

# MC79L00A Series

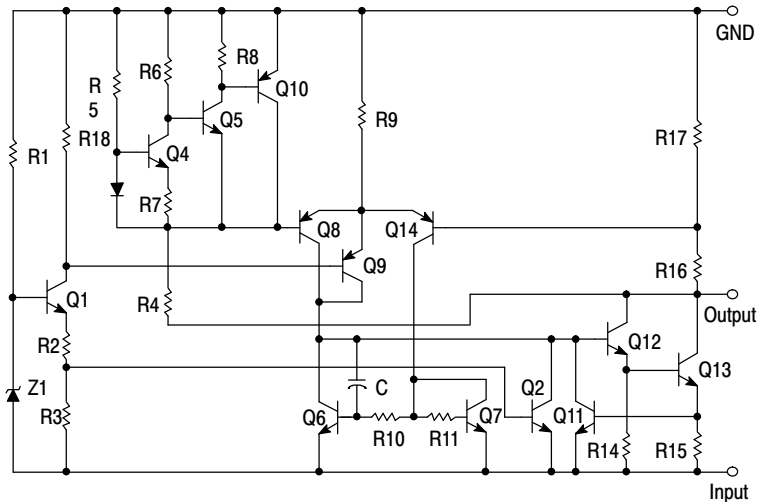
## 100 mA Negative Voltage Regulators

The MC79L00A Series negative voltage regulators are inexpensive, easy-to-use devices suitable for numerous applications requiring up to 100 mA. Like the higher powered MC7900 Series negative regulators, this series features thermal shutdown and current limiting, making them remarkably rugged. In most applications, no external components are required for operation.

The MC79L00A devices are useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed. These regulators offer substantial advantage over the common resistor/Zener diode approach.

### Features

- No External Components Required
- Internal Short Circuit Current Limiting
- Internal Thermal Overload Protection
- Low Cost
- Complementary Positive Regulators Offered (MC78L00 Series)
- Pb-Free Packages are Available



\* Automotive temperature range selections are available with special test conditions and additional tests in 5, 12 and 15 V devices. Contact your local ON Semiconductor sales office for information.

Figure 1. Representative Schematic Diagram



ON Semiconductor®

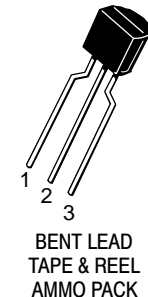
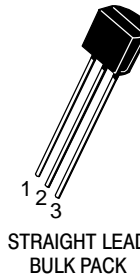
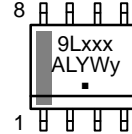
[www.onsemi.com](http://www.onsemi.com)

### THREE-TERMINAL LOW CURRENT NEGATIVE FIXED VOLTAGE REGULATORS

#### MARKING DIAGRAMS

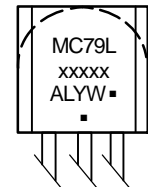


- Pin 1.  $V_{out}$
- 2.  $V_{in}$
- 3.  $V_{in}$
- 4. NC
- 5. GND
- 6.  $V_{in}$
- 7.  $V_{in}$
- 8. NC



TO-92  
P SUFFIX  
CASE 29

- Pin 1. Ground
- 2. Input
- 3. Output



- xxx = Specific Device Code
- A = Assembly Location
- L = Wafer Lot
- Y = Year
- W = Work Week
- y = B or C
- = Pb-Free Package

(Note: Microdot may be in either location)

#### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 7 of this data sheet.

## MC79L00A Series

### MAXIMUM RATINGS ( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)

| Rating   | Symbol                                   | Value                           | Unit  |
|--|--|---------------------------------|---|
| Input Voltage<br>(-5 V)<br>(-12, -15, -18 V)<br>(-24 V)  | $V_I$                                    | -30<br>-35<br>-40               | Vdc   |
| Power Dissipation<br>Case 29 (TO-92 Type)<br>$T_A = 25^\circ\text{C}$<br>Thermal Resistance, Junction-to-Ambient<br>Thermal Resistance, Junction-to-Case | PD<br>$R_{\theta JA}$<br>$R_{\theta JC}$ | Internally Limited<br>160<br>83 | W<br>$^\circ\text{C/W}$<br>$^\circ\text{C/W}$ |
| Case 751 (SOIC-8 Type) (Note 1)<br>$T_A = 25^\circ\text{C}$<br>Thermal Resistance, Junction-to-Ambient<br>Thermal Resistance, Junction-to-Case           | PD<br>$R_{\theta JA}$<br>$R_{\theta JC}$ | Internally Limited<br>180<br>45 | W<br>$^\circ\text{C/W}$<br>$^\circ\text{C/W}$ |
| Storage Temperature Range  | $T_{stg}$                                | -65 to +150                     | $^\circ\text{C}$                              |
| Junction Temperature   | $T_J$                                    | +150                            | $^\circ\text{C}$                              |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. SOIC-8 Junction-to-Ambient Thermal Resistance is for minimum recommended pad size. Refer to Figure 9 for Thermal Resistance variation versus pad size.

\*This device series contains ESD protection and exceeds the following tests:

Human Body Model 2000 V per MIL\_STD\_883, Method 3015

Machine Model Method 200 V.

### ELECTRICAL CHARACTERISTICS ( $V_I = -10\text{ V}$ , $I_O = 40\text{ mA}$ , $C_I = 0.33\ \mu\text{F}$ , $C_O = 0.1\ \mu\text{F}$ , $-40^\circ\text{C} < T_J < +125^\circ\text{C}$ (for MC79LXXAB), $0^\circ\text{C} < T_J < +125^\circ\text{C}$ (for MC79LXXAC)).

| Characteristics   | Symbol              | MC79L05AC, AB  |      |                | Unit          |
|---|---------------------|----------------|------|----------------|---------------|
|   |                     | Min            | Typ  | Max            |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$               | -4.8           | -5.0 | -5.2           | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-7.0 Vdc $\geq V_I \geq -20\text{ Vdc}$<br>-8.0 Vdc $\geq V_I \geq -20\text{ Vdc}$  | $\text{Reg}_{line}$ | -              | -    | 150<br>100     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                                      | $\text{Reg}_{load}$ | -              | -    | 60<br>30       | mV            |
| Output Voltage<br>-7.0 Vdc $\geq V_I \geq -20\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -10\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -4.75<br>-4.75 | -    | -5.25<br>-5.25 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{IB}$            | -              | -    | 6.0<br>5.5     | mA            |
| Input Bias Current Change<br>-8.0 Vdc $\geq V_I \geq -20\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $I_{IB}$            | -              | -    | 1.5<br>0.1     | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$               | -              | 40   | -              | $\mu\text{V}$ |
| Ripple Rejection ( $-8.0 \geq V_I \geq -18\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )  | RR                  | 41             | 49   | -              | dB            |
| Dropout Voltage ( $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$ )  | $ V_I - V_O $       | -              | 1.7  | -              | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## MC79L00A Series

**ELECTRICAL CHARACTERISTICS** ( $V_I = -19\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC)).

| Characteristics  | Symbol                     | MC79L12AC, AB  |     |                | Unit          |
|--|----------------------------|----------------|-----|----------------|---------------|
|  |                            | Min            | Typ | Max            |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )   | $V_O$                      | -11.5          | -12 | -12.5          | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-14.5 Vdc $\geq V_I \geq -27\text{ Vdc}$<br>-16 Vdc $\geq V_I \geq -27\text{ Vdc}$   | $\text{Reg}_{\text{line}}$ | -              | -   | 250<br>200     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                                       | $\text{Reg}_{\text{load}}$ | -              | -   | 100<br>50      | mV            |
| Output Voltage<br>-14.5 Vdc $\geq V_I \geq -27\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -19\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$                      | -11.4<br>-11.4 | -   | -12.6<br>-12.6 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )  | $I_{\text{IB}}$            | -              | -   | 6.5<br>6.0     | mA            |
| Input Bias Current Change<br>-16 Vdc $\geq V_I \geq -27\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | $I_{\text{IB}}$            | -              | -   | 1.5<br>0.2     | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )   | $V_n$                      | -              | 80  | -              | $\mu\text{V}$ |
| Ripple Rejection ( $-15 \leq V_I \leq -25\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )  | RR                         | 37             | 42  | -              | dB            |
| Dropout Voltage ( $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$ )   | $ V_I - V_O $              | -              | 1.7 | -              | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

**ELECTRICAL CHARACTERISTICS** ( $V_I = -23\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J + 125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC)).

| Characteristics   | Symbol                     | MC79L15AC, AB    |     |                  | Unit          |
|---|----------------------------|------------------|-----|------------------|---------------|
|   |                            | Min              | Typ | Max              |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$                      | -14.4            | -15 | -15.6            | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-17.5 Vdc $\geq V_I \geq -30\text{ Vdc}$<br>-20 Vdc $\geq V_I \geq -30\text{ Vdc}$  | $\text{Reg}_{\text{line}}$ | -                | -   | 300<br>250       | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$                                    | $\text{Reg}_{\text{load}}$ | -                | -   | 150<br>75        | mV            |
| Output Voltage<br>-17.5 Vdc $\geq V_I \geq -\text{Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -23\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$                      | -14.25<br>-14.25 | -   | -15.75<br>-15.75 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{\text{IB}}$            | -                | -   | 6.5<br>6.0       | mA            |
| Input Bias Current Change<br>-20 Vdc $\geq V_I \geq -30\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$   | $\Delta I_{\text{IB}}$     | -                | -   | 1.5<br>0.1       | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$                      | -                | 90  | -                | $\mu\text{V}$ |
| Ripple Rejection ( $-18.5 \leq V_I \leq -28.5\text{ Vdc}$ , $f = 120\text{ Hz}$ )   | RR                         | 34               | 39  | -                | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$  | $ V_I - V_O $              | -                | 1.7 | -                | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## MC79L00A Series

**ELECTRICAL CHARACTERISTICS** ( $V_I = -27\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J +125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC), unless otherwise noted).

| Characteristics   | Symbol              | MC79L18AC           |             |                      | Unit          |
|---|---------------------|---------------------|-------------|----------------------|---------------|
|   |                     | Min                 | Typ         | Max                  |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$               | -17.3               | -18         | -18.7                | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-20.7 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-21.4 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-22 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-21 Vdc $\geq V_I \geq -33\text{ Vdc}$  | Reg <sub>line</sub> | -                   | -           | 325<br>-<br>-<br>275 | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | Reg <sub>load</sub> | -                   | -           | 170<br>85            | mV            |
| Output Voltage<br>-20.7 Vdc $\geq V_I \geq -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>-21.4 Vdc $\geq V_I \geq -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -27\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -17.1<br>-<br>-17.1 | -<br>-<br>- | -18.9<br>-<br>-18.9  | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{IB}$            | -<br>-              | -<br>-      | 6.5<br>6.0           | mA            |
| Input Bias Current Change<br>-21 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>-27 Vdc $\geq V_I \geq -33\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$   | $I_{IB}$            | -<br>-<br>-         | -<br>-<br>- | 1.5<br>-<br>0.1      | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$               | -                   | 150         | -                    | $\mu\text{V}$ |
| Ripple Rejection ( $-23 \leq V_I \leq -33\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )   | RR                  | 33                  | 48          | -                    | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$  | $ V_I - V_O $       | -                   | 1.7         | -                    | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

**ELECTRICAL CHARACTERISTICS** ( $V_I = -33\text{ V}$ ,  $I_O = 40\text{ mA}$ ,  $C_I = 0.33\text{ }\mu\text{F}$ ,  $C_O = 0.1\text{ }\mu\text{F}$ ,  $-40^\circ\text{C} < T_J +125^\circ\text{C}$  (for MC79LXXAB),  $0^\circ\text{C} < T_J < +125^\circ\text{C}$  (for MC79LXXAC), unless otherwise noted).

| Characteristics   | Symbol              | MC79L24AC           |             |                     | Unit          |
|---|---------------------|---------------------|-------------|---------------------|---------------|
|   |                     | Min                 | Typ         | Max                 |               |
| Output Voltage ( $T_J = +25^\circ\text{C}$ )  | $V_O$               | -23                 | -24         | -25                 | Vdc           |
| Input Regulation ( $T_J = +25^\circ\text{C}$ )<br>-27 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>-27.5 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$  | Reg <sub>line</sub> | -                   | -           | 350<br>-<br>300     | mV            |
| Load Regulation<br>$T_J = +25^\circ\text{C}$ , $1.0\text{ mA} \leq I_O \leq 100\text{ mA}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$  | Reg <sub>load</sub> | -                   | -           | 200<br>100          | mV            |
| Output Voltage<br>-27 Vdc $\geq V_I \geq -38\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 40\text{ mA}$<br>$V_I = -33\text{ Vdc}$ , $1.0\text{ mA} \leq I_O \leq 70\text{ mA}$ | $V_O$               | -22.8<br>-<br>-22.8 | -<br>-<br>- | -25.2<br>-<br>-25.2 | Vdc           |
| Input Bias Current<br>( $T_J = +25^\circ\text{C}$ )<br>( $T_J = +125^\circ\text{C}$ )   | $I_{IB}$            | -<br>-              | -<br>-      | 6.5<br>6.0          | mA            |
| Input Bias Current Change<br>-28 Vdc $\geq V_I \geq -38\text{ Vdc}$<br>$1.0\text{ mA} \leq I_O \leq 40\text{ mA}$   | $\Delta I_{IB}$     | -<br>-              | -<br>-      | 1.5<br>0.1          | mA            |
| Output Noise Voltage ( $T_A = +25^\circ\text{C}$ , $10\text{ Hz} \leq f \leq 100\text{ kHz}$ )  | $V_n$               | -                   | 200         | -                   | $\mu\text{V}$ |
| Ripple Rejection ( $-29 \leq V_I \leq -35\text{ Vdc}$ , $f = 120\text{ Hz}$ , $T_J = +25^\circ\text{C}$ )   | RR                  | 31                  | 47          | -                   | dB            |
| Dropout Voltage $I_O = 40\text{ mA}$ , $T_J = +25^\circ\text{C}$  | $ V_I - V_O $       | -                   | 1.7         | -                   | Vdc           |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

# MC79L00A Series

## APPLICATIONS INFORMATION

### Design Considerations

The MC79L00A Series of fixed voltage regulators are designed with Thermal Overload Protections that shuts down the circuit when subjected to an excessive power overload condition, Internal Short Circuit Protection that limits the maximum current the circuit will pass.

In many low current applications, compensation capacitors are not required. However, it is recommended that the regulator input be bypassed with a capacitor if the regulator is connected to the power supply filter with long wire length, or if the output load capacitance is large. An input bypass capacitor should be selected to provide good

high-frequency characteristics to insure stable operation under all load conditions. A 0.33  $\mu\text{F}$  or larger tantalum, mylar, or other capacitor having low internal impedance at high frequencies should be chosen. The bypass capacitor should be mounted with the shortest possible leads directly across the regulator's input terminals. Normally good construction techniques should be used to minimize ground loops and lead resistance drops since the regulator has no external sense lead. Bypassing the output is also recommended.

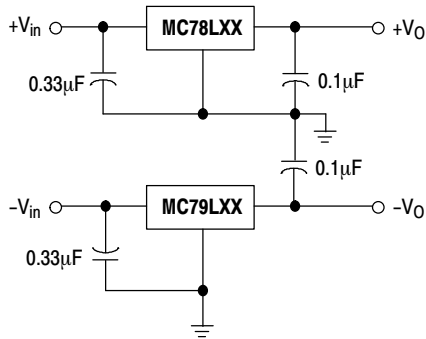
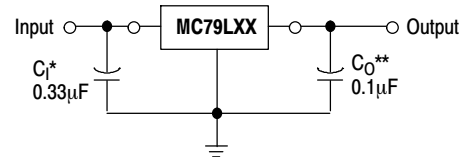


Figure 2. Positive and Negative Regulator



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0 V above the output voltage even during the low point on the ripple voltage.

\*  $C_I$  is required if regulator is located an appreciable distance from the power supply filter

\*\*  $C_O$  improves stability and transient response.

Figure 3. Standard Application

# MC79L00A Series

## TYPICAL CHARACTERISTICS

( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)

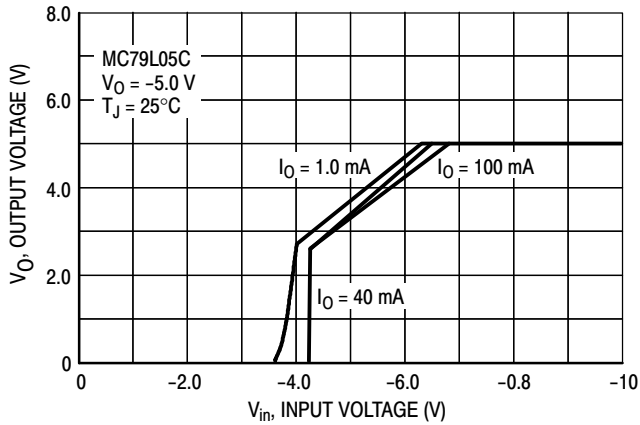


Figure 4. Dropout Characteristics

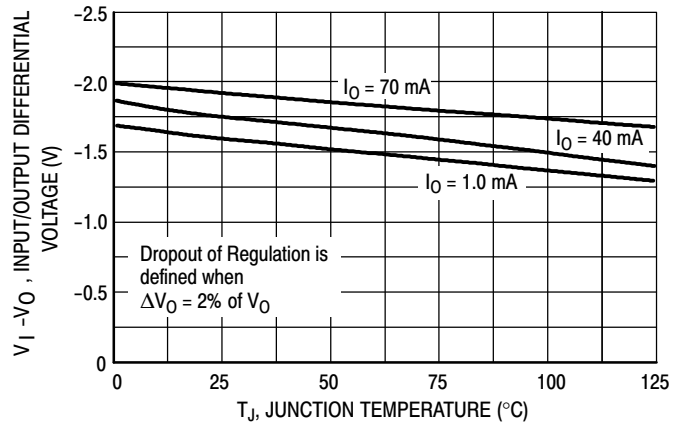


Figure 5. Dropout Voltage versus Junction Temperature

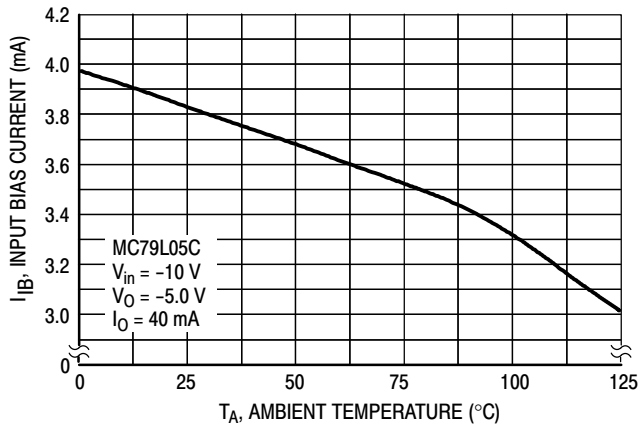


Figure 6. Input Bias Current versus Ambient Temperature

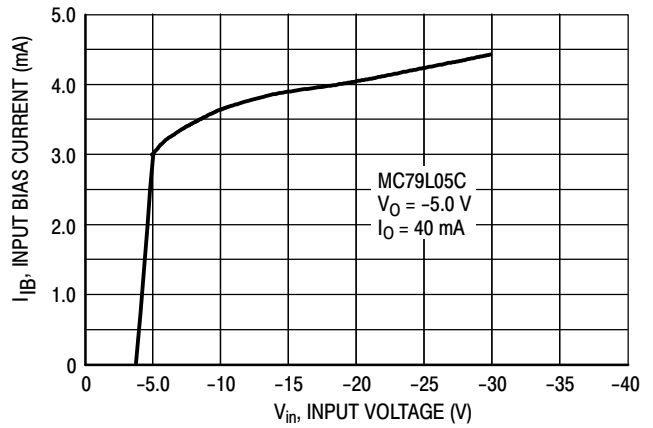


Figure 7. Input Bias Current versus Input Voltage

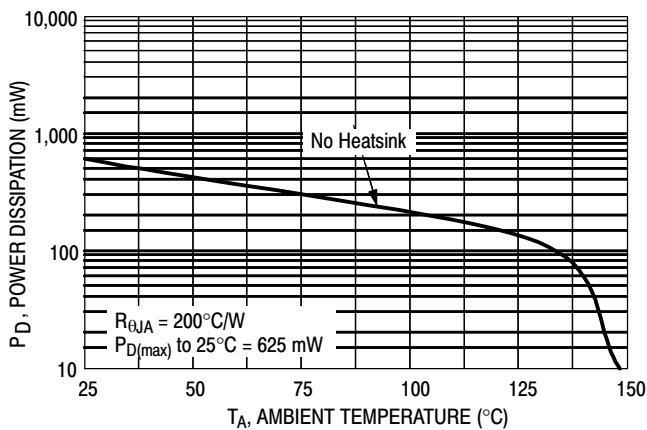


Figure 8. Maximum Average Power Dissipation versus Ambient Temperature (TO-92)

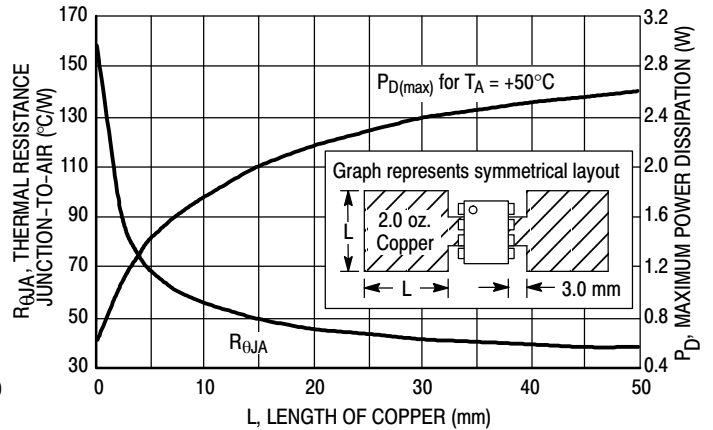


Figure 9. SOP-8 Thermal Resistance and Maximum Power Dissipation versus P.C.B. Copper Length

## MC79L00A Series

### ORDERING INFORMATION

| Device        | Nominal Voltage | Operating Temperature Range | Package          | Shipping†              |
|---------------|-----------------|-----------------------------|------------------|------------------------|
| MC79L05ABDG   | -5.0 V          | TJ = -40° to +125°C         | SOIC-8 (Pb-Free) | 98 Units / Rail        |
| MC79L05ABDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |
| MC79L05ABPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |
| MC79L05ABPRAG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |
| MC79L05ACDG   |                 | TJ = 0° to +125°C           | SOIC-8 (Pb-Free) | 98 Units / Rail        |
| MC79L05ACDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |
| MC79L05ACPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |
| MC79L05ACPRAG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |
| MC79L05ACPRMG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |
| MC79L05ACPRPG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |
| MC79L12ABDG   | -12 V           | TJ = -40° to +125°C         | SOIC-8 (Pb-Free) | 98 Units / Rail        |
| MC79L12ABDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |
| MC79L12ABPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |
| MC79L12ABPRAG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |
| MC79L12ACDG   | -12 V           | TJ = 0° to +125°C           | SOIC-8 (Pb-Free) | 98 Units / Rail        |
| MC79L12ACDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |
| MC79L12ACPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |
| MC79L12ACPRAG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |
| MC79L12ACPRPG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |

## MC79L00A Series

### ORDERING INFORMATION (continued)

| Device        | Nominal Voltage | Operating Temperature Range | Package          | Shipping†              |                 |                        |
|---------------|-----------------|-----------------------------|------------------|------------------------|-----------------|------------------------|
| MC79L15ABDG   | -15 V           | TJ = -40° to +125°C         | SOIC-8 (Pb-Free) | 98 Units / Rail        |                 |                        |
| MC79L15ABDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |                 |                        |
| MC79L15ABPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |                 |                        |
| MC79L15ABPRPG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |                 |                        |
| MC79L15ACDG   | -15 V           | TJ = 0° to +125°C           | SOIC-8 (Pb-Free) | 98 Units / Rail        |                 |                        |
| MC79L15ACDR2G |                 |                             | SOIC-8 (Pb-Free) | 2500 / Tape & Reel     |                 |                        |
| MC79L15ACPG   |                 |                             | TO-92 (Pb-Free)  | 2000 Units / Bag       |                 |                        |
| MC79L15ACPRAG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |                 |                        |
| MC79L15ACPREG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Reel     |                 |                        |
| MC79L15ACPRPG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |                 |                        |
| MC79L18ABPRPG |                 |                             | -18 V            | TJ = -40° to +125°C    | TO-92 (Pb-Free) | 2000 / Tape & Ammo Box |
| MC79L18ACPG   |                 |                             |                  | TJ = 0° to +125°C      | TO-92 (Pb-Free) | 2000 Units / Bag       |
| MC79L24ABPG   | -24 V           | TJ = -40° to +125°C         | TO-92 (Pb-Free)  | 2000 Units / Bag       |                 |                        |
| MC79L24ACPG   |                 | TJ = 0° to +125°C           | TO-92 (Pb-Free)  | 2000 Units / Bag       |                 |                        |
| MC79L24ACPRMG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |                 |                        |
| MC79L24ACPRPG |                 |                             | TO-92 (Pb-Free)  | 2000 / Tape & Ammo Box |                 |                        |

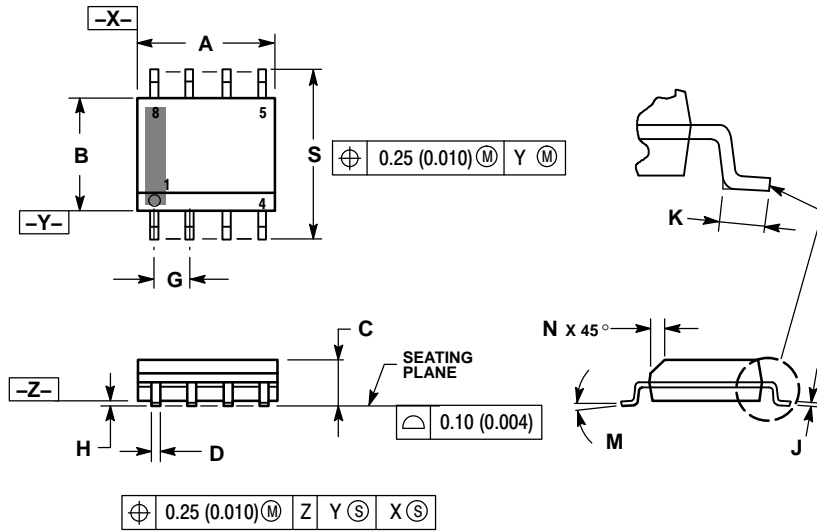
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



# MC79L00A Series

## PACKAGE DIMENSIONS

SOIC-8 NB  
CASE 751-07  
ISSUE AK

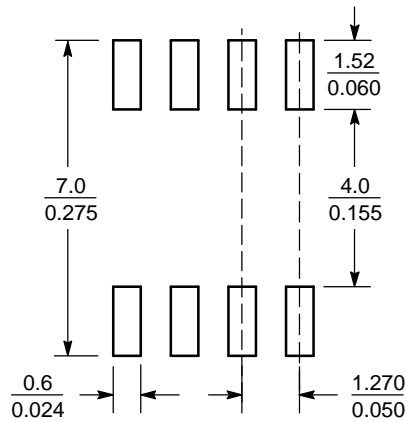


**NOTES:**

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. 751-01 THRU 751-06 ARE OBSOLETE. NEW STANDARD IS 751-07.

| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 4.80        | 5.00 | 0.189     | 0.197 |
| B   | 3.80        | 4.00 | 0.150     | 0.157 |
| C   | 1.35        | 1.75 | 0.053     | 0.069 |
| D   | 0.33        | 0.51 | 0.013     | 0.020 |
| G   | 1.27 BSC    |      | 0.050 BSC |       |
| H   | 0.10        | 0.25 | 0.004     | 0.010 |
| J   | 0.19        | 0.25 | 0.007     | 0.010 |
| K   | 0.40        | 1.27 | 0.016     | 0.050 |
| M   | 0°          | 8°   | 0°        | 8°    |
| N   | 0.25        | 0.50 | 0.010     | 0.020 |
| S   | 5.80        | 6.20 | 0.228     | 0.244 |

### SOLDERING FOOTPRINT\*



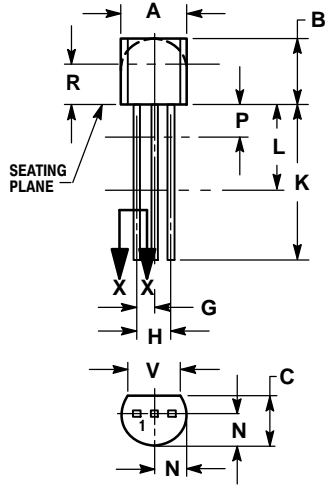
SCALE 6:1 ( $\frac{\text{mm}}{\text{inches}}$ )

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

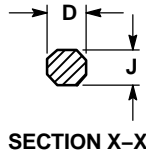
# MC79L00A Series

## PACKAGE DIMENSIONS

TO-92 (TO-226)  
CASE 29-11  
ISSUE AM



STRAIGHT LEAD  
BULK PACK

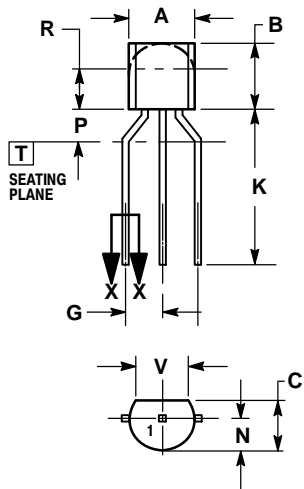


SECTION X-X

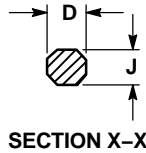
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | INCHES |       | MILLIMETERS |       |
|-----|--------|-------|-------------|-------|
|     | MIN    | MAX   | MIN         | MAX   |
| A   | 0.175  | 0.205 | 4.45        | 5.20  |
| B   | 0.170  | 0.210 | 4.32        | 5.33  |
| C   | 0.125  | 0.165 | 3.18        | 4.19  |
| D   | 0.016  | 0.021 | 0.407       | 0.533 |
| G   | 0.045  | 0.055 | 1.15        | 1.39  |
| H   | 0.095  | 0.105 | 2.42        | 2.66  |
| J   | 0.015  | 0.020 | 0.39        | 0.50  |
| K   | 0.500  | ---   | 12.70       | ---   |
| L   | 0.250  | ---   | 6.35        | ---   |
| N   | 0.080  | 0.105 | 2.04        | 2.66  |
| P   | ---    | 0.100 | ---         | 2.54  |
| R   | 0.115  | ---   | 2.93        | ---   |
| V   | 0.135  | ---   | 3.43        | ---   |



BENT LEAD  
TAPE & REEL  
AMMO PACK



SECTION X-X

NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 4.45        | 5.20 |
| B   | 4.32        | 5.33 |
| C   | 3.18        | 4.19 |
| D   | 0.40        | 0.54 |
| G   | 2.40        | 2.80 |
| J   | 0.39        | 0.50 |
| K   | 12.70       | ---  |
| N   | 2.04        | 2.66 |
| P   | 1.50        | 4.00 |
| R   | 2.93        | ---  |
| V   | 3.43        | ---  |

ON Semiconductor and are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at [www.onsemi.com/Site/pdf/Patent-Marketing.pdf](http://www.onsemi.com/Site/pdf/Patent-Marketing.pdf). ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

### PUBLICATION ORDERING INFORMATION

**LITERATURE FULFILLMENT:**  
Literature Distribution Center for ON Semiconductor  
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA  
**Phone:** 303-675-2175 or 800-344-3860 Toll Free USA/Canada  
**Fax:** 303-675-2176 or 800-344-3867 Toll Free USA/Canada  
**Email:** [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

**N. American Technical Support:** 800-282-9855 Toll Free  
USA/Canada  
**Europe, Middle East and Africa Technical Support:**  
Phone: 421 33 790 2910  
**Japan Customer Focus Center**  
Phone: 81-3-5817-1050

**ON Semiconductor Website:** [www.onsemi.com](http://www.onsemi.com)  
**Order Literature:** <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative