



## ■ 产品简介

XC6204系列是以CMOS工艺制造的高精度，低噪音，快速响应低压差线性稳压器。该系列的稳压器内置固定的参考电压，误差修正电路，限流电路，相位补偿电路以及低内阻的MOSFET，达到高纹波抑制，低输出噪音，快速响应低压差的性能。

XC6204系列兼容体积比钽电容更小的陶瓷电容，而且不需使用0.1 $\mu$ F的By-pass电容，更能节省空间，降低了成本。因具有高精度的输出稳定性，以及快速瞬态响应性能，从而能应付负载电流的波动，所以特别适合应用在手持设备及射频产品上。

通过控制芯片上的CE脚，可将输出关断，关断输出后的静态电流只有0.1 $\mu$ A（Typ值），从而大大降低了功耗。

## ■ 产品特点

- 输出范围：1.8V-5.0V
- 300mA 输出电流
- 高电源抑制比：75分贝1千赫
- 极低的静态偏置电流：25 $\mu$ A（典型）
- 交界处的温度运作为-20 $^{\circ}$ C至+60 $^{\circ}$ C
- XC6204采用 SOT-23-5L 封装

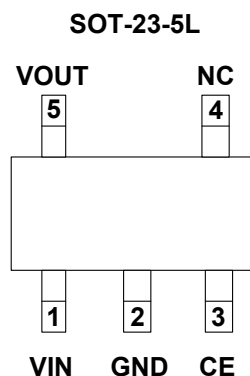
## ■ 产品用途

- CDMA / GSM 移动电话
- PDAs/MP3
- WLAN 和蓝牙设备
- 无绳电话
- 电池供电系统

## ■ 型号介绍

| 型号名           | 封装        | 输出电压 | 包装信息   |
|---------------|-----------|------|--------|
| XC 6204B182MR | SOT-23-5L | 1.8V | 3000/盘 |
| XC 6204B252MR | SOT-23-5L | 2.5V | 3000/盘 |
| XC 6204B282MR | SOT-23-5L | 2.8V | 3000/盘 |
| XC 6204B302MR | SOT-23-5L | 3.0V | 3000/盘 |
| XC 6204B332MR | SOT-23-5L | 3.3V | 3000/盘 |
| XC 6204B362MR | SOT-23-5L | 3.6V | 3000/盘 |
| XC 6204B502MR | SOT-23-5L | 5.0V | 3000/盘 |

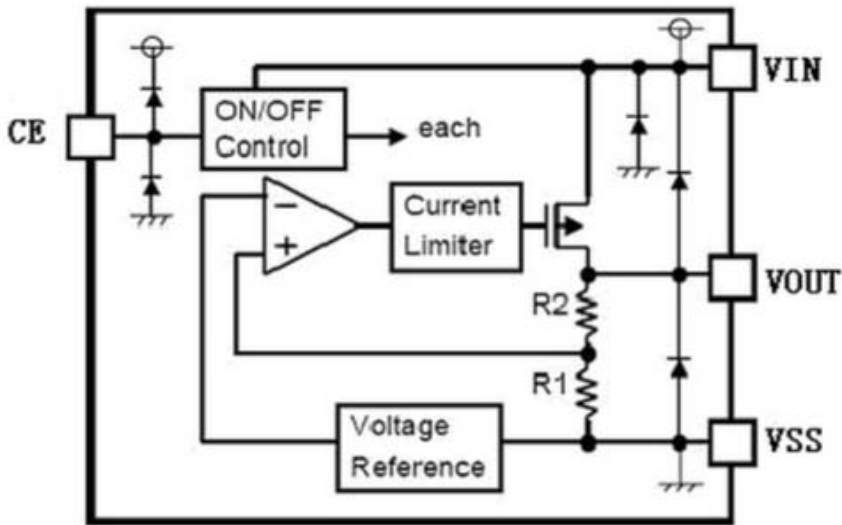
## ■ 封装形式和管脚定义功能



| PIN脚位     | 符号               | 功能说明  |
|-----------|------------------|-------|
| SOT-23-5L |                  |       |
| 1         | V <sub>IN</sub>  | 电源输入端 |
| 2         | V <sub>SS</sub>  | 地     |
| 3         | CE               | 使能端   |
| 4         | NC               | 悬空    |
| 5         | V <sub>OUT</sub> | 电源输出端 |



■ 功能框图

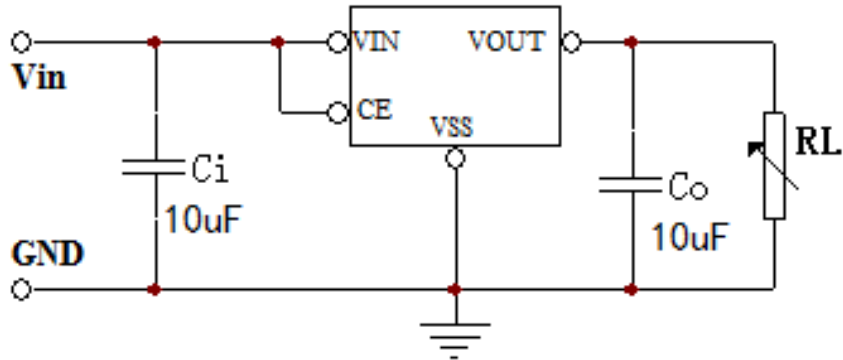


■ 极限参数

| 项目 | 符号                  | 说明     | 极限值             | 单位 |
|----|---------------------|--------|-----------------|----|
| 电压 | Vin                 | 输入电压   | 8               | V  |
|    | Vout                | 输出电压   | Vss-0.3~Vin+0.3 | V  |
| 电流 | Iout                | 输出电流   | 500             | mA |
| 功耗 | PD                  | 最大允许功耗 | 220             | mW |
| 温度 | T <sub>OPR</sub>    | 工作温度   | -20~+60         | °C |
|    | T <sub>stg</sub>    | 存储温度   | -40~+125        | °C |
|    | T <sub>solder</sub> | 焊接温度   | 260°C, 10s      |    |

注：极限参数是指无论在任何条件下都不能超过的极限值。万一超过此极限值，将有可能造成产品劣化等物理性损伤；同时在接近极限参数下，不能全部保证芯片可以正常工作。

■ 典型应用





## ■ 电学特性

### XC6204

( $V_{IN}=V_{OUT}+1V$ ,  $C_{IN}=1\mu F \sim 10\mu F$ ,  $C_{OUT}=1\mu F \sim 10\mu F$ ,  $T_a=25^\circ C$ 。除特别指定)

| 特性             | 符号                                                   | 条件                                                          | 最小值    | 典型值                      | 最大值    | 单位            |
|----------------|------------------------------------------------------|-------------------------------------------------------------|--------|--------------------------|--------|---------------|
| 输出电压           | $V_{OUT(E)}$<br>(Note 2)                             | $I_{OUT}=40mA$ ,<br>$V_{IN}=V_{OUT}+1V$                     | X 0.98 | $V_{OUT(T)}$<br>(Note 1) | X 1.02 | V             |
| 输入电压           | $V_{IN}$                                             |                                                             |        |                          | 6.0    | V             |
| 最大输出电流         | $I_{OUTmax}$                                         | $V_{IN}=V_{OUT}+1V$                                         |        | 300                      |        | mA            |
| 负载特性           | $\Delta V_{OUT}$                                     | $V_{IN}=V_{OUT}+1V$ ,<br>$1mA \leq I_{OUT} \leq 100mA$      |        | 20                       |        | mV            |
| 压差<br>(Note 3) | $V_{dif1}$                                           | $I_{OUT}=100mA$                                             |        | 35                       |        | mV            |
|                | $V_{dif2}$                                           | $I_{OUT}=200mA$                                             |        | 280                      |        | mV            |
| 静态电流           | $I_{SS}$                                             | $V_{IN}=V_{CE}=5V$                                          |        | 25                       |        | $\mu A$       |
| 关断电流           | $I_{CEL}$                                            | $V_{CE}=0V$                                                 |        | 1                        |        | $\mu A$       |
| 电源电压调整率        | $\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$ | $I_{OUT}=40mA$<br>$V_{OUT}+1V \leq V_{IN} \leq 8V$          |        | 0.2                      |        | %/V           |
| 输出噪声           | en                                                   | $I_{OUT}=40mA$ ,<br>300Hz~50kHz                             |        | 50                       |        | $\mu V_{rms}$ |
| 纹波抑制比          | PSRR                                                 | $V_{IN}=[V_{OUT}+1]V$<br>+1Vp-pAC<br>$I_{OUT}=40mA, f=1kHz$ |        | 75                       |        | dB            |

注释: 1、 $V_{OUT(T)}$ : 规定的输出电压

2、 $V_{OUT(E)}$ : 有效输出电压 ( 即当  $I_{OUT}$  保持一定数值,  $V_{IN}=(V_{OUT(T)}+1.0V)$  时的输出电压。

3、 $V_{dif}$ :  $V_{IN1}-V_{OUT(E)'}'$

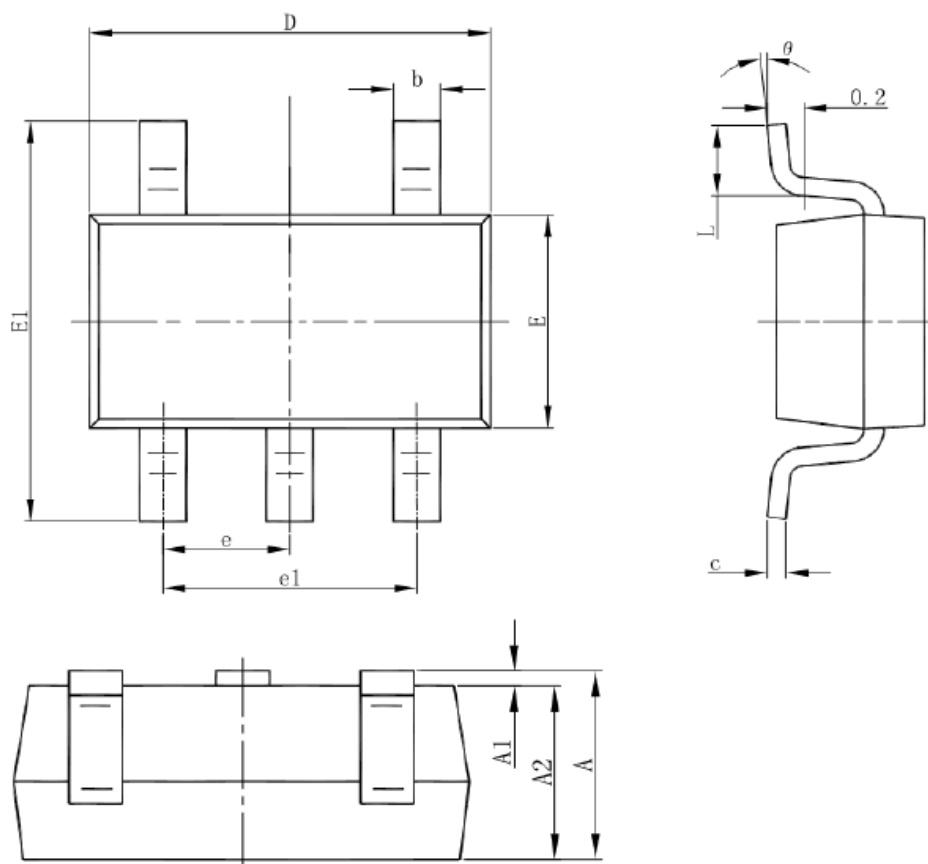
$V_{IN1}$ : 逐渐减小输入电压, 当输出电压降为  $V_{OUT(E)}$  98% 时的输入电压。

$V_{OUT(E)'}'=V_{OUT(E)} \times 98\%$ 。



## ■ 封装信息

### SOT-23-5L



| 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°    |



### Attention

- Any and all HUA XUAN YANG ELECTRONICS products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your HUA XUAN YANG ELECTRONICS representative nearest you before using any HUA XUAN YANG ELECTRONICS products described or contained herein in such applications.
- HUA XUAN YANG ELECTRONICS assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein.
- Specifications of any and all HUA XUAN YANG ELECTRONICS products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- HUA XUAN YANG ELECTRONICS CO.,LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all HUA XUAN YANG ELECTRONICS products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of HUA XUAN YANG ELECTRONICS CO.,LTD.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. HUA XUAN YANG ELECTRONICS believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the HUA XUAN YANG ELECTRONICS product that you intend to use.