>0.1 | mA      |
| Output noise voltage      | $V_N$           | $T_A=25^{\circ}C, 10Hz \leq f \leq 100KHz$                  |         | 60  |            | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 13V \leq V_i \leq 24V, f=120Hz, T_j=25^{\circ}C$ | 37      | 57  |            | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_j=25^{\circ}C$   |         | 1.7 |            | V       |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=16V, I_O=40mA, C_{IN}=0.33\mu F, C_O=0.1\mu f, T_j = 0$  to  $125^\circ C$ , unless otherwise specified)

| Parameter                 | Symbol              | Test conditions  | BL78L10 |     |      | UNIT          |
|---------------------------|---------------------|--|---------|-----|------|---------------|
|                           |                     |  | MIN     | TYP | MAX  |               |
| Output voltage            | $V_O$               | $T_j=25^\circ C$                                       | 9.6     | 10  | 10.4 | V             |
| Load regulation(Note1)    | $\Delta Reg_{load}$ | $I_O = 1$ to $100mA$ ,<br>$T_j = 25^\circ C$           | -       | 17  | 90   | mV            |
|                           |                     | $I_O = 1$ to $40mA$ ,<br>$T_j = 25^\circ C$            | -       | 9   | 45   | mV            |
| Line regulation(Note1)    | $\Delta Reg_{line}$ | $V_I = 12.5$ to $25V$ ,<br>$T_j = 25^\circ C$          | -       | 100 | 210  | mV            |
|                           |                     | $V_I = 13$ to $25V$ ,<br>$T_j = 25^\circ C$            | -       | 90  | 160  | mV            |
| Input Bias Current        | $I_{IB}$            | $T_j = 25^\circ C$                                     | -       | 2.0 | 3.0  | mA            |
| Input Bias Current Change | $\Delta I_{IB}$     | $V_I = 13$ to $25V$ ,<br>$T_j = 25^\circ C$            | -       | -   | 1.0  | mA            |
| Output Noise Voltage      | $V_N$               | $10Hz \leq f \leq 100KHz$                              | -       | 70  | -    | $\mu V$       |
| Ripple Rejection          | RR                  | $V_I = 13$ to $23V$ ,<br>$I_O = 40mA$ ,<br>$f = 120Hz$ | 42      | 52  | -    | dB            |
| Dropout Voltage           | $V_D$               | $T_j=25^\circ C$                                       | -       | 1.7 | -    | V             |
| Dropout voltage           | $V_I-V_O$           | $I_O = 5mA, T_j = 0$<br>to $125^\circ C$               | -       | 0.9 | -    | $mV/^\circ C$ |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=19V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol          | Test conditions  | BL78L12              |            |                      | UNIT    |
|---------------------------|-----------------|--|----------------------|------------|----------------------|---------|
|                           |                 |  | MIN                  | TYP        | MAX                  |         |
| Output voltage            | $V_O$           | $T_J=25^\circ C$<br>$V_I=14.5V-27V, I_O=1mA-40mA$<br>$V_I=19V, I_O=1mA-70mA$         | 11.5<br>11.4<br>11.4 | 12         | 12.5<br>12.6<br>12.6 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^\circ C, I_O=1mA-100mA$<br>$T_J=25^\circ C, I_O=1mA-40mA$                    |                      | 20<br>10   | 100<br>50            | mV      |
| Line regulation           | $Reg_{line}$    | $14.5V \leq V_I \leq 27V, T_J=25^\circ C$<br>$16V \leq V_I \leq 27V, T_J=25^\circ C$ |                      | 120<br>100 | 250<br>200           | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^\circ C$<br>$T_J=125^\circ C$  |                      | 4.2        | 6.5<br>6.0           | mA      |
| Input Bias Current Change | $\Delta I_{IB}$ | $16V \leq V_I \leq 27V$<br>$1mA \leq I_O \leq 40mA$                                  |                      |            | 1.5<br>0.1           | mA      |
| Output Noise Voltage      | $V_N$           | $10Hz \leq f \leq 100KHz, T_A=25^\circ C$  |                      | 80         |                      | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 15V \leq V_I \leq 25V, f=120Hz,$<br>$T_J=25^\circ C$                      | 37                   | 42         |                      | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_J=25^\circ C$   |                      | 1.7        |                      | V       |

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=23V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol              | Test conditions  | BL78L15                |            |                        | UNIT    |
|---------------------------|---------------------|--|------------------------|------------|------------------------|---------|
|                           |                     |  | MIN                    | TYP        | MAX                    |         |
| Output voltage            | $V_O$               | $T_J=25^\circ C$<br>$V_I=17.5V-30V, I_O=1mA-40mA$<br>$V_I=23V, I_O=1mA-70mA$         | 14.4<br>14.25<br>14.25 | 15         | 15.6<br>15.75<br>15.75 | V       |
| Load regulation           | $\Delta Reg_{load}$ | $T_J=25^\circ C, I_O=1mA-100mA$<br>$T_J=25^\circ C, I_O=1mA-40mA$                    |                        | 25<br>12   | 150<br>75              | mV      |
| Line regulation           | $\Delta Reg_{line}$ | $17.5V \leq V_I \leq 30V, T_J=25^\circ C$<br>$20V \leq V_I \leq 30V, T_J=25^\circ C$ |                        | 130<br>110 | 300<br>250             | mV      |
| Input Bias Current        | $I_{IB}$            | $T_J=25^\circ C$<br>$T_J=125^\circ C$  |                        | 4.4        | 6.5<br>6.0             | mA      |
| Input Bias Current Change | $\Delta I_{IB}$     | $20V \leq V_I \leq 30V$<br>$1mA \leq I_O \leq 40mA$                                  |                        |            | 1.5<br>0.1             | mA      |
| Output noise voltage      | $V_N$               | $10Hz \leq f \leq 100KHz, T_A=25^\circ C$  |                        | 90         |                        | $\mu V$ |
| Ripple rejection          | RR                  | $I_O=40mA, 18.5V \leq V_I \leq 28.5V,$<br>$f=120Hz, T_J=25^\circ C$                  | 34                     | 39         |                        | dB      |
| Dropout voltage           | $V_I-V_O$           | $T_J=25^\circ C$   |                        | 1.7        |                        | V       |

## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=27V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol          | Test conditions  | BL78L18              |          |                      | UNIT    |
|---------------------------|-----------------|--|----------------------|----------|----------------------|---------|
|                           |                 |  | MIN                  | TYP      | MAX                  |         |
| Output voltage            | $V_O$           | $T_J=25^\circ C$<br>$V_I=20.7V-33V, I_O=1mA-40mA$<br>$V_I=27V, I_O=1mA-70mA$         | 17.3<br>17.1<br>17.1 | 18       | 18.7<br>18.9<br>18.9 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^\circ C, I_O=1mA-100mA$<br>$T_J=25^\circ C, I_O=1mA-40mA$                    |                      | 30<br>15 | 170<br>85            | mV      |
| Line regulation           | $Reg_{line}$    | $20.7V \leq V_I \leq 33V, T_J=25^\circ C$<br>$21V \leq V_I \leq 33V, T_J=25^\circ C$ |                      | 45<br>35 | 325<br>275           | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^\circ C$<br>$T_J=125^\circ C$  |                      | 3.1      | 6.5<br>6.0           | mA      |
| Input Bias Current Change | $\Delta I_{IB}$ | $21V \leq V_I \leq 33V$<br>$1mA \leq I_O \leq 40mA$                                  |                      |          | 1.5<br>0.1           | mA      |
| Output Noise Voltage      | $V_N$           | $10Hz \leq f \leq 100KHz, T_A=25^\circ C$  |                      | 150      |                      | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 23V \leq V_I \leq 33V, f=120Hz,$<br>$T_J=25^\circ C$                      | 33                   | 48       |                      | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_J=25^\circ C$   |                      | 1.7      |                      | V       |

### ELECTRICAL CHARACTERISTICS

( $V_{IN}=33V, I_O=40mA, 0^\circ C < T_J < 125^\circ C, C_I=0.33\mu F, C_O=0.1\mu F$ , unless otherwise specified)

| Parameter                 | Symbol              | Test conditions  | BL78L24            |          |                    | UNIT    |
|---------------------------|---------------------|--|--------------------|----------|--------------------|---------|
|                           |                     |  | MIN                | TYP      | MAX                |         |
| Output voltage            | $V_O$               | $T_J=25^\circ C$<br>$V_I=27V-38V, I_O=1mA-40mA$<br>$V_I=27V-33V, I_O=1mA-70mA$     | 23<br>22.8<br>22.8 | 24       | 25<br>25.2<br>25.2 | V       |
| Load regulation           | $\Delta Reg_{load}$ | $T_J=25^\circ C, I_O=1mA-100mA$<br>$T_J=25^\circ C, I_O=1mA-40mA$                  |                    | 40<br>20 | 200<br>100         | mV      |
| Line regulation           | $\Delta Reg_{line}$ | $28V \leq V_I \leq 80V, T_J=25^\circ C$<br>$27V \leq V_I \leq 38V, T_J=25^\circ C$ |                    | 50<br>60 | 300<br>350         | mV      |
| Input Bias Current        | $I_{IB}$            | $T_J=25^\circ C$<br>$T_J=125^\circ C$  |                    | 3.1      | 6.5<br>6.0         | mA      |
| Input Bias Current Change | $\Delta I_{IB}$     | $28V \leq V_I \leq 38V$<br>$1mA \leq I_O \leq 40mA$                                |                    |          | 1.5<br>0.1         | mA      |
| Output noise voltage      | $V_N$               | $10Hz \leq f \leq 100KHz, T_A=25^\circ C$  |                    | 200      |                    | $\mu V$ |
| Ripple rejection          | RR                  | $I_O=40mA, 29V \leq V_I \leq 35V,$<br>$f=120Hz, T_J=25^\circ C$                    | 31                 | 45       |                    | dB      |
| Dropout voltage           | $V_I-V_O$           | $T_J=25^\circ C$   |                    | 1.7      |                    | V       |

## Three-Terminal Low Current Positive Voltage Regulators

### BL78LXX

TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified

Figure 1. Dropout Characteristics

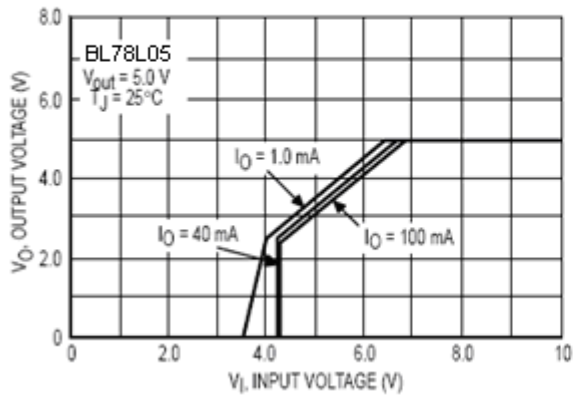


Figure 2. Dropout Voltage versus Junction Temperature

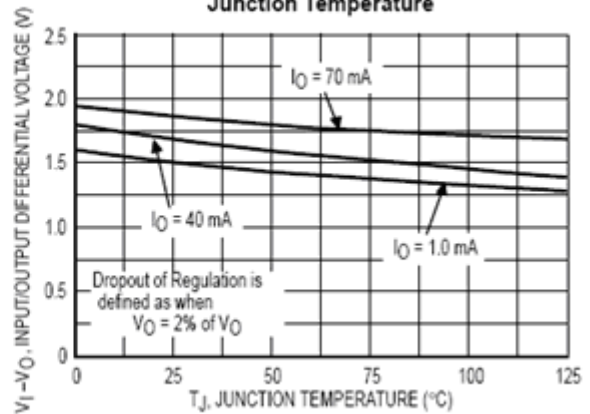


Figure 3. Input Bias Current versus Ambient Temperature

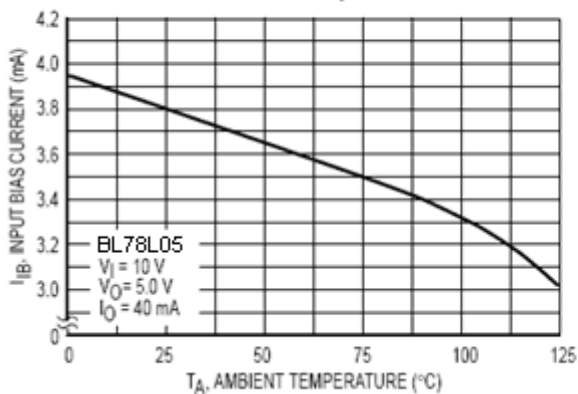
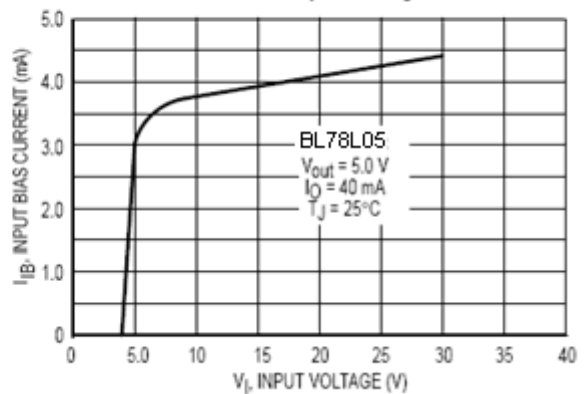


Figure 4. Input Bias Current versus Input Voltage



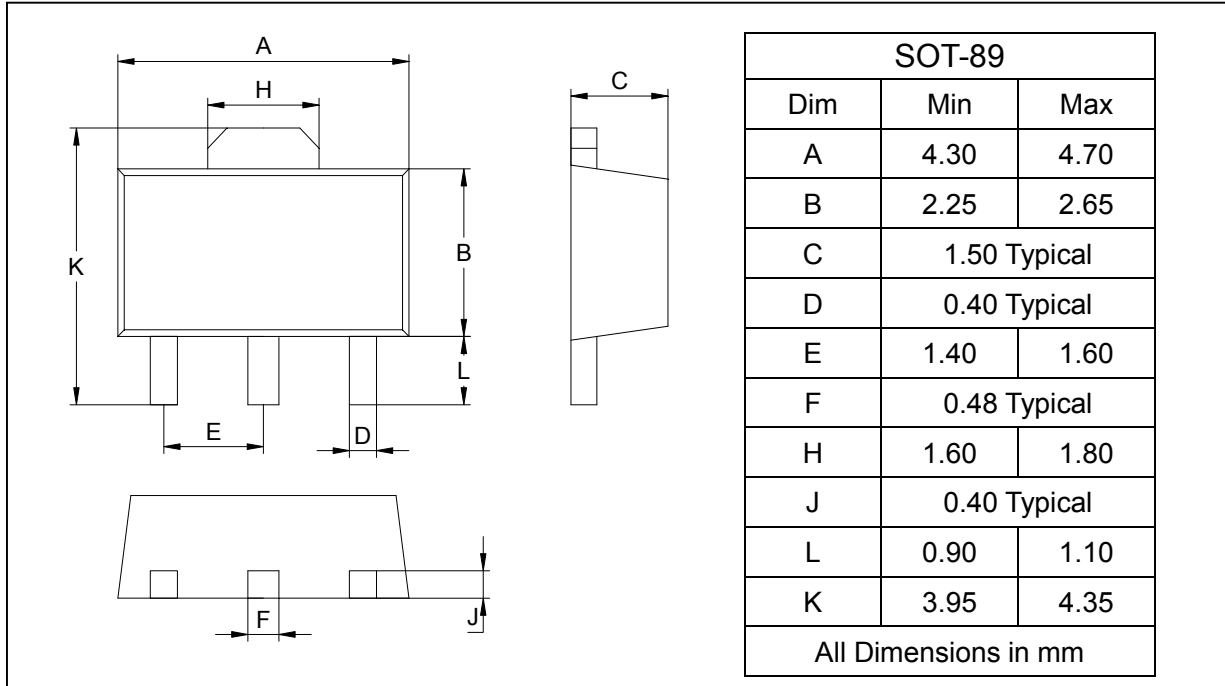


## Three-Terminal Low Current Positive Voltage Regulators BL78LXX

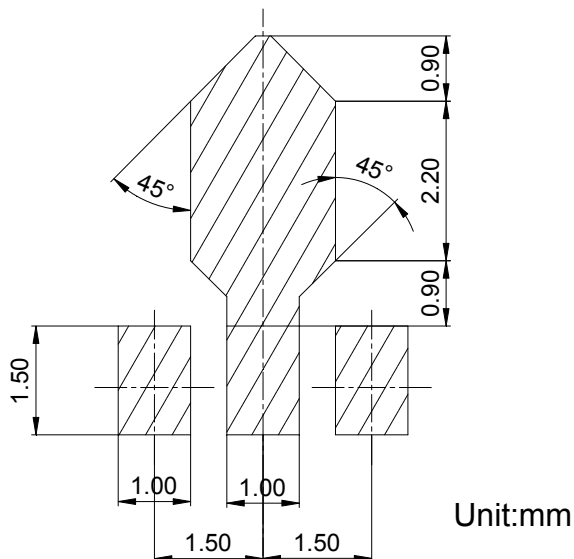
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

| Device  | Package | Shipping       |
|---------|---------|----------------|
| BL78LXX | SOT-89  | 1000/Tape&Reel |

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