

## ABSOLUTE MAXIMUM RATINGS

(Notes 1 and 2)

|                                       |                                                    |
|---------------------------------------|----------------------------------------------------|
| Supply Voltage                        | 9.5V                                               |
| Input Voltage on Pins 1, 6 and 7      |                                                    |
| (Note 2)                              | $-0.3V \leq V_{IN} \leq V^+ + 0.3V$                |
| Current into Pin 6                    | 20 $\mu$ A                                         |
| Output Short Circuit Duration         |                                                    |
| ( $V^+ \leq 5.5V$ )                   | Continuous                                         |
| Operating Temperature Range           | $-40^\circ\text{C} \leq T_A \leq 85^\circ\text{C}$ |
| Storage Temperature Range             | $-65^\circ\text{C}$ to $+150^\circ\text{C}$        |
| Lead Temperature (Soldering, 10 sec.) | 300 $^\circ\text{C}$                               |

## PACKAGE/ORDER INFORMATION

|                                                  |                      |
|--------------------------------------------------|----------------------|
| <p>TOP VIEW</p> <p>S8 PACKAGE<br/>PLASTIC SO</p> | ORDER<br>PART NUMBER |
|                                                  | LTC1044CS8           |
|                                                  | PART MARKING         |
|                                                  | 1044                 |

ELECTRICAL CHARACTERISTICS  $V^+ = 5V$ ,  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

See LTC1044/7660 data sheet for test circuit.

| SYMBOL       | PARAMETER                         | CONDITIONS                                                                            | LTC1044CS8 |          |                   | UNITS                            |
|--------------|-----------------------------------|---------------------------------------------------------------------------------------|------------|----------|-------------------|----------------------------------|
|              |                                   |                                                                                       | MIN        | TYP      | MAX               |                                  |
| $I_S$        | Supply Current                    | $R_L = \infty$ , Pins 1 and 7 No Connection<br>$R_L = \infty$ , Pins 1 and 7 $V = 3V$ |            | 60<br>20 | 200               | $\mu$ A<br>$\mu$ A               |
| $V^+_{L}$    | Minimum Supply Voltage            | $R_L = 10k$                                                                           | 1.5        |          |                   | V                                |
| $V^+_{H}$    | Maximum Supply Voltage            | $R_L = 10k$ (Note 3)                                                                  |            |          | 9                 | V                                |
| $R_{OUT}$    | Output Resistance                 | $I_L = 200mA$ , $f_{OSC} = 5kHz$<br>$V^+ = 2V$ , $I_L = 3mA$ , $f_{OSC} = 1kHz$       |            |          | 100<br>130<br>325 | $\Omega$<br>$\Omega$<br>$\Omega$ |
| $f_{OSC}$    | Oscillator Frequency              | $C_{OSC} = 1pF$ (Note 4)<br>$V^+ = 5V$<br>$V^+ = 2V$                                  | 5<br>1     |          |                   | kHz<br>kHz                       |
| $P_{EFF}$    | Power Efficiency                  | $R_L = 5k\Omega$ , $f_{OSC} = 5kHz$                                                   | 95         | 98       |                   | %                                |
| $V_{OUTEFF}$ | Voltage Conversion Efficiency     | $R_L = \infty$                                                                        | 97         | 99.9     |                   | %                                |
| $I_{OSC}$    | Oscillator Sink or Source Current | $V_{OSC} = 0V$ or $V^+$<br>Pin 1 = $0V$<br>Pin 1 = $V^+$                              |            |          | 3<br>20           | $\mu$ A<br>$\mu$ A               |

The ● denotes the specifications which apply over the full operating temperature range.

**Note 1:** Absolute Maximum Ratings are those values beyond which the life of the device may be impaired.

**Note 2:** Connecting any input terminal to voltages greater than  $V^+$  or less than ground may cause destructive latch-up. It is recommended that no inputs from sources operating from external supplies be applied prior to power-up of the LTC1044.

**Note 3:** The LTC1044 is guaranteed to operate with alkaline, mercury or NiCad 9V batteries, even though the initial battery voltage may be slightly higher than 9.0V.

**Note 4:**  $f_{OSC}$  is tested with  $C_{OSC} = 100pF$  to minimize the effects of test fixture capacitance loading. The 1pF frequency is correlated to this 100pF test point, and is intended to simulate the capacitance at pin 7 when the device is plugged into a test socket and no external capacitor is used.