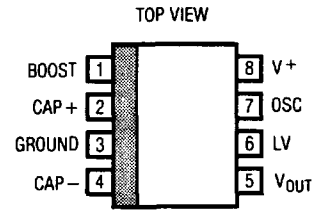
## ABSOLUTE MAXIMUM RATINGS

**(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 ..... 20μA
Output Short Circuit Duration
($V^+ \leq 5.5V$) ..... Continuous
Operating Temperature Range.... $-40°C \leq T_A \leq 85°C$
Storage Temperature Range..... $-65°C$ to $+150°C$
Lead Temperature (Soldering, 10 sec.) .....300°C

## PACKAGE/ORDER INFORMATION




S8 PACKAGE
PLASTIC SO

| ORDER PART NUMBER |
|---|
| LTC1044CS8 |
| **PART MARKING** |
| 1044 |

## ELECTRICAL CHARACTERISTICS

**$V^+ = 5V$, $T_A = 25°C$, unless otherwise specified.**

**See LTC1044/7660 data sheet for test circuit.**

| SYMBOL | PARAMETER | CONDITIONS | | LTC1044CS8 MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|---|
| $I_S$ | Supply Current | $R_L = \infty$, Pins 1 and 7 No Connection | | | 60 | 200 | μA |
| | | $R_L = \infty$, Pins 1 and 7 V = 3V | | | 20 | | μA |
| $V^+_L$ | 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 | $I_L = 200mA$, $f_{OSC} = 5kHz$ | | | | 100 | Ω |
| | | | ● | | | 130 | Ω |
| | | $V^+ = 2V$, $I_L = 3mA$, $f_{OSC} = 1kHz$ | ● | | | 325 | Ω |
| $f_{OSC}$ | Oscillator Frequency | $C_{OSC} = 1pF$ (Note 4) | | | | | |
| | | $V^+ = 5V$ | ● | 5 | | | kHz |
| | | $V^+ = 2V$ | ● | 1 | | | 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 $V^+$ | | | | | |
| | | Pin 1 = 0V | ● | | | 3 | μA |
| | | Pin 1 = $V^+$ | ● | | | 20 | μA |

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.