

### General Description

Dual 125mA CMOS LDO in an SO-8 package. This part offers 120mV dropout voltage on each output at 100mA typical (5V part), and nearly zero dropout below 5mA. Each output is independently short-circuit protected.

Its all-CMOS design means that only 2.2 $\mu$ A of current is required to run the part.

$\pm$ 2% accurate outputs come in a number of configurations, to allow for flexible yet compact portable system designs.

### Features

- All-CMOS design in an 8-lead SOIC package
- $\pm$ 2% precision outputs
- 2.2 $\mu$ A of Iq
- Short-circuit protected outputs
- Voltage options allow:
  - Dual 50mA 5.0 & 3.3V Regulator
  - Dual 50mA 5.0 & 3.0V Regulator
  - Dual 125mA 5V to 3.0V & 3.3V Converter

### Applications

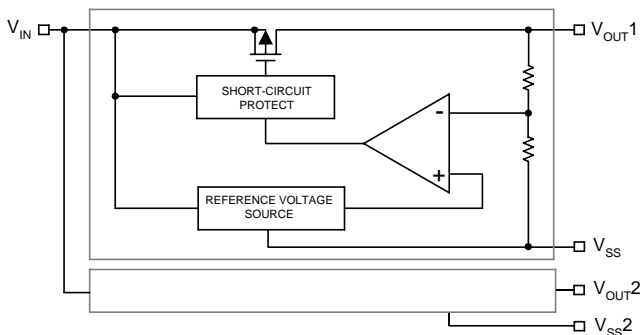
- Battery-powered Equipment
- Portable communications
- PDAs and palmtops

### Ordering Information

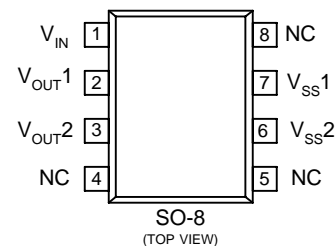
|                 |   |
|-----------------|---|
| ILC7262CS-50/30 | Dual 50mA 5v & 3.0V Regulator           |
| ILC7262CS-50/33 | Dual 50mA 5V & 3.3V Regulator           |
| ILC7262CS-33/30 | Dual 125mA 5V to 3.0 V & 3.3V Converter |

\*Standard Product offering comes in tape & reel, quantity 1000 per reel, orientation right.

### Block Diagram



### Pin-Package Configurations



Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ )

| Parameter                          | Symbol    | Ratings                     | Units            |
|------------------------------------|-----------|-----------------------------|------------------|
| Input Voltage                      | $V_{IN}$  | 12                          | V                |
| Output Current                     | $I_{OUT}$ | 500                         | mA               |
| Output Voltage                     | $V_{OUT}$ | $V_{SS}-0.3\sim V_{IN}+0.3$ | V                |
| Continuous Total Power Dissipation | $P_d$     | 300                         | mW               |
| Operating Ambient Temperature      | $T_{opr}$ | -30~+80                     | $^\circ\text{C}$ |
| Storage Temperature                | $T_{stg}$ | -40~+125                    | $^\circ\text{C}$ |

Note: The total of  $I_{OUT}$ 's must be less than  $P_d / (V_{IN}-V_{OUT1}) + P_d / (V_{IN}-V_{OUT2})$

## Electrical Characteristics

ILC7262 COMMON CHARACTERISTICS  $T_A = 25^\circ\text{C}$ .

| Parameter      | Symbol   | Conditions             | Min | Typ | Max  | Units         |
|----------------|----------|------------------------|-----|-----|------|---------------|
| Supply Current | $I_{SS}$ | $V_{IN} = 6.0\text{V}$ |     | 2.2 | 6.0  | $\mu\text{A}$ |
| Input Voltage  | $V_{IN}$ |                        |     |     | 10.0 | V             |

## Electrical Characteristics ILC7262

$V_{OUT}$  SECTION:  $V_{OUT}(T) = 5.0\text{V}$ ,  $T_A = 25^\circ\text{C}$

| Parameter                                  | Symbol  | Conditions  | Min  | Typ        | Max        | Units                 |
|--|---|---|------|------------|------------|-----------------------|
| Output Voltage                             | $V_{OUT}$   | $I_{OUT} = 40\text{mA}$ , $V_{IN} = 6.0\text{V}$                                  | 4.90 | 5.0        | 5.10       | V                     |
| Maximum Output Current                     | $I_{OUTmax}$  | $V_{IN} = 6.0\text{V}$ , $V_{OUT} \geq 4.5\text{V}$                               | 250  |            |            | mA                    |
| Load Stability                             | $\Delta V_{OUT}$                                      | $V_{IN} = 6.0\text{V}$ , $1\text{mA} \leq I_{OUT} \leq 100\text{mA}$              |      | 40         | 80         | mV                    |
| Input/Output Voltage Differential          | $V_{dif}$   | $I_{OUT} = 100\text{mA}$<br>$I_{OUT} = 200\text{mA}$                              |      | 120<br>380 | 300<br>600 | mV                    |
| Input Stability                            | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$  | $I_{OUT} = 40\text{mA}$<br>$6.0\text{V} \leq V_{IN} \leq 10.0\text{V}$            |      | 0.2        | 0.3        | %/V                   |
| Output Voltage Temperature Characteristics | $\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$ | $I_{OUT} = 40\text{mA}$<br>$-30^\circ\text{C} \leq T_{opr} \leq 80^\circ\text{C}$ |      | $\pm 100$  |            | ppm/ $^\circ\text{C}$ |

Note:

- $V_{OUT}$  means the output voltage when " $V_{OUT} + 1.0\text{V}$ " is provided at the  $V_{IN}$  pin while maintaining a certain  $I_{OUT}$  value.
- $V_{dif}$  is defined as " $V_{IN}-V_{OUT}$ " where  $V_{OUT} = V_{SET} \times 0.98$ .

## Electrical Characteristics ILC7262

V<sub>OUT2</sub> SECTION: V<sub>OUT(T)</sub> = 3.3V, T<sub>A</sub> = 25°C

| Parameter                                  | Symbol  | Conditions   | Min   | Typ        | Max        | Units  |
|--|---|--|-------|------------|------------|--------|
| Output Voltage                             | V <sub>OUT</sub>                                      | I <sub>OUT</sub> = 40mA, V <sub>IN</sub> = 6.0V            | 3.234 | 3.30       | 3.37       | V      |
| Maximum Output Current                     | I <sub>OUTmax</sub>                                   | V <sub>IN</sub> = 6.0V, V <sub>OUT</sub> ≥ 2.97V           | 165   |            |            | mA     |
| Load Stability                             | ΔV <sub>OUT</sub>                                     | V <sub>IN</sub> = 6.0V, 1mA ≤ I <sub>OUT</sub> ≤ 80mA      |       | 45         | 90         | mV     |
| Input/Output Voltage Differential          | V <sub>dif</sub>                                      | I <sub>OUT</sub> = 80mA<br>I <sub>OUT</sub> = 160mA        |       | 180<br>400 | 360<br>700 | mV     |
| Input Stability                            | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$  | I <sub>OUT</sub> = 40mA<br>6.0V ≤ V <sub>IN</sub> ≤ 10.0V  |       | 0.2        | 0.3        | %/V    |
| Output Voltage Temperature Characteristics | $\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$ | I <sub>OUT</sub> = 40mA<br>-30°C ≤ T <sub>opr</sub> ≤ 80°C |       | ±100       |            | ppm/°C |

## Electrical Characteristics ILC7262

V<sub>OUT2</sub> SECTION: V<sub>OUT(T)</sub> = 3.0V, T<sub>A</sub> = 25°C

| Parameter                                  | Symbol  | Conditions   | Min  | Typ        | Max        | Units  |
|--|---|--|------|------------|------------|--------|
| Output Voltage                             | V <sub>OUT</sub>                                      | I <sub>OUT</sub> = 40mA, V <sub>IN</sub> = 6.0V            | 2.94 | 3.0        | 3.06       | V      |
| Maximum Output Current                     | I <sub>OUTmax</sub>                                   | V <sub>IN</sub> = 6.0V, V <sub>OUT</sub> ≥ 2.7V            | 150  |            |            | mA     |
| Load Stability                             | ΔV <sub>OUT</sub>                                     | V <sub>IN</sub> = 6.0V, 1mA ≤ I <sub>OUT</sub> ≤ 80mA      |      | 45         | 90         | mV     |
| Input/Output Voltage Differential          | V <sub>dif</sub>                                      | I <sub>OUT</sub> = 80mA<br>I <sub>OUT</sub> = 160mA        |      | 180<br>400 | 360<br>700 | mV     |
| Input Stability                            | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$  | I <sub>OUT</sub> = 40mA<br>6.0V ≤ V <sub>IN</sub> ≤ 10.0V  |      | 0.2        | 0.3        | %/V    |
| Output Voltage Temperature Characteristics | $\frac{\Delta V_{OUT}}{\Delta T_{opr} \cdot V_{OUT}}$ | I <sub>OUT</sub> = 40mA<br>-30°C ≤ T <sub>opr</sub> ≤ 80°C |      | ±100       |            | ppm/°C |

Typical Performance Characteristics *General conditions for all curves*

