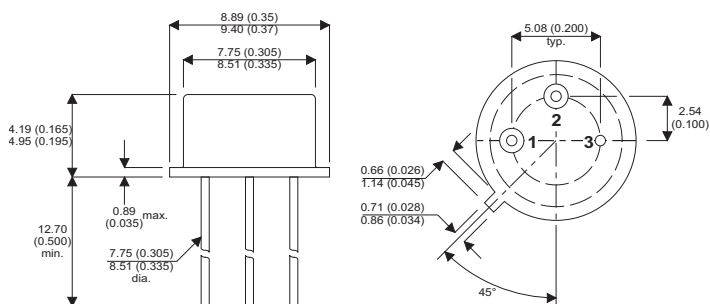


## MECHANICAL DATA

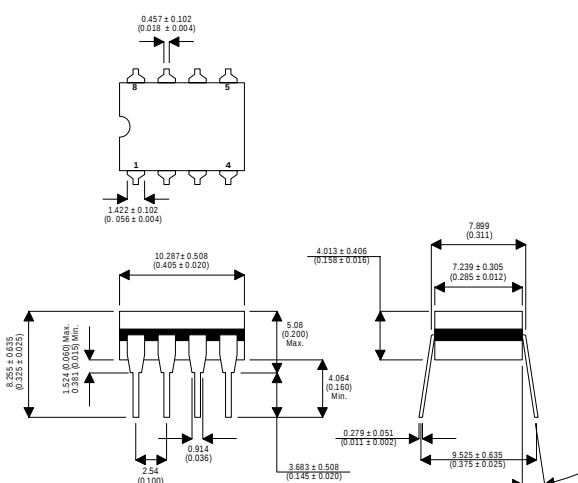


### H Package - TO-39 Metal

Pin 1 = Ground

Pin 2 = Vout

Pin 3 = Vin



### J Package = 8 Pin Ceramic DIP

Pin 1 = Ground

Pin 5 = N/C

Pin 2 = N/C

Pin 6 = Vin

Pin 3 = N/C

Pin 7 = N/C

Pin 4 = Vout

Pin 8 = N/C

## 5 VOLT NEGATIVE VOLTAGE REGULATOR

### FEATURES

- 0.01%/V LINE REGULATION
- 0.3%/A LOAD REGULATION
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION
- SAFE OPERATING AREA PROTECTION
- 1% OUTPUT VOLTAGE TOLERANCE

### DESCRIPTION

The IP79M05AHX and IP79M05AJX are 5V negative 1.5A Voltage Regulators providing 0.01% per Volt Line Regulator and 0.3% per amp load regulation.

Projection includes safe operating Area current limiting and thermal.

## ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

|           |                                      |             |                                   |
|-----------|--------------------------------------|-------------|-----------------------------------|
| $V_I$     | DC Input Voltage                     | $V_O = -5V$ | 35V                               |
| $P_D$     | Power Dissipation                    |             | Internally limited                |
| $T_j$     | Operating Junction Temperature Range |             | $-55^{\circ}C$ to $+150^{\circ}C$ |
|           | Maximum Junction Temperature         |             | $150^{\circ}C$                    |
| $T_{stg}$ | Storage Temperature Range            |             | $-65^{\circ}C$ to $+150^{\circ}C$ |
| $T_L$     | Lead Temperature (Soldering, 10 sec) |             | $300^{\circ}C$                    |

## ELECTRICAL CHARACTERISTICS ( $T_j = 25^\circ\text{C}$ unless stated)

| Parameter                                           | Test Conditions                                                                                          | Min.   | Typ.                                               | Max.                                                    | Unit                  |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------|---------------------------------------------------------|-----------------------|
| $V_O$ Output Voltage*                               | $I_O = 100\text{mA}$ $V_{IN} = 10\text{V}$                                                               | - 4.95 | - 5                                                | - 5.05                                                  | V                     |
|                                                     | $I_O = 5\text{mA to } 350\text{mA}$ $P_D \leq P_{MAX}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$     | - 4.85 |                                                    | - 5.15<br>( $V_{IN} = - 7.5 \text{ to } - 20\text{V}$ ) |                       |
| $\Delta V_O$ Line Regulation*                       | $I_O = 200\text{mA}$                                                                                     |        | 3<br>( $V_{IN} = - 7 \text{ to } - 25\text{V}$ )   | 10                                                      | mV                    |
|                                                     | $I_O = 200\text{mA}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$                                       |        | 3<br>( $V_{IN} = - 8 \text{ to } - 25\text{V}$ )   | 10                                                      |                       |
|                                                     | $I_O = 500\text{mA}$                                                                                     |        | 3<br>( $V_{IN} = 8 \text{ to } 12\text{V}$ )       | 10                                                      |                       |
| $\Delta V_O$ Load Regulation*                       | $I_O = 5\text{mA to } 500\text{mA}$ $V_{IN} = 10\text{V}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$  |        | 5                                                  | 50                                                      | mV                    |
| $I_d$ Quiescent Current*                            | $I_O = 350\text{mA}$ $V_{IN} = 10\text{V}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$                 |        | 4                                                  | 6                                                       | mA                    |
| $\Delta I_Q$ Quiescent Current Change*              | $I_O = 5 \text{ to } 500 \text{ mA}$ $V_{IN} = 10\text{V}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$ |        | 0.1                                                | 0.5                                                     | mA                    |
|                                                     | $I_O = 200\text{mA}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$                                       |        | 0.2<br>( $V_{IN} = - 8 \text{ to } - 25\text{V}$ ) | 0.8                                                     | mA                    |
| $V_N$ Output Noise Voltage                          | $f = 10\text{Hz to } 100\text{kHz}$                                                                      |        | 40                                                 | 200                                                     | $\mu\text{V}$         |
| $\frac{\Delta V_{IN}}{\Delta V_O}$ Ripple Rejection | $f = 120\text{Hz}$ $I_O = 300\text{mA}$                                                                  | 65     | 80<br>( $V_{IN} = - 8 \text{ to } - 18\text{V}$ )  |                                                         | dB                    |
|                                                     | $f = 120\text{Hz}$ $I_O = 100\text{mA}$<br>$T_j = -55 \text{ to } +150^\circ\text{C}$                    | 65     | 80<br>( $V_{IN} = - 8 \text{ to } - 8\text{V}$ )   |                                                         | dB                    |
| Dropout Voltage*                                    | $I_O = 350\text{mA}$                                                                                     |        | 2                                                  | 2.5                                                     | V                     |
| $I_{SC}$ Short Circuit Current*                     | $V_{IN} = 35\text{V}$                                                                                    |        | 600                                                | 1200                                                    | mA                    |
| $I_{PK}$ Peak Output Current*                       | $V_{IN} = 10\text{V}$                                                                                    | 0.7    | 2.4                                                | 3.3                                                     | A                     |
| Average Temperature Coefficient of Output Voltage*  | $I_O = 5\text{mA}$                                                                                       |        | 0.5                                                | 2.0                                                     | mV / $^\circ\text{C}$ |

\* Pulse Test:  $t_p \leq 10\text{ms}$ ,  $\delta \leq 5\%$ .

All characteristics are measured with a capacitor across the input of  $0.22\mu\text{F}$  and a capacitor across the output of  $0.1\mu\text{F}$ .

Output Voltage changes due to changes in internal temperature must be taken into account separately.

Although power dissipation is internally limited, these specifications apply for up to 2W for the TO-39 package, and 1.05W for the Cerdip (J package).

## THERMAL DATA

|                |                                       |                    |                                     |
|----------------|---------------------------------------|--------------------|-------------------------------------|
| $R_{THj-case}$ | Thermal Resistance Junction – Case    | TO-39 (H Package)  | $20^\circ\text{C} / \text{W Typ.}$  |
| $R_{THj-amb}$  | Thermal Resistance Junction – Ambient | CERDIP (J Package) | $120^\circ\text{C} / \text{W Typ.}$ |
|                | Derate above $25^\circ\text{C}$       | CERDIP (J Package) | $8.4 \text{ mW} / ^\circ\text{C}$   |