



## Description

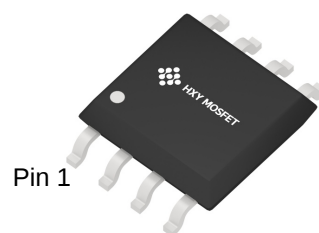
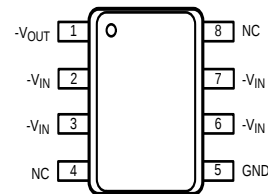
This series of fixed-voltage monolithic integrated circuit voltage regulators is designed for a wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. In addition, they can be used with power-pass elements to make high-current voltage regulators. Each of these regulators can deliver up to 100mA of output current. The internal limiting and thermal shutdown features of these regulators make them essentially immune to overload. When used as a replacement for a Zener diode-resistor combination, an effective improvement in output impedance can be obtained together with lower-bias current.

## Features

- 3-Terminal Regulators
- Output Current Up to 100mA
- No External Components
- Internal Thermal Overload Protection
- Internal Short-Circuit Limiting

## Pin Configuration

SOP-8(SOIC-8)



## Absolute Maximum Ratings

| Symbol         | Parameter                      | Value       | Units |
|----------------|--------------------------------|-------------|-------|
| $V_I$          | Input voltage                  | -30         | V     |
| $I_{CM}$       | Maximum output current         | -100        | 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    |



**Electrical Characteristics  $V_I=-10V$ ,  $I_O=40mA$**

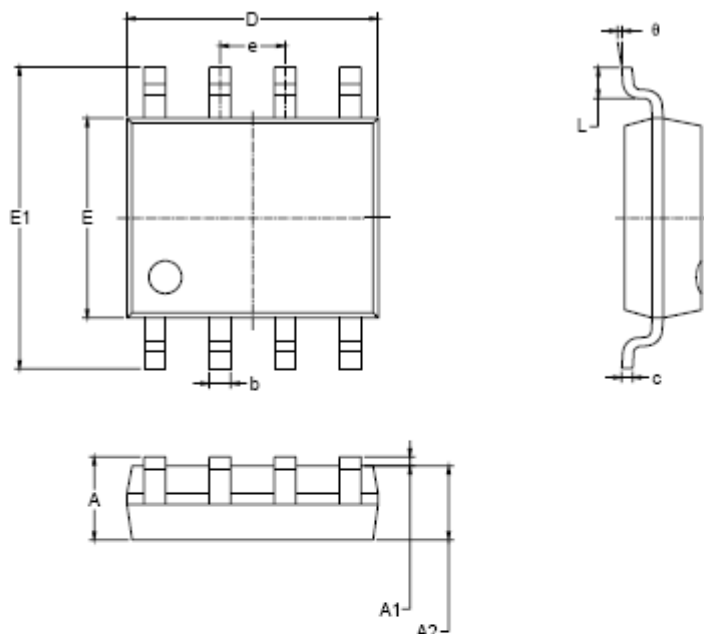
| PARAMETER            | TEST CONDITIONS*                       |             | MIN   | TYP | MAX   | UNIT |
|----------------------|----------------------------------------|-------------|-------|-----|-------|------|
| Output voltage**     |                                        | 25°C        | -4.8  | -5  | -5.2  | V    |
|                      | $I_O=1mA$ to 40mA<br>$V_I=-7V$ to -20V | 0 to 125 °C | -4.75 | -5  | -5.25 |      |
|                      | $I_O=1mA$ to 70mA                      |             | -4.75 | -5  | -5.25 |      |
| Input regulation     | $V_I=-7V$ to -20V                      | 25°C        |       | 15  | 150   | mV   |
|                      | $V_I=-8V$ to -20V                      |             |       | 12  | 100   |      |
| Ripple rejection     | $V_I=-8V$ to -18V, $f=120Hz$           | 25°C        | 41    | 49  |       | dB   |
| Output regulation    | $I_O=1mA$ to 100mA                     | 25°C        |       | 20  | 60    | mV   |
|                      | $I_O=1mA$ to 40mA                      |             |       | 10  | 30    |      |
| Output noise voltage | $f=10Hz-100Hz$                         | 25°C        |       | 40  |       | μV   |
| Dropout voltage      |                                        | 25°C        |       | 1.7 |       | V    |
| Bias current         |                                        | 25°C        |       | 3.8 | 6     | mA   |
|                      |                                        | 125°C       |       |     | 5.5   |      |
| Bias current change  | $V_I=-8V$ to -20V                      | 0 to 125 °C |       |     | 1.5   |      |
|                      | $I_O=1mA$ to 40mA                      |             |       |     | 0.1   |      |

\*Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately. All characteristics are measured with a 0.33μF capacitor across the input and a 0.1μF capacitor across the output.

\*\*This specification applies only for dc power dissipation permitted by absolute maximum ratings.



## SOP-8(SOIC-8) Package Information



| Symbol | Dimensions<br>In Millimeters |       | Dimensions<br>In Inches |       |
|--------|------------------------------|-------|-------------------------|-------|
|        | MIN                          | MAX   | MIN                     | MAX   |
| A      | 1.350                        | 1.750 | 0.053                   | 0.069 |
| A1     | 0.100                        | 0.250 | 0.004                   | 0.010 |
| A2     | 1.350                        | 1.550 | 0.053                   | 0.061 |
| b      | 0.330                        | 0.510 | 0.013                   | 0.020 |
| c      | 0.170                        | 0.250 | 0.006                   | 0.010 |
| D      | 4.700                        | 5.100 | 0.185                   | 0.200 |
| E      | 3.800                        | 4.000 | 0.150                   | 0.157 |
| E1     | 5.800                        | 6.200 | 0.228                   | 0.244 |
| e      | 1.27 BSC                     |       | 0.050 BSC               |       |
| L      | 0.400                        | 1.270 | 0.016                   | 0.050 |
| θ      | 0°                           | 8°    | 0°                      | 8°    |



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