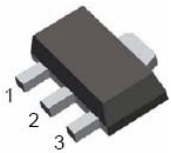


### FEATURES

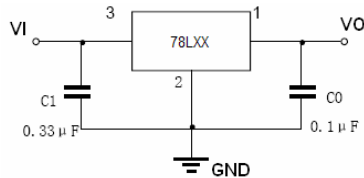
- Wide range of available, fixed output voltage.
- Low cost.
- Internal short-circuit current limiting.
- Internal thermal overload protection.
- No external components required.
- Complementary negative regulators offered (79LXX series).

### APPLICATIONS

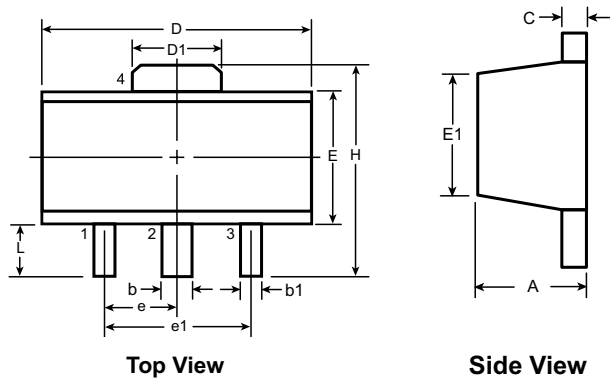
- Three-terminal positive voltage regulator.



SOT-89



### SOT-89 PACKAGE OUTLINE



| Symbol          | A   | b    | b1   | C    | D   | D1   | E    | E1   | e                 | e1       | H    | L    |
|-----------------|-----|------|------|------|-----|------|------|------|-------------------|----------|------|------|
| Dimensions (mm) | MIN | 1.40 | 0.44 | 0.36 | 0.3 | 4.40 | 1.50 | 2.29 | 2.00 <sup>†</sup> | 1.50 BSC | 3.94 | 0.89 |
|                 | NOM | -    | -    | -    | -   | -    | -    | -    | -                 | 3.00 BSC | -    | -    |
|                 | MAX | 1.60 | 0.56 | 0.48 | 0.5 | 4.60 | 1.75 | 2.60 | 2.29              | -        | 4.25 | 1.20 |

Dimensions in mm

### 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         | 150         | mA    |
| $P_D$          | Power dissipation              | 500         | mW    |
| $T_{OPR}$      | Operating junction temperature | 0 to +125   | °C    |
| $T_j, T_{stg}$ | Storage temperature range      | -40 to +150 | °C    |

# 78LXX

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                         | 78L33                   |     |                         | UNIT    |
|---------------------------|-----------------|-----------------------------------------------------------------------------------------|-------------------------|-----|-------------------------|---------|
|                           |                 |                                                                                         | MIN                     | TYP | MAX                     |         |
| Output voltage            | $V_O$           | $T_J=25^{\circ}C$<br>$5.3V \leq V_I \leq 20V, I_O=1mA-40mA$<br>$V_I=8.3V, I_O=1mA-70mA$ | 3.168<br>3.135<br>3.135 | 3.3 | 3.432<br>3.465<br>3.465 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^{\circ}C, I_O=1mA-100mA$<br>$T_J=25^{\circ}C, I_O=1mA-40mA$                     |                         |     | 60<br>30                | mV      |
| Line regulation           | $Reg_{line}$    | $5.3V \leq V_I \leq 20V, T_J=25^{\circ}C$<br>$6.3V \leq V_I \leq 20V, T_J=25^{\circ}C$  |                         |     | 150<br>100              | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^{\circ}C$<br>$T_J=125^{\circ}C$                                                 |                         |     | 6.0<br>5.5              | mA      |
| Input Bias Current Change | $\Delta I_{IB}$ | $6.3V \leq V_I \leq 20V$<br>$1mA \leq I_O \leq 40mA$                                    |                         |     | 1.5<br>0.1              | mA      |
| Output noise voltage      | $V_N$           | $10Hz \leq f \leq 100KHz$                                                               |                         | 40  |                         | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 6.3V \leq V_I \leq 16.3V$<br>$f=120Hz, T_J=25^{\circ}C$                      | 41                      | 49  |                         | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_J=25^{\circ}C$                                                                       |                         | 1.7 |                         | V       |

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                      | 78L05               |          |                     | UNIT    |
|---------------------------|-----------------|--------------------------------------------------------------------------------------|---------------------|----------|---------------------|---------|
|                           |                 |                                                                                      | MIN                 | TYP      | MAX                 |         |
| Output voltage            | $V_O$           | $T_J=25^{\circ}C$<br>$7V \leq V_I \leq 20V, I_O=1mA-40mA$<br>$V_I=10V, I_O=1mA-70mA$ | 4.8<br>4.75<br>4.75 | 5.0      | 5.2<br>5.25<br>5.25 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^{\circ}C, I_O=1mA-100mA$<br>$T_J=25^{\circ}C, I_O=1mA-40mA$                  |                     | 11<br>5  | 60<br>30            | mV      |
| Line regulation           | $Reg_{line}$    | $7V \leq V_I \leq 20V, T_J=25^{\circ}C$<br>$8V \leq V_I \leq 20V, T_J=25^{\circ}C$   |                     | 55<br>45 | 150<br>100          | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^{\circ}C$<br>$T_J=125^{\circ}C$                                              |                     | 3.8      | 6.0<br>5.5          | mA      |
| Input Bias Current Change | $\Delta I_{IB}$ | $8V \leq V_I \leq 20V$<br>$1mA \leq I_O \leq 40mA$                                   |                     |          | 1.5<br>0.1          | mA      |
| Output noise voltage      | $V_N$           | $10Hz \leq f \leq 100KHz$                                                            |                     | 40       |                     | $\mu V$ |
| Ripple rejection          | RR              | $I_O=40mA, 8V \leq V_I \leq 18V, f=120Hz$<br>$T_J=25^{\circ}C$                       | 41                  | 49       |                     | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_J=25^{\circ}C$                                                                    |                     | 1.7      |                     | V       |

# 78LXX

## 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                                                                      | 78L06              |             |                    | UNIT        |
|---------------------------|-----------------|--------------------------------------------------------------------------------------|--------------------|-------------|--------------------|-------------|
|                           |                 |                                                                                      | MIN                | TYP         | MAX                |             |
| Output voltage            | $V_O$           | $T_J=25^{\circ}C$<br>$V_I=8.5V-20V, I_O=1mA-40mA$<br>$V_I=8.5V, I_O=1mA-70mA$        | 5.75<br>5.7<br>5.7 | 6.0         | 6.25<br>6.3<br>6.3 | V           |
| Load regulation           | $Reg_{load}$    | $T_J=25^{\circ}C, I_O=1mA-100mA$<br>$T_J=25^{\circ}C, I_O=1mA-70mA$                  |                    | 12.8<br>5.8 | 80<br>40           | mV          |
| Line regulation           | $Reg_{line}$    | $8.5V \leq V_I \leq 20V, T_J=25^{\circ}C$<br>$9V \leq V_I \leq 20V, T_J=25^{\circ}C$ |                    | 64<br>54    | 175<br>125         | mV          |
| Input Bias Current        | $I_{IB}$        | $T_J=25^{\circ}C, V_{IN}=12V, I_O=40mA$<br>$T_J=125^{\circ}C, V_{IN}=12V, I_O=40mA$  |                    | 3.9         | 5.5<br>6.0         | mA          |
| Input Bias Current Change | $\Delta I_{IB}$ | $9V \leq V_I \leq 20V$<br>$1mA \leq I_O \leq 40mA$                                   |                    |             | 1.5<br>0.1         | mA          |
| Output noise voltage      | $V_N$           | $10Hz \leq f \leq 100KHz$                                                            |                    | 40          |                    | $\mu V/V_O$ |
| Ripple rejection          | RR              | $I_O=40mA, 10V \leq V_I \leq 20V, f=120Hz,$<br>$T_J=25^{\circ}C$                     | 40                 | 46          |                    | dB          |
| Dropout voltage           | $V_D$           | $T_J=25^{\circ}C$                                                                    |                    | 1.7         |                    | V           |

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                         | 78L08             |           |                   | UNIT    |
|---------------------------|-----------------|-----------------------------------------------------------------------------------------|-------------------|-----------|-------------------|---------|
|                           |                 |                                                                                         | MIN               | TYP       | MAX               |         |
| Output voltage            | $V_O$           | $T_J=25^{\circ}C$<br>$10.5V \leq V_I \leq 23V, I_O=1mA-40mA$<br>$V_I=14V, I_O=1mA-70mA$ | 7.7<br>7.6<br>7.6 | 8.0       | 8.3<br>8.4<br>8.4 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^{\circ}C, I_O=1mA-100mA$<br>$T_J=25^{\circ}C, I_O=1mA-40mA$                     |                   | 15<br>8.0 | 80<br>40          | mV      |
| Line regulation           | $Reg_{line}$    | $10.5V \leq V_I \leq 23V, T_J=25^{\circ}C$<br>$11V \leq V_I \leq 23V, T_J=25^{\circ}C$  |                   | 20<br>12  | 175<br>125        | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^{\circ}C$<br>$T_J=125^{\circ}C$                                                 |                   | 3         | 6.0<br>5.5        | mA      |
| 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              | $I_O=40mA, 12V \leq V_I \leq 23V, f=120Hz,$<br>$T_J=25^{\circ}C$                        | 37                | 57        |                   | dB      |
| Dropout voltage           | $V_I-V_O$       | $T_J=25^{\circ}C$                                                                       |                   | 1.7       |                   | V       |

# 78LXX

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                        | 78L09             |           |                   | UNIT    |
|---------------------------|-----------------|----------------------------------------------------------------------------------------|-------------------|-----------|-------------------|---------|
|                           |                 |                                                                                        | MIN               | TYP       | MAX               |         |
| Output voltage            | $V_O$           | $T_J=25^{\circ}C$<br>$V_I=11.5V-24V, I_O=1mA-40mA$<br>$V_I=15V, I_O=1mA-70mA$          | 8.6<br>8.5<br>8.5 | 9.0       | 9.4<br>9.5<br>9.5 | V       |
| Load regulation           | $Reg_{load}$    | $T_J=25^{\circ}C, I_O=1mA-100mA$<br>$T_J=25^{\circ}C, I_O=1mA-40mA$                    |                   | 15<br>8.0 | 90<br>40          | mV      |
| Line regulation           | $Reg_{line}$    | $11.5V \leq V_I \leq 24V, T_J=25^{\circ}C$<br>$12V \leq V_I \leq 24V, T_J=25^{\circ}C$ |                   | 20<br>12  | 175<br>125        | mV      |
| Input Bias Current        | $I_{IB}$        | $T_J=25^{\circ}C$<br>$T_J=125^{\circ}C$                                                |                   | 3.0       | 6.0<br>5.5        | mA      |
| 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       |

## ELECTRICAL CHARACTERISTICS

( $V_{IN}=16V, I_O=40-350mA, C_{IN}=0.33\mu F, C_O=0.1\mu F, T_J = 0$  to  $125^{\circ}C$ , unless otherwise specified)

| Parameter                 | Symbol              | Test conditions                          | 78L10 |     |      | 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 $100mA, T_J = 25^{\circ}C$  | -     | 17  | 90   | mV              |
|                           |                     | $I_O = 1$ to $40mA, T_J = 25^{\circ}C$   | -     | 9   | 45   | mV              |
| Line regulation(Note1)    | $\Delta Reg_{line}$ | $V_I = 12.5$ to $25V, T_J = 25^{\circ}C$ | -     | 100 | 210  | mV              |
|                           |                     | $V_I = 13$ to $25V, T_J = 25^{\circ}C$   | -     | 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 $25V, T_J = 25^{\circ}C$   | -     | -   | 1.0  | mA              |
| Output Noise Voltage      | $V_N$               | $10Hz \leq f \leq 100KHz$                | -     | 70  | -    | $\mu V$         |
| Ripple Rejection          | RR                  | $V_I= 13$ to $23V, I_O= 40mA, f = 120Hz$ | 42    | 52  | -    | dB              |
| Dropout Voltage           | $V_D$               | $T_J=25^{\circ}C$                        | -     | 1.7 | -    | V               |
| Dropout voltage           | $V_I-V_O$           | $I_O = 5mA, T_J = 0$ to $125^{\circ}C$   | -     | 0.9 | -    | mV/ $^{\circ}C$ |

# 78LXX

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                      | 78L12                |            |                      | 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

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

| Parameter                 | Symbol              | Test conditions                                                                      | 78L15                  |            |                        | 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       |

# 78LXX

## ELECTRICAL CHARACTERISTICS

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

| Parameter                 | Symbol          | Test conditions                                                                            | 78L18                |          |                      | 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

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

| Parameter                 | Symbol              | Test conditions                                                                          | 78L24              |          |                    | 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       |

## RATING AND CHARACTERISTIC CURVES (78LXX)

Figure 1. Dropout Characteristics

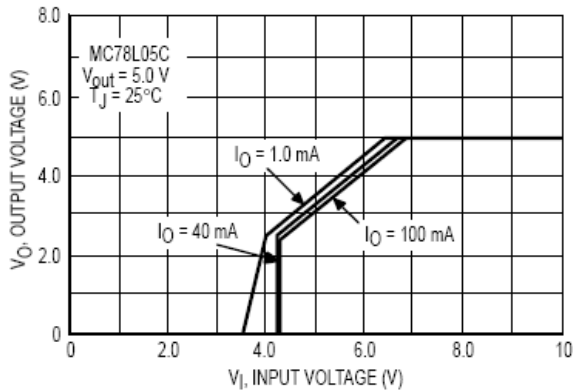


Figure 2. Dropout Voltage versus Junction Temperature

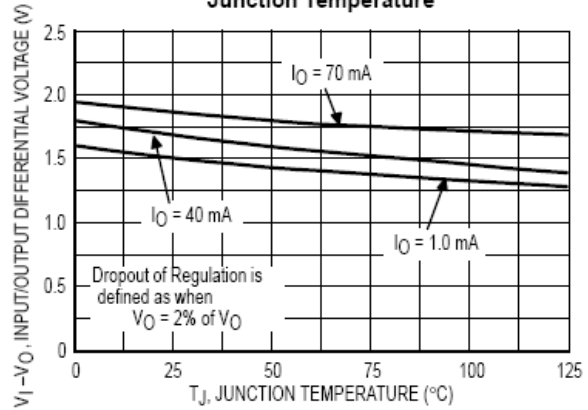


Figure 3. Input Bias Current versus Ambient Temperature

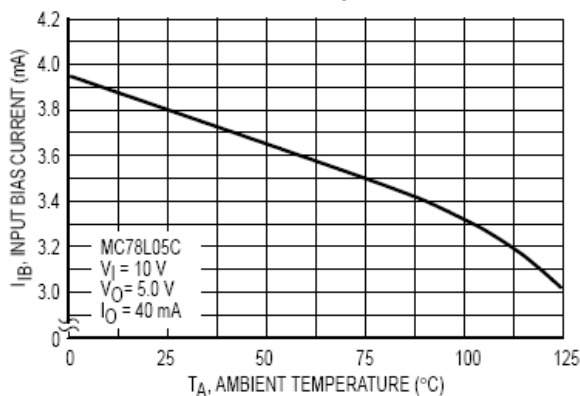


Figure 4. Input Bias Current versus Input Voltage

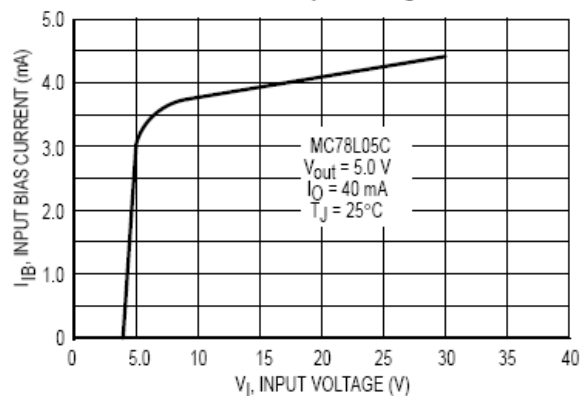


Figure 5. Maximum Average Power Dissipation versus Ambient Temperature – TO-92 Type Package

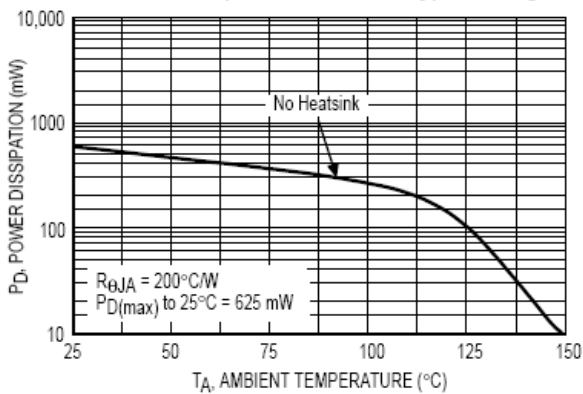


Figure 6. SOP-8 Thermal Resistance and Maximum Power Dissipation versus P.C.B. Copper Length

