## ■ 产品概述

XR8841(单通道)是低成本，轨到轨输入/输出，电压反馈放大器。它提供了宽的共模输入电压范围及输出电压摆幅，其最低工作电压为 2.1V，最高工作电压为 5.5V。其温度范围超出工业标准：-40℃ 到 +125℃

XR8841 能以 42μA/通道的低消耗电流提供高达 1.1MHz 的带宽。其极低的偏置电流(0.5pA)，使它非常适合用在积分器、光电二极管放大器及压电式敏感器等。轨到轨输入/输出的特性是设计专用集成电路的理想选择。

XR8841 可应用于多个领域，如安全设备的监控、便携式设备、电池供电设备、信号处理、以及以低电源供电系统中传感器信号的处理等。

## ■ 用途

- ASIC 输入或输出放大器
- 音频输出
- 手持设备
- 移动电话
- 笔记本电脑
- PCMCIA 卡
- 电池供电设备

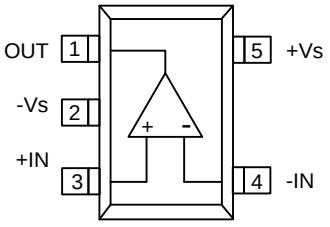
## ■ 产品特点

- 低成本
- 轨到轨输入/输出
- 单位增益稳定
- 压摆率：0.52(V/μs)
- 最小电源抑制比：72dB
- 最小共模抑制比：76dB
- 失调电压：典型值 0.8mV ，最大 3.5mV
- 增益带宽积：1.1MHz
- 极低的输入偏置电流：0.5pA
- 工作电压范围：2.1 V 到 5.5 V
- 输入电压范围：0.1V 到+5.6V（$V_S$=5.5V）
- 静态电流：42μA

## ■ 封装

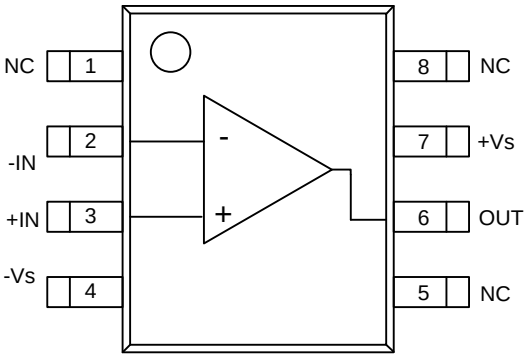
- SOP-8
- SOT-23-5

## ■ PIN 脚示意图




SOT-23-5

**订购信息：XR8841PR**




SOP-8
NC=NO CONNECT

**订购信息：XR8841M**

## ■ 绝对最大额定值

| 项目 | 符号 | 值 | 单位 |
|---|---|---|---|
| 工作电压 | $V_{DD}$ | 7.5 | V |
| 共模输入电压 | $V_{CM}$ | (-VS)-0.5 到(+VS)+0.5 | V |
| 贮存温度 | Tstg | -55—150 | ℃ |
| 结点温度 | — | 150 | ℃ |
| ESD 参数 | HBM | 4000 | V |
| | MM | 400 | V |

**注意：** 绝对最大额定值是指在任何条件下都不能超过的额定值。万一超过此额定值，有可能造成产品劣化等物理性损伤。

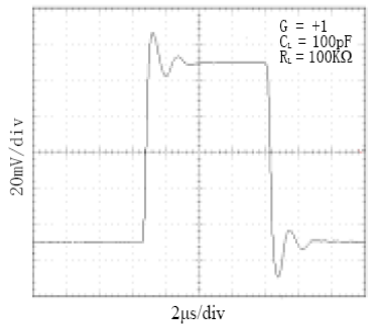
## ■ 电学特性参数

（$V_S$=+5V $R_L$=100KΩ $V_{OUT}$=$V_S$/2）

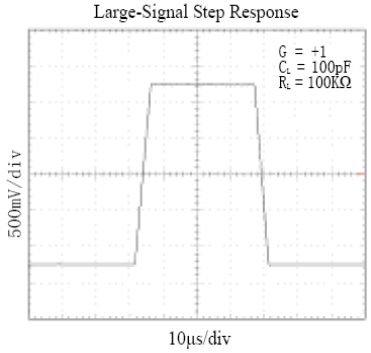
| 符号 | 参数 | 测试条件 | 最小 | 典型 | 最大 | 单位 |
|---|---|---|---|---|---|---|
| $V_{OS}$ | 输入失调电压 | | | ±0.8 | ±5.4 | mV |
| $I_B$ | 输入偏置电流 | | | 0.5 | | pA |
| $I_{OS}$ | 输入失调电流 | | | 0.5 | | pA |
| $V_{CM}$ | 共模电压范围 | $V_S$＝5.5V | -0.1 | | 5.6 | V |
| CMRR | 共模抑制比 | $V_S$＝5.5V ，$V_{CM}$＝-0.1V－4V | 72 | 88 | | dB |
| | | $V_S$＝5.5V ，$V_{CM}$＝-0.1V－5.6V | 57 | 78 | | dB |
| $A_{OL}$ | 开环增益 | $R_L$=5K，$V_O$=0.1V-4.9V | 78 | 90 | | dB |
| | | $R_L$=100K，$V_O$=0.035V-4.965V | 82 | 94 | | dB |
| $\triangle V_{OS}/\triangle T$ | 输入失调电压温漂 | | | 2.7 | | μV/℃ |
| $V_{SW}$ | 输出电压到轨摆幅 | $R_L$=100K | | 0.008 | | V |
| $I_{OUT}$ | 输出电流 | | 18 | 23 | | mA |
| VDD | 工作电压范围 | | 2.1 | | 5.5 | |
| PSRR | 电源抑制比 | $V_S$=+2.5V to +5.5V，<br>$V_{CM}$=(-$V_S$)+0.5V | 70 | 92 | | |
| $I_Q$ | 静态电流 | $I_{OUT}$=0 | | 42 | 60 | μA |
| GBP | 增益带宽积 | CL=100pF | | 1.1 | | MHz |
| SR | 压摆率 | | | 0.052 | | V/μs |

## ■ 特征曲线

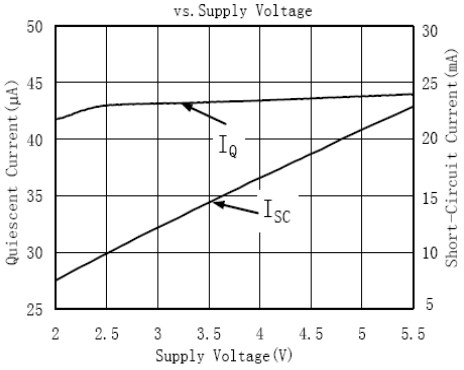
Small-Signal Step Response



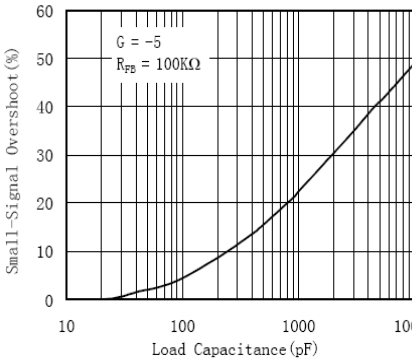

Large-Signal Step Response



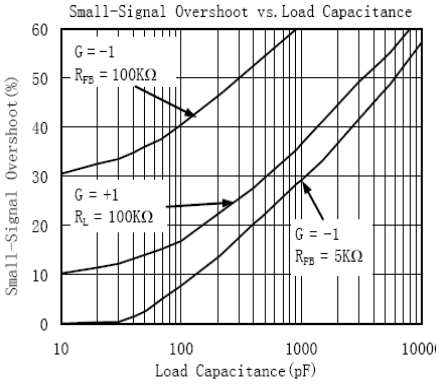

Quiescent And Short-Circuit Current vs. Supply Voltage



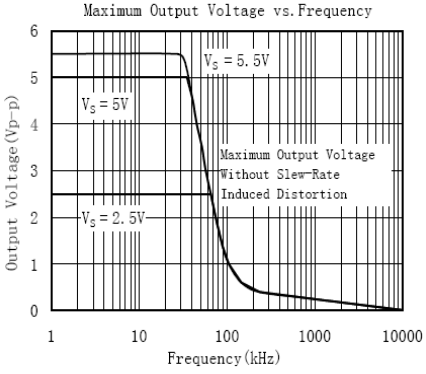

Small-Signal Overshoot vs. Load Capacitance



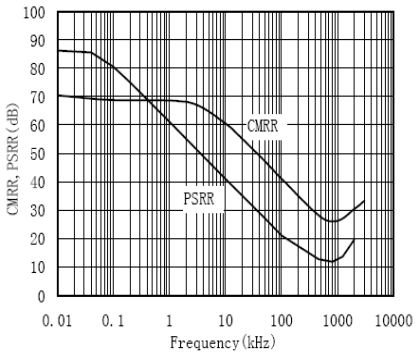

Small-Signal Overshoot vs. Load Capacitance



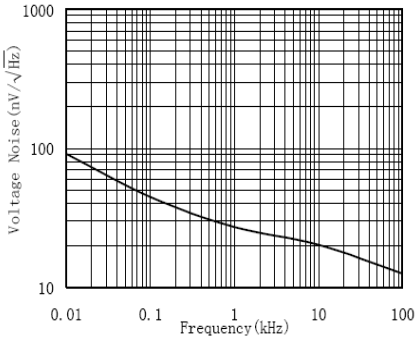

Maximum Output Voltage vs. Frequency



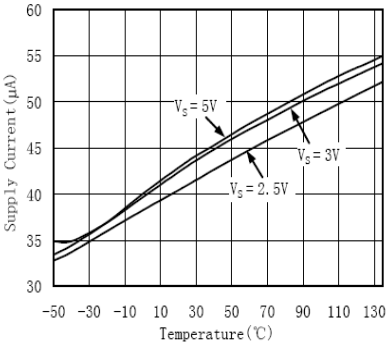

CMRR And PSRR vs. Frequency



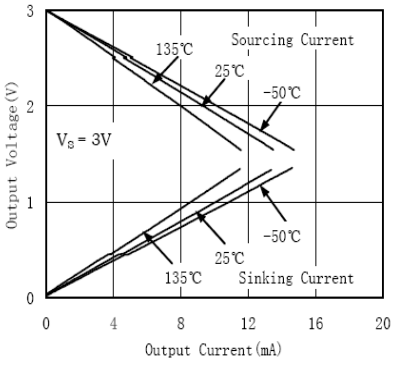

Input Voltage Noise Spectral Density vs. Frequency



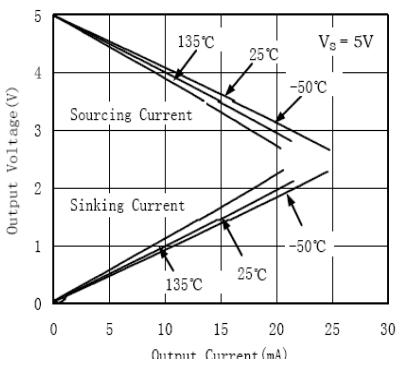

Supply Current vs. Temperature



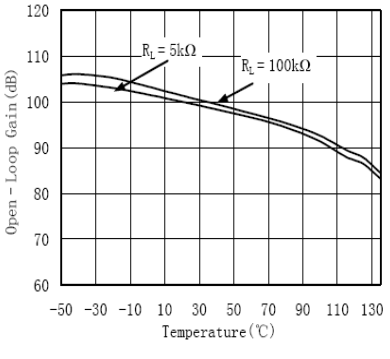

Output Voltage Swing vs. Output Current



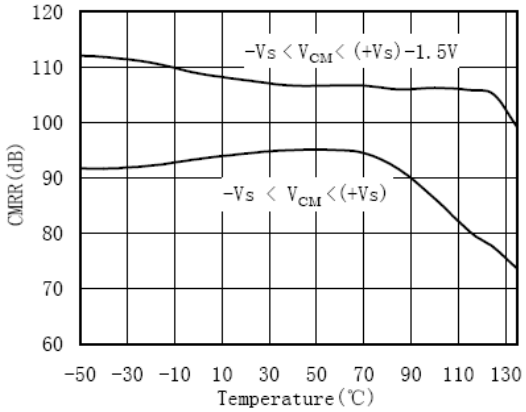

Output Voltage Swing vs. Output Current



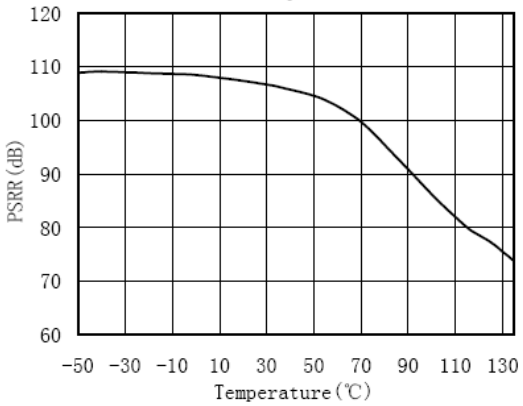

Open-Loop Gain vs. Temperature



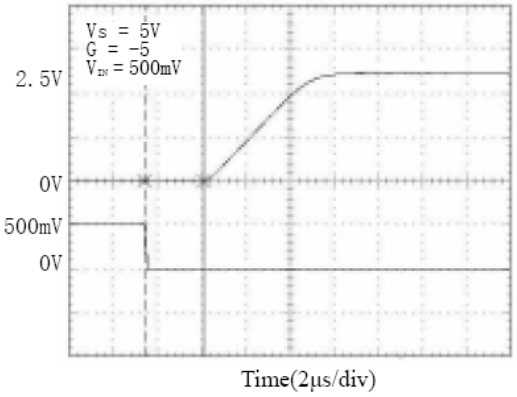
Common-Mode Rejection Ratio
vs. Temperature



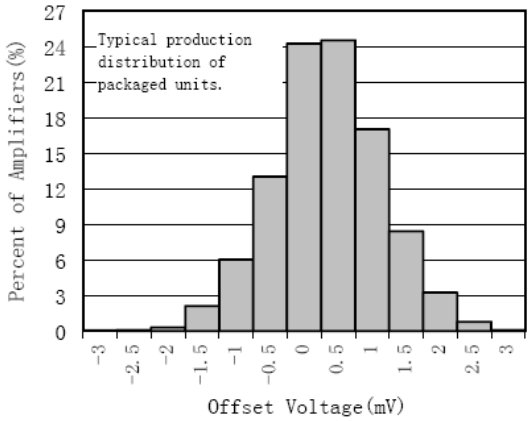

Power-Supply Rejection Ratio
vs. Temperature




Overload Recovery Time

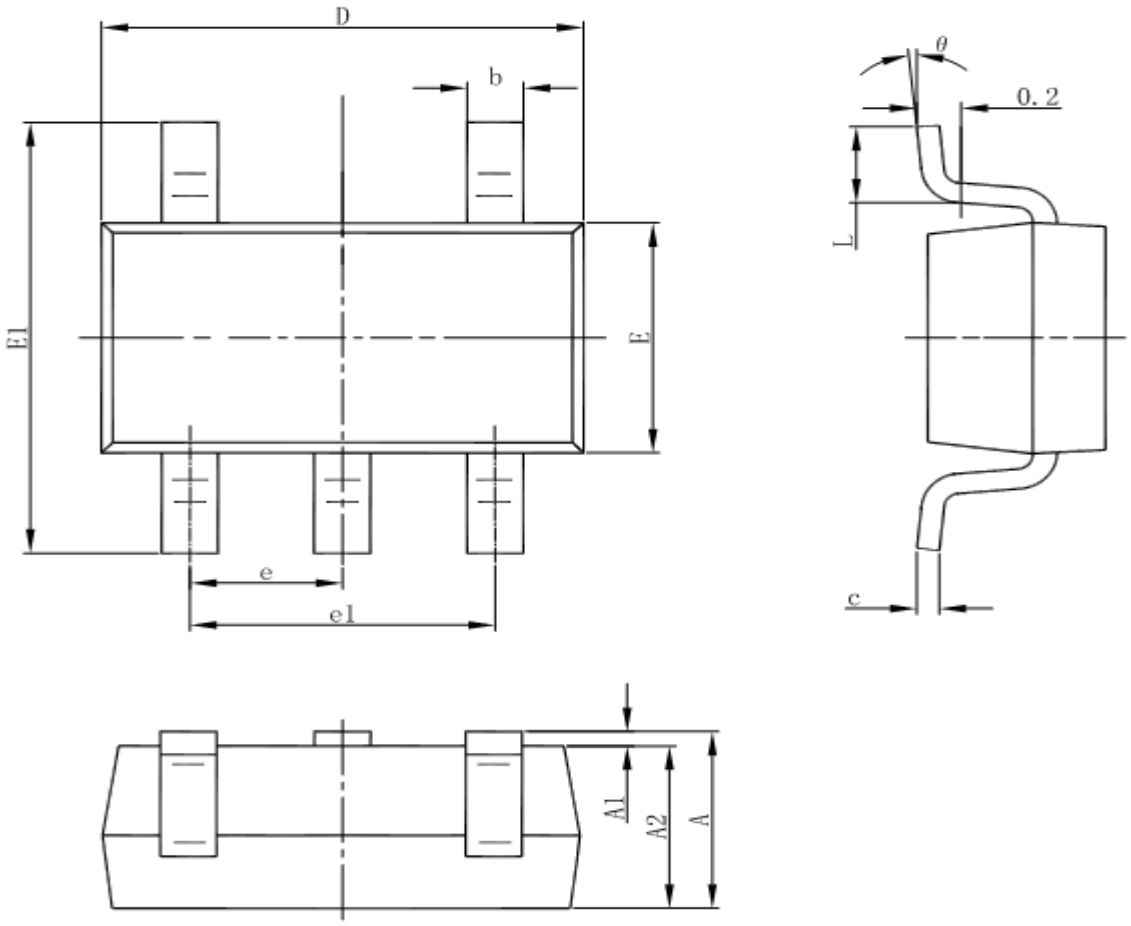



Offset Voltage Production Distribution



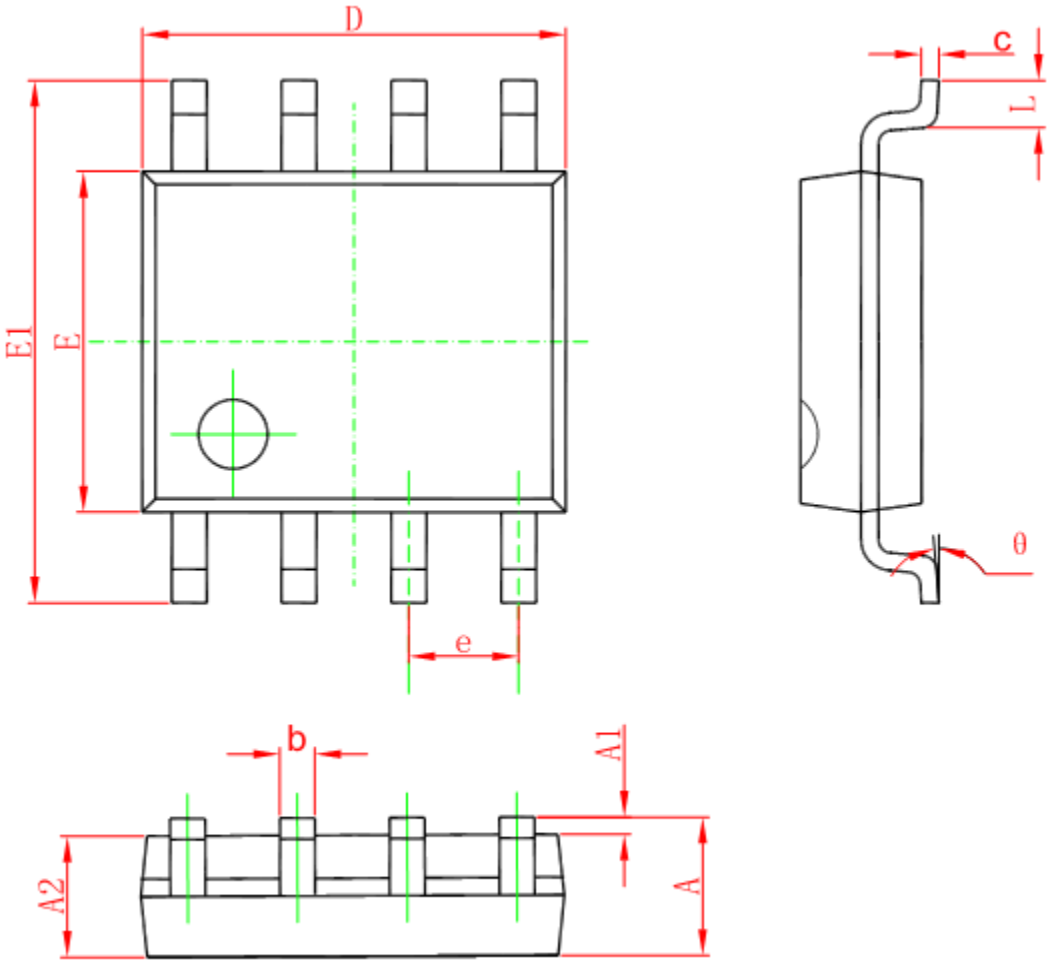
## ■ 封装信息

- **SOT-23-5**




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950(BSC) | | 0.037(BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |

- **SOP-8**




| Symbol | Dimensions In Millimeters | | Dimensions 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 | 1.270 (BSC) | | 0.050 (BSC) | |
| L | 0.400 | 1.270 | 0.016 | 0.050 |
| θ | 0° | 8° | 0° | 8° |