

关键元器件的选用

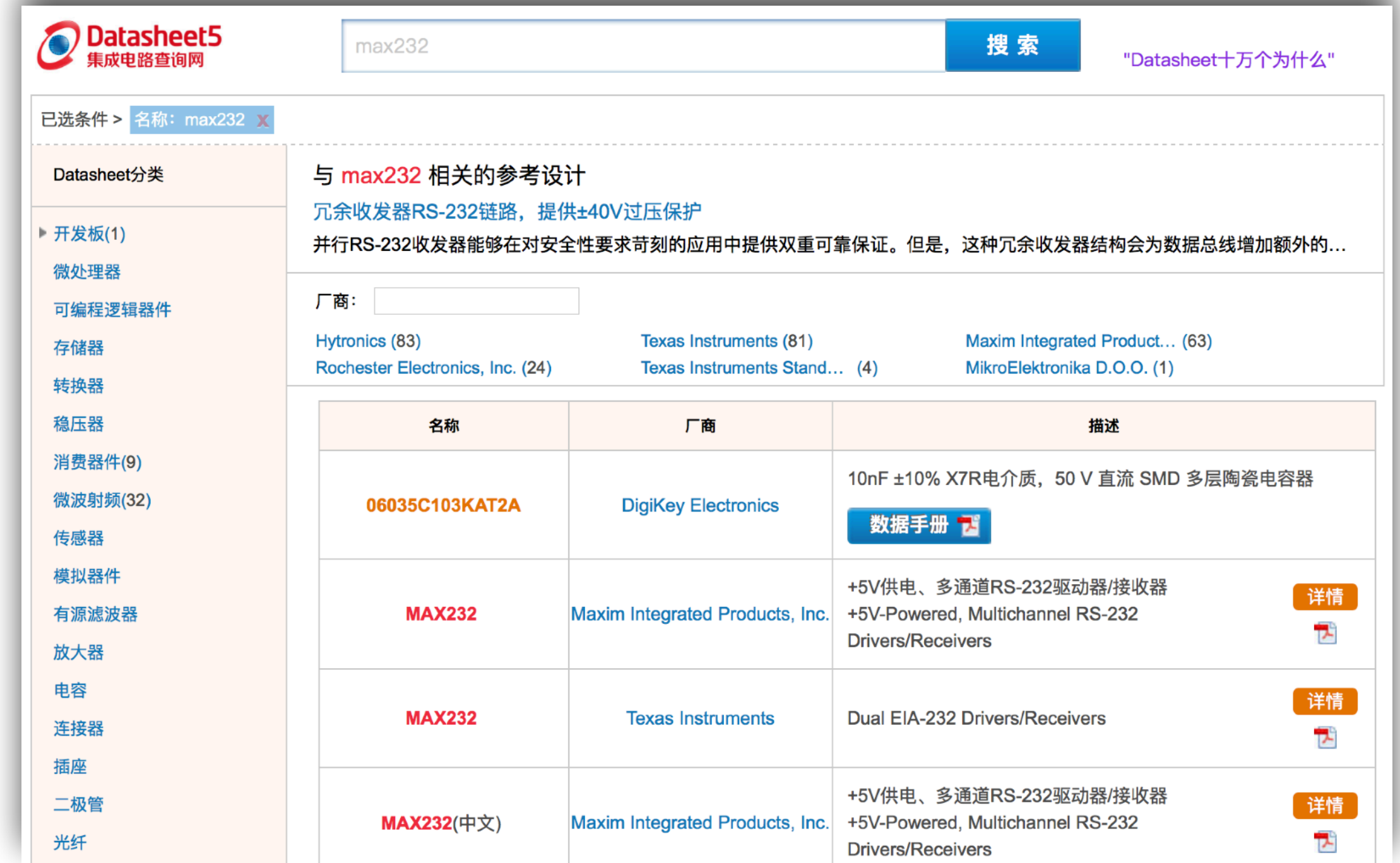
电阻、电容、电感、开关、集成电路....

元器件选用的原则

- 功能需要 - 1个或多个关键器件
- 性能满足设计要求
- 比较价格 - 同行业常用器件，系统整体成本（包括配套外围器件、加工成本）
- 供货渠道、交期、风险系数
- 封装 - 根据成本、板卡物理尺寸、功耗、接口、加工可行性
- 使用难度 - 成熟度、焊接调试、技术支持、资料、配套环境

选用渠道1 - 搜索网站

- 根据型号或关键词进行搜索
- 行业搜索网站：
 - www.datasheet5.com
 - www.alldatasheet.com
- 通用搜索引擎 - 来自多个渠道的综合信息：
 - www.bing.com
 - 翻墙访问: www.google.com



Datasheet5 集成电路查询网

max232 搜索 "Datasheet十万个为什么"

已选条件 > 名称: max232 X

Datasheet分类

- 开发板(1)
- 微处理器
- 可编程逻辑器件
- 存储器
- 转换器
- 稳压器
- 消费器件(9)
- 微波射频(32)
- 传感器
- 模拟器件
- 有源滤波器
- 放大器
- 电容
- 连接器
- 插座
- 二极管
- 光纤

与 max232 相关的参考设计

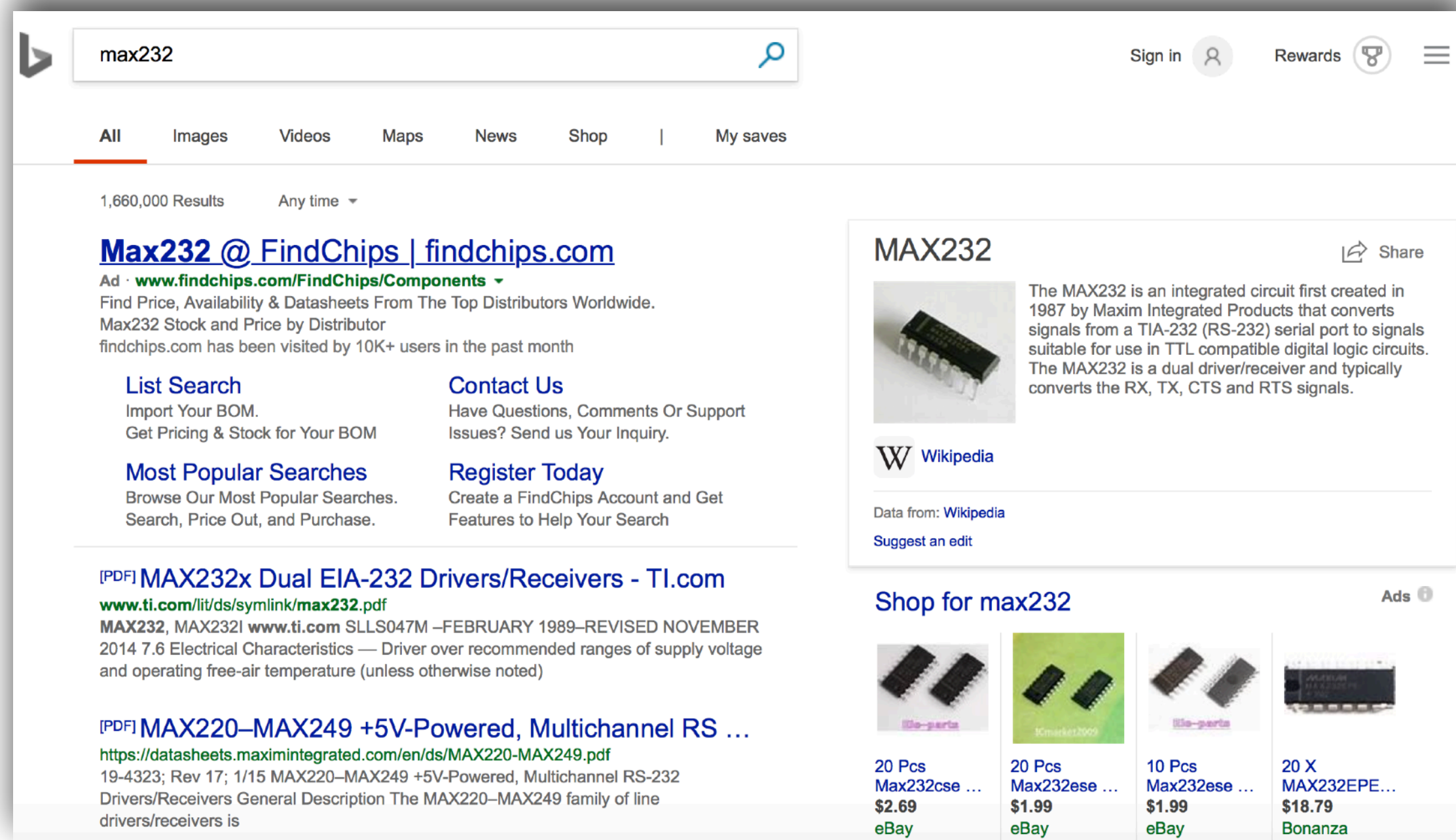
冗余收发器RS-232链路, 提供±40V过压保护

并行RS-232收发器能够在对安全性要求苛刻的应用中提供双重可靠保证。但是, 这种冗余收发器结构会为数据总线增加额外的...

厂商:

Hytronics (83) Texas Instruments (81) Maxim Integrated Product... (63)
Rochester Electronics, Inc. (24) Texas Instruments Stand... (4) MikroElektronika D.O.O. (1)

名称	厂商	描述
06035C103KAT2A	DigiKey Electronics	10nF ±10% X7R电介质, 50 V 直流 SMD 多层陶瓷电容器 数据手册
MAX232	Maxim Integrated Products, Inc.	+5V供电、多通道RS-232驱动器/接收器 +5V-Powered, Multichannel RS-232 Drivers/Receivers 详情
MAX232	Texas Instruments	Dual EIA-232 Drivers/Receivers 详情
MAX232(中文)	Maxim Integrated Products, Inc.	+5V供电、多通道RS-232驱动器/接收器 +5V-Powered, Multichannel RS-232 Drivers/Receivers 详情



max232

1,660,000 Results Any time

[Max232 @ FindChips | findchips.com](#)

Ad · www.findchips.com/FindChips/Components
Find Price, Availability & Datasheets From The Top Distributors Worldwide.
Max232 Stock and Price by Distributor
findchips.com has been visited by 10K+ users in the past month

List Search
Import Your BOM.
Get Pricing & Stock for Your BOM

Contact Us
Have Questions, Comments Or Support Issues? Send us Your Inquiry.

Most Popular Searches
Browse Our Most Popular Searches.
Search, Price Out, and Purchase.

Register Today
Create a FindChips Account and Get Features to Help Your Search

[PDF] MAX232x Dual EIA-232 Drivers/Receivers - TI.com
www.ti.com/lit/ds/symlink/max232.pdf
MAX232, MAX2321 www.ti.com SLLS047M -FEBRUARY 1989-REVISED NOVEMBER 2014 7.6 Electrical Characteristics — Driver over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted)

[PDF] MAX220-MAX249 +5V-Powered, Multichannel RS ...
<https://datasheets.maximintegrated.com/en/ds/MAX220-MAX249.pdf>
19-4323; Rev 17; 1/15 MAX220-MAX249 +5V-Powered, Multichannel RS-232 Drivers/Receivers General Description The MAX220-MAX249 family of line drivers/receivers is





MAX232

The MAX232 is an integrated circuit first created in 1987 by Maxim Integrated Products that converts signals from a TIA-232 (RS-232) serial port to signals suitable for use in TTL compatible digital logic circuits. The MAX232 is a dual driver/receiver and typically converts the RX, TX, CTS and RTS signals.

Wikipedia

Data from: Wikipedia
[Suggest an edit](#)

Shop for max232

 20 Pcs Max232cse ... \$2.69 eBay	 20 Pcs Max232ese ... \$1.99 eBay	 10 Pcs Max232ese ... \$1.99 eBay	 20 X MAX232EPE... \$18.79 Bonanza
---	--	--	---



MAX232

厂商名称: [Maxim Integrated Products, Inc.](#)

元件分类: [消费器件](#)

中文描述: +5V供电、多通道RS-232驱动器/接收器

英文描述: +5V-Powered, Multichannel RS-232 Drivers/Receivers

价格: **\$0.4805** 起订量:

[立即购买](#)

[立即下载](#)

也许您对这个元器件感兴趣: [GRM188R71H103KA01D Murata GRM 10nF ±10% X7R电介质 50 V 直流 SMD ...](#) [了解详情](#)

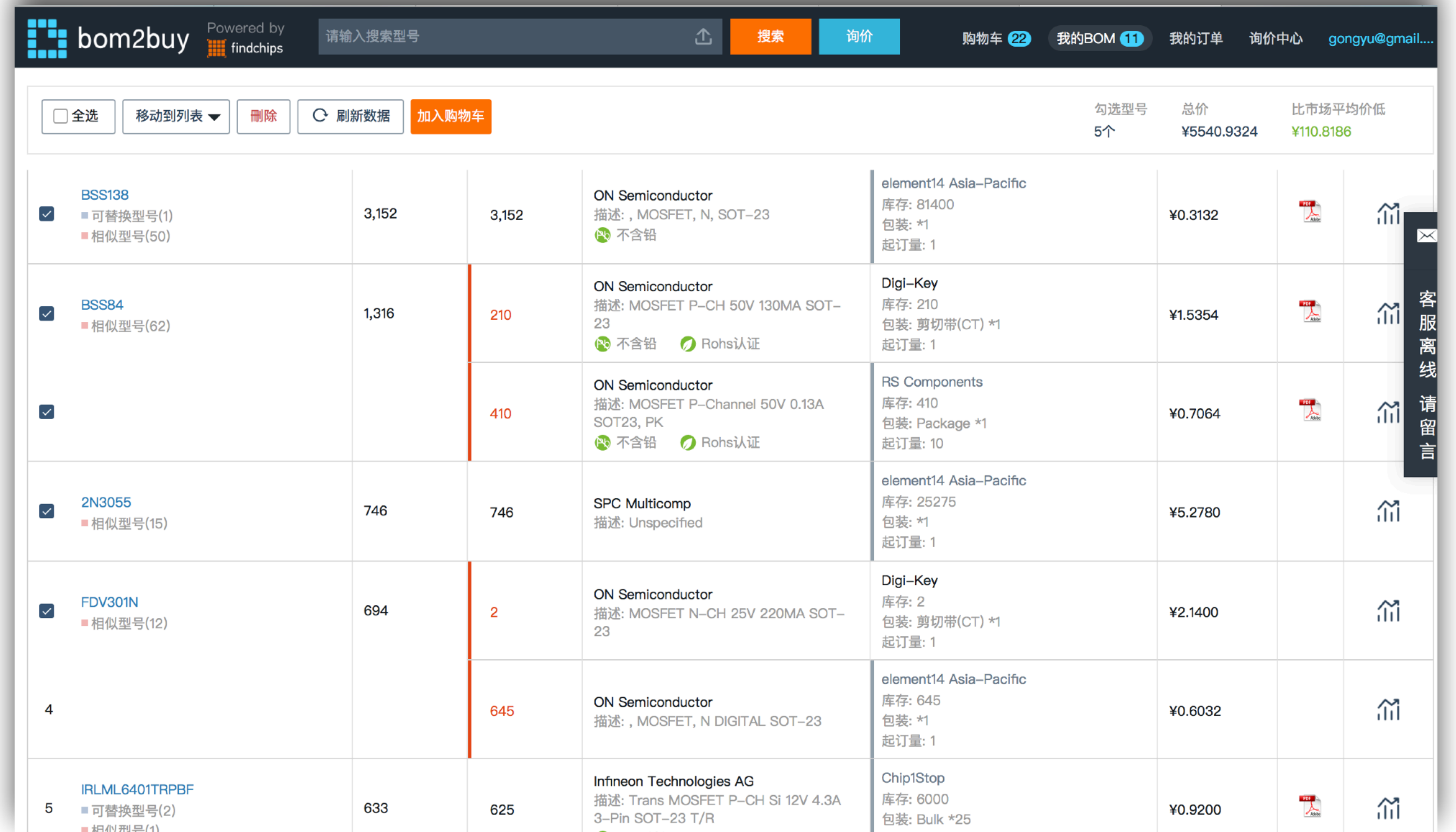
选用渠道2 - 分销商网站

- 根据型号查询
- 根据器件类别查询、根据参数过滤
- 每个分销商货品不同、价格也不同
- 现货价格、库存、参数、数据手册
- 主要分销商：

- www.digikey.com
- www.mouser.com
- www.element14.com
- www.rs-components.com
- www.arrow.com

www.bom2buy.com

- Findchips的中文版本，支持一站式交易
- 汇聚了主流现货分销商的实时库存和价格信息
- 批量器件上传，给出最佳组合购买渠道推荐
- 价格、库存、技术资料、风险系数、替代型号

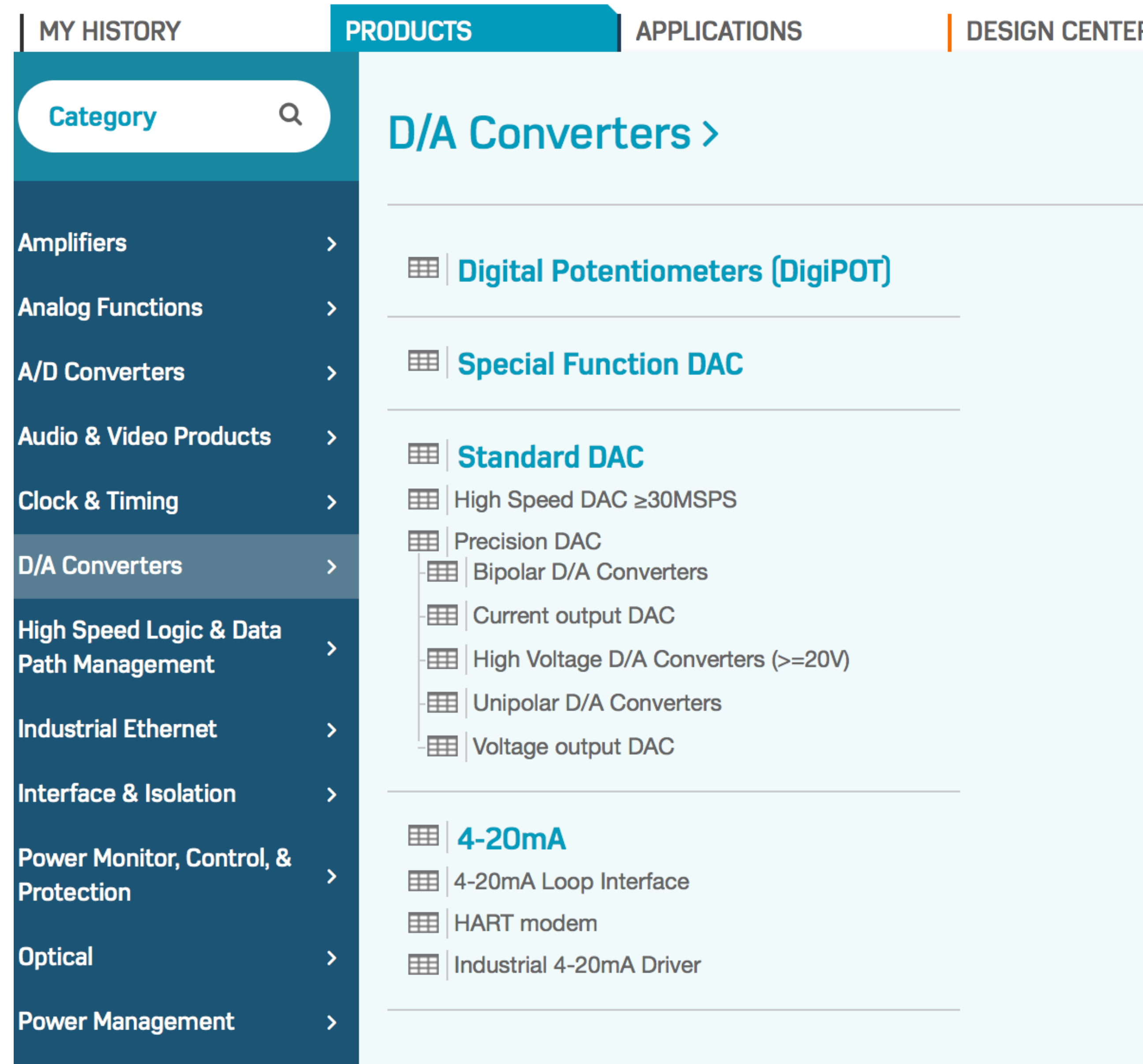


The screenshot shows the bom2buy website interface. At the top, there is a search bar with the text "请输入搜索型号" and buttons for "搜索" (Search) and "询价" (Quote). Below the search bar, there are navigation links for "购物车" (Shopping Cart), "我的BOM" (My BOM), "我的订单" (My Orders), and "询价中心" (Quote Center). The main content area displays a table of components with the following columns: "勾选型号" (Selected Part Number), "总价" (Total Price), "比市场平均价低" (Lower than Market Average Price), "描述" (Description), "库存" (Inventory), "包装" (Packaging), and "起订量" (Minimum Order Quantity). The table lists several components, including BSS138, BSS84, 2N3055, FDV301N, and IRLML6401TRPBF. A vertical sidebar on the right side of the page contains the text "客服离线 请留言" (Customer Service Offline, Please Leave a Message).

勾选型号	总价	比市场平均价低	描述	库存	包装	起订量
BSS138 可替换型号(1) 相似型号(50)	3,152	3,152	ON Semiconductor 描述: MOSFET, N, SOT-23 不含铅	element14 Asia-Pacific 库存: 81400 包装: *1 起订量: 1	¥0.3132	
BSS84 相似型号(62)	1,316	210	ON Semiconductor 描述: MOSFET P-CH 50V 130MA SOT-23 不含铅 Rohs认证	Digi-Key 库存: 210 包装: 剪切带(CT) *1 起订量: 1	¥1.5354	
		410	ON Semiconductor 描述: MOSFET P-Channel 50V 0.13A SOT23, PK 不含铅 Rohs认证	RS Components 库存: 410 包装: Package *1 起订量: 10	¥0.7064	
2N3055 相似型号(15)	746	746	SPC Multicomp 描述: Unspecified	element14 Asia-Pacific 库存: 25275 包装: *1 起订量: 1	¥5.2780	
FDV301N 相似型号(12)	694	2	ON Semiconductor 描述: MOSFET N-CH 25V 220MA SOT-23	Digi-Key 库存: 2 包装: 剪切带(CT) *1 起订量: 1	¥2.1400	
4		645	ON Semiconductor 描述: MOSFET, N DIGITAL SOT-23	element14 Asia-Pacific 库存: 645 包装: *1 起订量: 1	¥0.6032	
IRLML6401TRPBF 可替换型号(2) 相似型号(1)	633	625	Infineon Technologies AG 描述: Trans MOSFET P-CH Si 12V 4.3A 3-Pin SOT-23 T/R	Chip1Stop 库存: 6000 包装: Bulk *25 起订量: 25	¥0.9200	

选用渠道3 - 原厂官网

- 按照原厂的产品分类逐级检索
- 按照原厂的产品应用检索
- 按照器件型号进行搜索
- 好处：
 - 丰富详尽的技术资料、使用指南
 - 常用型号可以申请免费小批量的样品
 - 信息最准确



The screenshot shows the Analog Devices website navigation menu and product list. The navigation menu includes: MY HISTORY, PRODUCTS (highlighted), APPLICATIONS, and DESIGN CENTER. The PRODUCTS menu is open, showing a search bar labeled 'Category' and a list of product categories: Amplifiers, Analog Functions, A/D Converters, Audio & Video Products, Clock & Timing, D/A Converters (highlighted), High Speed Logic & Data Path Management, Industrial Ethernet, Interface & Isolation, Power Monitor, Control, & Protection, Optical, and Power Management. The D/A Converters product list includes: Digital Potentiometers (DigiPOT), Special Function DAC, Standard DAC, High Speed DAC ≥30MSPS, Precision DAC (with sub-items: Bipolar D/A Converters, Current output DAC, High Voltage D/A Converters (>=20V), Unipolar D/A Converters), Voltage output DAC, 4-20mA (with sub-items: 4-20mA Loop Interface, HART modem, Industrial 4-20mA Driver).

选用渠道4 - 媒体NPI

- 适用于原厂新推出来的产品
- 配套的板卡、市场活动、论坛
- 主要来源：

- 专业媒体的新闻报导 - www.eefocus.com
- 开发板及电子产品评测 - www.eeboard.com
- 工程师设计分享网站 - www.cirmall.com
- 在线技术培训网站 - www.moore8.com

EEFOCUS 与非网

STM32F103

搜索

全部 资讯 参考电路 板卡评测 器件采购 视频直播 技术社区 行业活动

全部 新闻 博客 资源

搜索排序 用0.015607秒找到相关内容约为390条

相关性 **基于STM32F103的水动力测控系统设计**

发布时间 系统采用意法半导体推出的STM32F103，是基于Cortex-M3内核的32位ARM芯片系列，而ZET6属于该系列的高容量芯片，片内Flash为512KB，片内SRAM为64KB，主频72MHz，具备26位地址线和16位数据宽度。系统的显示屏为翰彩4.3寸TFT液晶屏，分辨率为640&Times;480，显示屏驱动模块是SSD1963，采用了16位（5位红色，6位绿色，5...

时间筛选 全部 2017-12-25 14:58:58 www.eefocus.com

一周内

一个月内

三个月内

半年内

一年内

15天带你玩转STM32F103(实战篇)

本节我们将跟大家继续分享上节没讲完的项目经验分享，以及多个基于STM32F103的设计方案和项目开发示例，让大家结合实例，丰富设计思路。回顾上节内容 【经验分享】 STM32F103ZET6开发板DIY(附件包含原理图PCB文件) http://www.stmcu.org/module/forum/thread-582889-1-1.html STM32F103的 ...

2017-06-19 09:28:22 www.eefocus.com

本月热门搜索

- stm32
- 开发板
- 智能车
- 树莓派
- 压力传感器
- 物联网
- 单片机
- 华为
- bom2buy
- 嵌入式系统

精英STM32F103ZET6开发板

¥188.0

从图中可以看出，ALIENTEK精英STM32F103，资源丰富，并充分利用了STM32F103的内部资源，基本所有STM32F103的内部资源，都可以在此开发板上验证，同时扩充丰富的接口和功能模块，整个开发板小巧精致。ALIENTEK精英STM32F103板载资源如下：*外扩SPI FLASH：W25Q128，16M字节 2个状态指示灯（DS0：红色，DS1：绿色） 1个 ...

2018-06-06 17:07:20 | 商城 www.eeboard.com

使用Arduino IDE玩转STM32F103C8T6之开发环境搭建与LED闪烁

STM32F103C8T6最小开发板价格便宜性能超越Arduino UNO，下面介绍一下这款入门开发板的玩法这款开发板的硬件资源如下其中黄色是BOOT0和BOOT1跳线帽，旁边是重置键，下面介绍使用Arduino IDE烧写程序的方法烧写前硬件连接方法使用USB转串口线连接开发板和电脑USB，其中串口线的TX RX分布连接开发板PA10 PA9，然后将BOOT0短接...

2018-05-11 08:51:48 | 经验 | 标签: led闪烁, stm32f103c8t6, 开发环境搭建 jingyan.eeboard.com

集成DW1000 和 STM32F103的远距离UWB测距模块

UWB测距模块SKU603集成了DecaWave的DW1000超宽带UWB收发器IC和GD32F130G8U6 MCU。该模块将天线，所有RF电路，电源管理和时钟电路集成在一个模块中。为了节省模块处于静态时的模块功耗，该模块集成了一个三轴线性加速度计。它可用于双向测距或TDOA定位系统，以将资产定位到10厘米的精度，并支持高达6.8 Mbps的数据传输速率。...

2018-03-12 16:04:09 | 论坛 www.eeboard.com

STM32F103C8T6最小系统板PCB工程文件

免费

STM32F103C8T6单片机最小系统板，板载了基于MCU的最基本电路，如晶振电路、USB电源管理电路和USB接口等。该STM32F103C8T6核心板引出了所有的I/O口资源，带有SWD仿真调试下载接口。附件资料截图：

2018-06-04 14:42:53 | MCU开发板 | 标签: stm32f103c8t6, 系统板 | 296 | 42 www.cirmall.com

Mini版stm32f103RCT6开发板电路设计（增加安装孔）

¥10.0

本项目是基于stm32f103RCT6芯片设计的STM32开发板小系统板。说明：允许商业使用或修改PCB，而无需经过我的授权，但是请保留署名作者的权力。Mini版stm32f103RCT6开发板电路 PCB 3D截图：附件内容截图：

2018-04-26 15:49:55 | MCU开发板 | 标签: stm32f103, 单片机 | 544 | 3 www.cirmall.com

STM32制作的PLC光耦隔离输出输入STM32F103Rxt6 数字IO 原理图/...

免费

该图纸为免费图纸保护PCB图纸和原理图，altium 18 绘制，免费商品不做技术支持。

2018-04-10 09:17:55 | 工业控制 | 标签: plc控制板原理图, plc控制源码 | 1046 | 125 www.cirmall.com

倒车系统设计倒车影像和超声波距离检测源码（STM32F103ZET6精英...

免费

利用正点原子的精英板，芯片是STM32F103ZET6摄像头是OV7670(带FIFO)超声波模块HC-SR04，连线如下VCC->5VTrig->PE5 Echo->PA0GND->GND

STM32F103xx系列微控制器教程

课程简介：本教程介绍了ST（意法半导体）公司基于Cortex-M3的STM32F103xx系列微控制器，教程共分16章节进行讲解。帮助初次接触STM32F103xx的学习者了解该平台的特性和开发环境。本课程讲师:moore8user1

2013-11-15 14:53:15 | 线上课程 www.moore8.com

幻彩灯驱动教程第一讲：基于STM32F103的幻彩灯驱动程序编写

本节课讲基于STM32的幻彩灯的驱动程序编写，在实现驱动程序之后会设计几个简单的闪烁模式并实现。本课程讲师:西安小马哥

2017-05-08 09:32:20 | 线上课程 www.moore8.com

STM32F4与STM32L4系列功耗对比分析与测试

2012年开始接触并使用ST的微控制器（主要有STM8L 和STM32F103系列），从事低功耗产品设计和研发工作，平时利用空余时间喜欢捣腾一些电子产品并根据需要做些简单的PC端软件。课程课件下载：链接：http://pan.baidu.com/s/1o77WQYA 密码：7ga8资料下载：ST M32 L4单片机官方介绍及资源下载STM32 F4单片机官方介绍及资源下载时...

2016-12-12 15:13:40 | 线上课程 www.moore8.com

其它渠道

- 前期项目和团队选用的器件 - 风险最小，但会偏于保守
- 其它产品的参考、借鉴
- 原厂或分销商市场/FAE推荐 - 活动介绍或线下拜访，新产品替代有风险
- 技术论坛交流、QQ群、微信群

技术资料阅读及关键信息获取

元器件数据手册的利用

- 认真阅读元器件相应的数据手册
- 确定是最终的官方版本的数据手册 (www.datasheet5.com)
- 参考原厂提供的参考设计的原理图库、连接方式
- 严格按照数据手册中提供的封装信息进行PCB封装库的构建，一个器件一般会有多个不同的封装，元器件型号 (Part number) 要对应于器件的正确封装信息
- 尤其注意电源、时钟管脚、差分信号等的连接需求

基本信息汇总 - 第一页

- 型号、基本描述
- 功能、特性
- 应用
- 功能框图
- 封装信息

FEATURES

- Ultralow power:** as low as 23 μA in measurement mode and 0.1 μA in standby mode at $V_s = 2.5\text{ V}$ (typical)
- Power consumption scales automatically with bandwidth**
- User-selectable resolution**
 - Fixed 10-bit resolution
 - Full resolution, where resolution increases with g range, up to 13-bit resolution at $\pm 16\text{ g}$ (maintaining 4 mg/LSB scale factor in all g ranges)
- Embedded memory management system with FIFO technology** minimizes host processor load
- Single tap/double tap detection**
- Activity/inactivity monitoring**
- Free-fall detection**
- Supply voltage range:** 2.0 V to 3.6 V
- I/O voltage range:** 1.7 V to V_s
- SPI (3- and 4-wire) and I²C digital interfaces**
- Flexible interrupt modes mappable to either interrupt pin**
- Measurement ranges selectable via serial command**
- Bandwidth selectable via serial command**
- Wide temperature range** (-40°C to $+85^\circ\text{C}$)
- 10,000 g shock survival**
- Pb free/RoHS compliant**
- Small and thin:** 3 mm \times 5 mm \times 1 mm LGA package

APPLICATIONS

- Handsets
- Medical instrumentation
- Gaming and pointing devices
- Industrial instrumentation
- Personal navigation devices
- Hard disk drive (HDD) protection

GENERAL DESCRIPTION

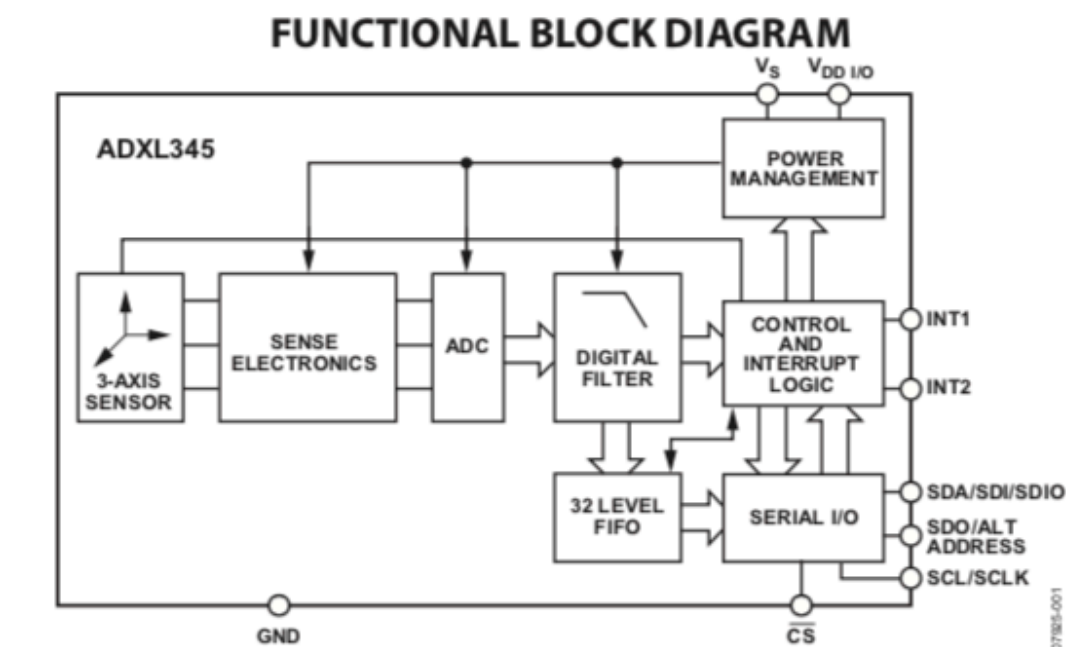
The ADXL345 is a small, thin, ultralow power, 3-axis accelerometer with high resolution (13-bit) measurement at up to $\pm 16\text{ g}$. Digital output data is formatted as 16-bit twos complement and is accessible through either a SPI (3- or 4-wire) or I²C digital interface.

The ADXL345 is well suited for mobile device applications. It measures the static acceleration of gravity in tilt-sensing applications, as well as dynamic acceleration resulting from motion or shock. Its high resolution (3.9 mg/LSB) enables measurement of inclination changes less than 1.0° .

Several special sensing functions are provided. Activity and inactivity sensing detect the presence or lack of motion by comparing the acceleration on any axis with user-set thresholds. Tap sensing detects single and double taps in any direction. Free-fall sensing detects if the device is falling. These functions can be mapped individually to either of two interrupt output pins. An integrated memory management system with a 32-level first in, first out (FIFO) buffer can be used to store data to minimize host processor activity and lower overall system power consumption.

Low power modes enable intelligent motion-based power management with threshold sensing and active acceleration measurement at extremely low power dissipation.

The ADXL345 is supplied in a small, thin, 3 mm \times 5 mm \times 1 mm, 14-lead, plastic package.



Rev. E

Document Feedback

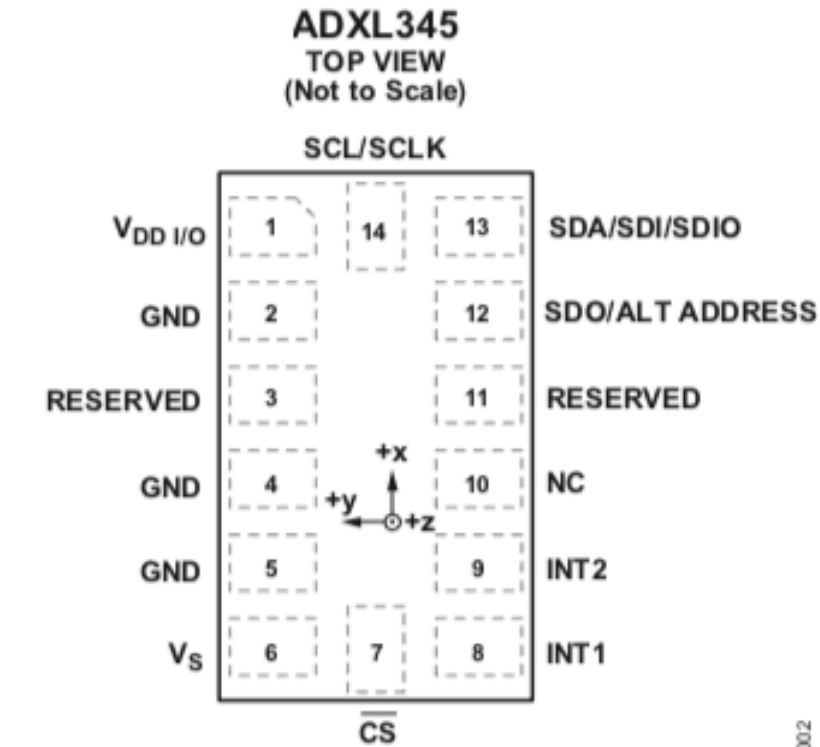
Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 781.329.4700 ©2009–2015 Analog Devices, Inc. All rights reserved.
Technical Support www.analog.com

管脚定义

- 管脚编号
- 每个管脚的功能
- 物理上的排列方式
- 注意不同的封装其定义不同
- 管脚1的位置
- 散热/接地管脚
- Vcc、Vdd、Vs、CLK、CLR、NC
- 低电平有效

PIN CONFIGURATION AND FUNCTION DESCRIPTIONS



NOTES
1. NC = NO INTERNAL CONNECTION.

Figure 3. Pin Configuration (Top View)

Table 5. Pin Function Descriptions

Pin No.	Mnemonic	Description
1	V _{DD I/O}	Digital Interface Supply Voltage.
2	GND	This pin must be connected to ground.
3	RESERVED	Reserved. This pin must be connected to V _S or left open.
4	GND	This pin must be connected to ground.
5	GND	This pin must be connected to ground.
6	V _S	Supply Voltage.
7	$\overline{\text{CS}}$	Chip Select.
8	INT1	Interrupt 1 Output.
9	INT2	Interrupt 2 Output.
10	NC	Not Internally Connected.
11	RESERVED	Reserved. This pin must be connected to ground or left open.
12	SDO/ALT ADDRESS	Serial Data Output (SPI 4-Wire)/Alternate I ² C Address Select (I ² C).
13	SDA/SDI/SDIO	Serial Data (I ² C)/Serial Data Input (SPI 4-Wire)/Serial Data Input and Output (SPI 3-Wire).
14	SCL/SCLK	Serial Communications Clock. SCL is the clock for I ² C, and SCLK is the clock for SPI.

极限工作和推荐工作条件

ABSOLUTE MAXIMUM RATINGS

Table 2.

Parameter	Rating
Acceleration	
Any Axis, Unpowered	10,000 g
Any Axis, Powered	10,000 g
V _S	−0.3 V to +3.9 V
V _{DD I/O}	−0.3 V to +3.9 V
Digital Pins	−0.3 V to V _{DD I/O} + 0.3 V or 3.9 V, whichever is less
All Other Pins	−0.3 V to +3.9 V
Output Short-Circuit Duration (Any Pin to Ground)	Indefinite
Temperature Range	
Powered	−40°C to +105°C
Storage	−40°C to +105°C

Stresses at or above those listed under Absolute Maximum Ratings may cause permanent damage to the product. This is a stress rating only; functional operation of the product at these or any other conditions above those indicated in the operational section of this specification is not implied. Operation beyond the maximum operating conditions for extended periods may affect product reliability.

SPECIFICATIONS

T_A = 25°C, V_S = 2.5 V, V_{DD I/O} = 1.8 V, acceleration = 0 g, C_S = 10 μF tantalum, C_{I/O} = 0.1 μF, output data rate (ODR) = 800 Hz, unless otherwise noted. All minimum and maximum specifications are guaranteed. Typical specifications are not guaranteed.

Table 1.

Parameter	Test Conditions	Min	Typ ¹	Max	Unit
SENSOR INPUT					
Measurement Range	Each axis User selectable		±2, ±4, ±8, ±16		g
Nonlinearity	Percentage of full scale		±0.5		%
Inter-Axis Alignment Error			±0.1		Degrees
Cross-Axis Sensitivity ²			±1		%
OUTPUT RESOLUTION					
All g Ranges	Each axis 10-bit resolution		10		Bits
±2 g Range	Full resolution		10		Bits
±4 g Range	Full resolution		11		Bits
±8 g Range	Full resolution		12		Bits
±16 g Range	Full resolution		13		Bits
SENSITIVITY					
Sensitivity at X _{OUT} , Y _{OUT} , Z _{OUT}					
	All g-ranges, full resolution	230	256	282	LSB/g
	±2 g, 10-bit resolution	230	256	282	LSB/g
	±4 g, 10-bit resolution	115	128	141	LSB/g
	±8 g, 10-bit resolution	57	64	71	LSB/g
	±16 g, 10-bit resolution	29	32	35	LSB/g
Sensitivity Deviation from Ideal					
	All g-ranges		±1.0		%
Scale Factor at X _{OUT} , Y _{OUT} , Z _{OUT}					
	All g-ranges, full resolution	3.5	3.9	4.3	mg/LSB
	±2 g, 10-bit resolution	3.5	3.9	4.3	mg/LSB
	±4 g, 10-bit resolution	7.1	7.8	8.7	mg/LSB
	±8 g, 10-bit resolution	14.1	15.6	17.5	mg/LSB
	±16 g, 10-bit resolution	28.6	31.2	34.5	mg/LSB
Sensitivity Change Due to Temperature					
			±0.01		%/°C
0 g OFFSET					
0 g Output for X _{OUT} , Y _{OUT}					
		−150	0	+150	mg
0 g Output for Z _{OUT}					
		−250	0	+250	mg
0 g Output Deviation from Ideal, X _{OUT} , Y _{OUT}					
			±35		mg
0 g Output Deviation from Ideal, Z _{OUT}					
			±40		mg
0 g Offset vs. Temperature for X-, Y-Axes					
			±0.4		mg/°C
0 g Offset vs. Temperature for Z-Axis					
			±1.2		mg/°C
NOISE					
X-, Y-Axes					
	ODR = 100 Hz for ±2 g, 10-bit resolution or all g-ranges, full resolution		0.75		LSB rms
Z-Axis					
	ODR = 100 Hz for ±2 g, 10-bit resolution or all g-ranges, full resolution		1.1		LSB rms
OUTPUT DATA RATE AND BANDWIDTH					
Output Data Rate (ODR) ^{3,4,5}	User selectable	0.1		3200	Hz
SELF-TEST⁶					
Output Change in X-Axis					
		0.20		2.10	g
Output Change in Y-Axis					
		−2.10		−0.20	g
Output Change in Z-Axis					
		0.30		3.40	g
POWER SUPPLY					
Operating Voltage Range (V _S)					
		2.0	2.5	3.6	V
Interface Voltage Range (V _{DD I/O})					
		1.7	1.8	V _S	V
Supply Current					
	ODR ≥ 100 Hz		140		μA
	ODR < 10 Hz		30		μA
Standby Mode Leakage Current					
			0.1		μA
Turn-On and Wake-Up Time ⁷					
	ODR = 3200 Hz		1.4		ms

关键性能和各参数之间的曲线

- 参数变量之间的关系
- 电流 vs 电压
- 灵敏度 vs 温度
- 要让器件工作在“安全区”

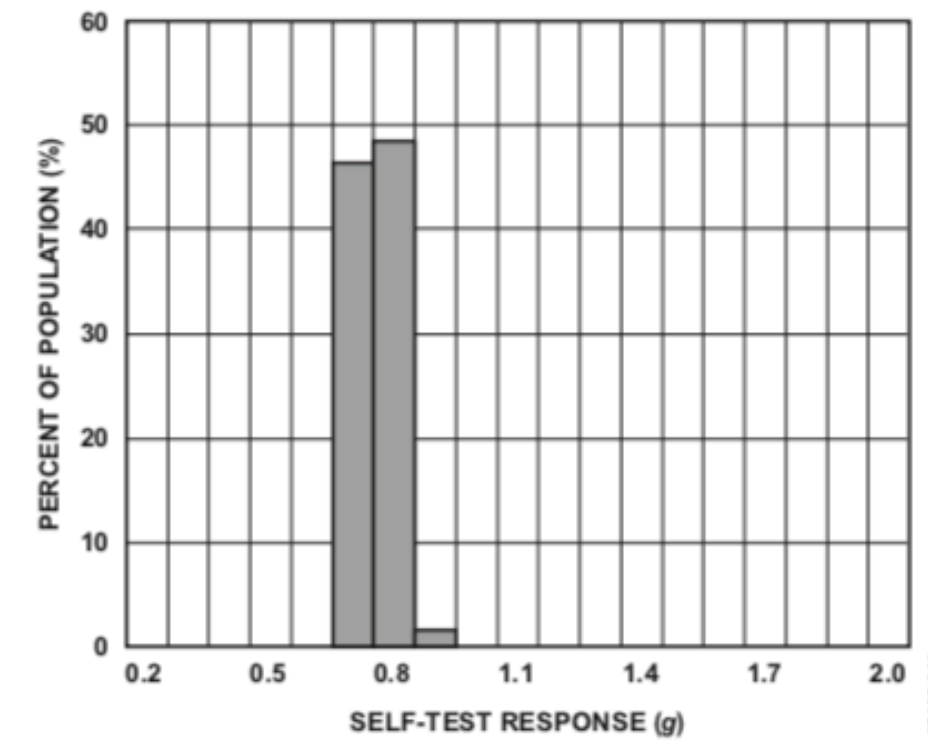


Figure 28. X-Axis Self-Test Response at 25°C, $V_S = 2.5 V$

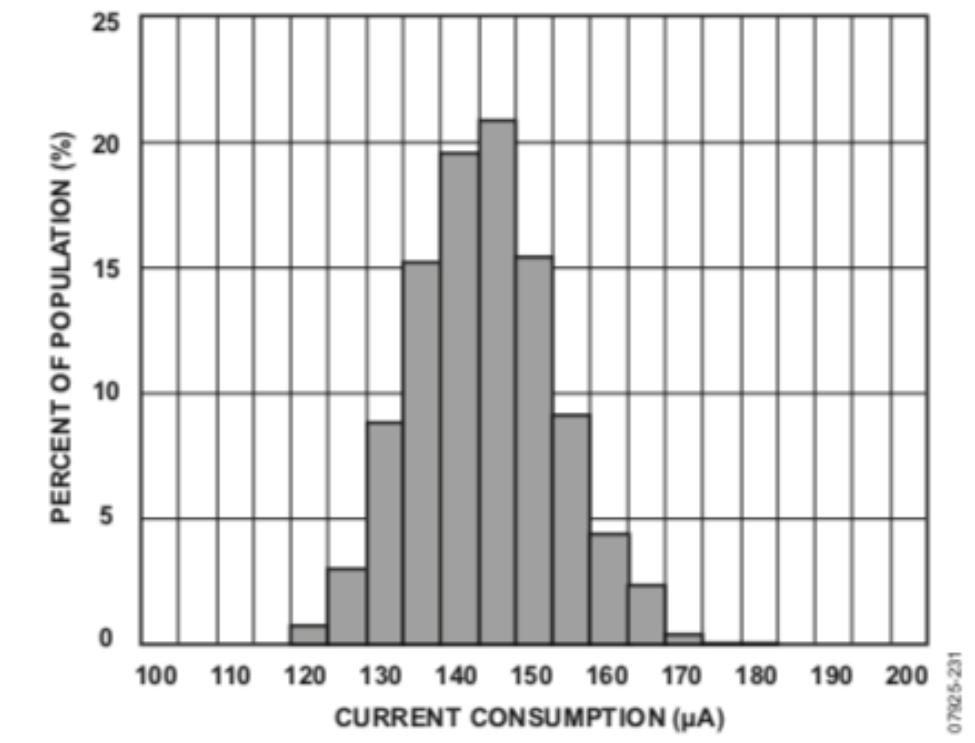


Figure 31. Current Consumption at 25°C, 100 Hz Output Data Rate, $V_S = 2.5 V$

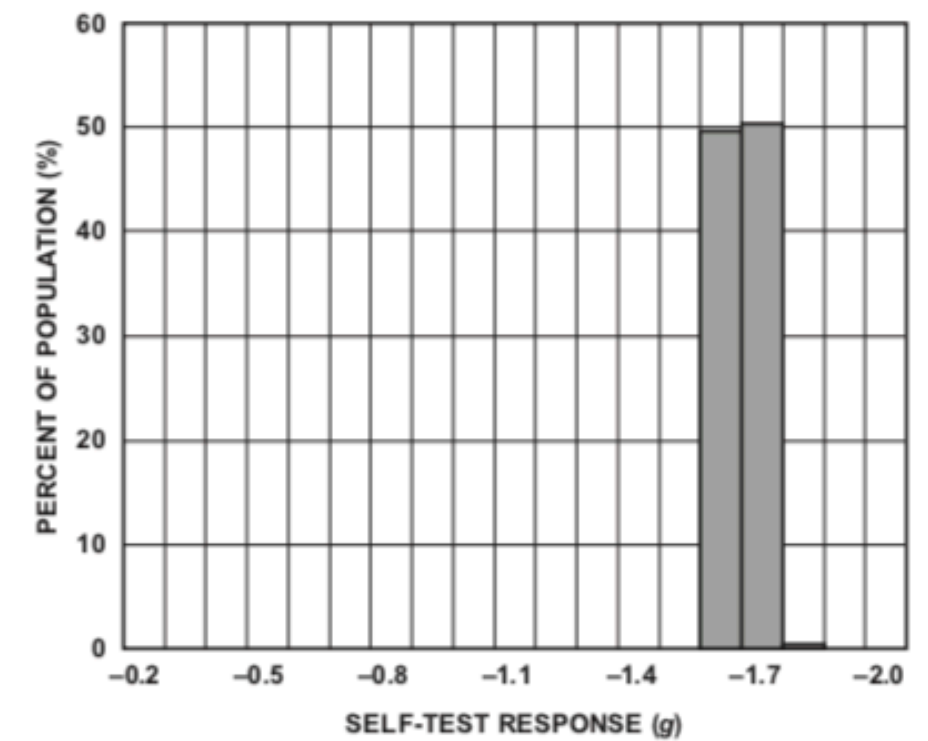


Figure 29. Y-Axis Self-Test Response at 25°C, $V_S = 2.5 V$

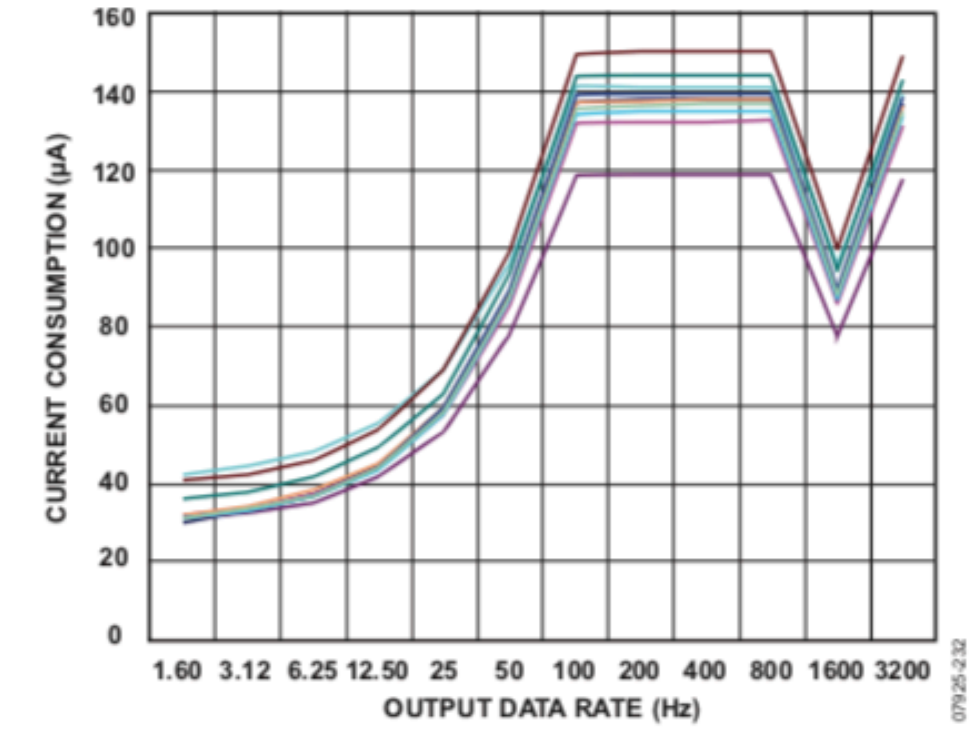


Figure 32. Current Consumption vs. Output Data Rate at 25°C—10 Parts, $V_S = 2.5 V$

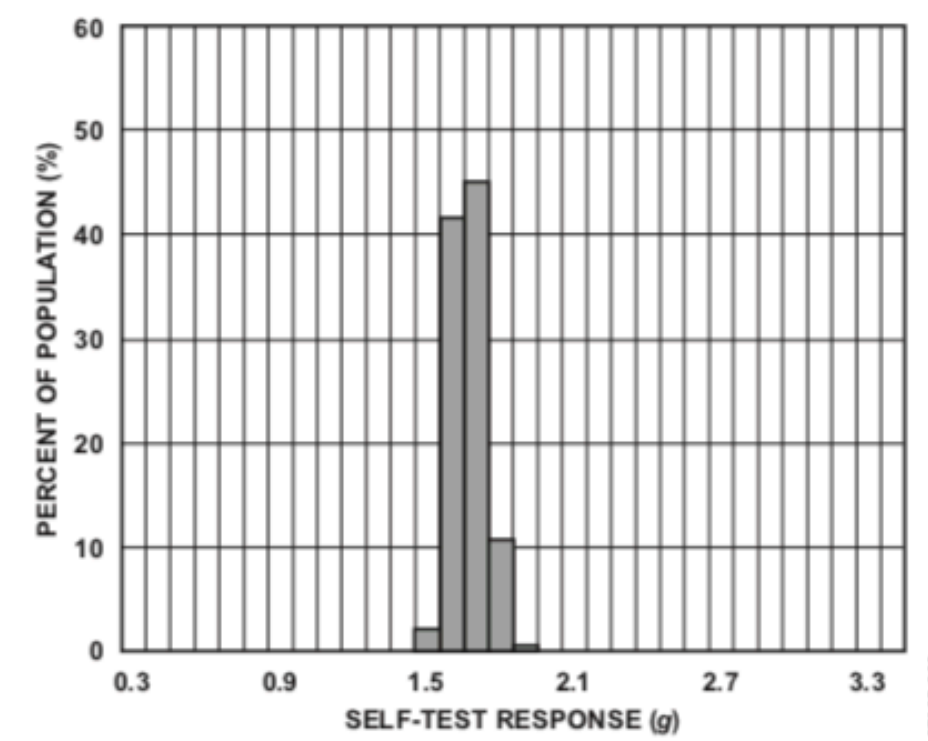


Figure 30. Z-Axis Self-Test Response at 25°C, $V_S = 2.5 V$

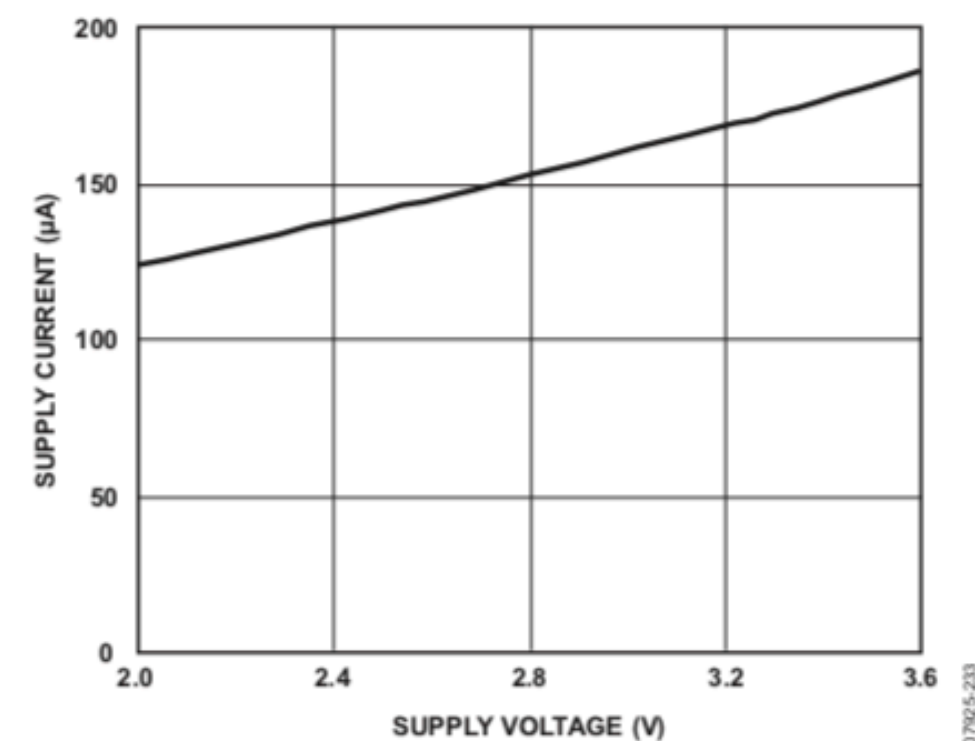


Figure 33. Supply Current vs. Supply Voltage, V_S at 25°C

应用中要特别注意的地方

- 供电
- 接地
- 时钟
- 物理连接

APPLICATIONS INFORMATION

POWER SUPPLY DECOUPLING

A 1 μF tantalum capacitor (C_S) at V_S and a 0.1 μF ceramic capacitor ($C_{I/O}$) at $V_{DD\ I/O}$ placed close to the ADXL345 supply pins is recommended to adequately decouple the accelerometer from noise on the power supply. If additional decoupling is necessary, a resistor or ferrite bead, no larger than 100 Ω , in series with V_S may be helpful. Additionally, increasing the bypass capacitance on V_S to a 10 μF tantalum capacitor in parallel with a 0.1 μF ceramic capacitor may also improve noise.

Care should be taken to ensure that the connection from the ADXL345 ground to the power supply ground has low impedance because noise transmitted through ground has an effect similar to noise transmitted through V_S . It is recommended that V_S and $V_{DD\ I/O}$ be separate supplies to minimize digital clocking noise on the V_S supply. If this is not possible, additional filtering of the supplies, as previously mentioned, may be necessary.

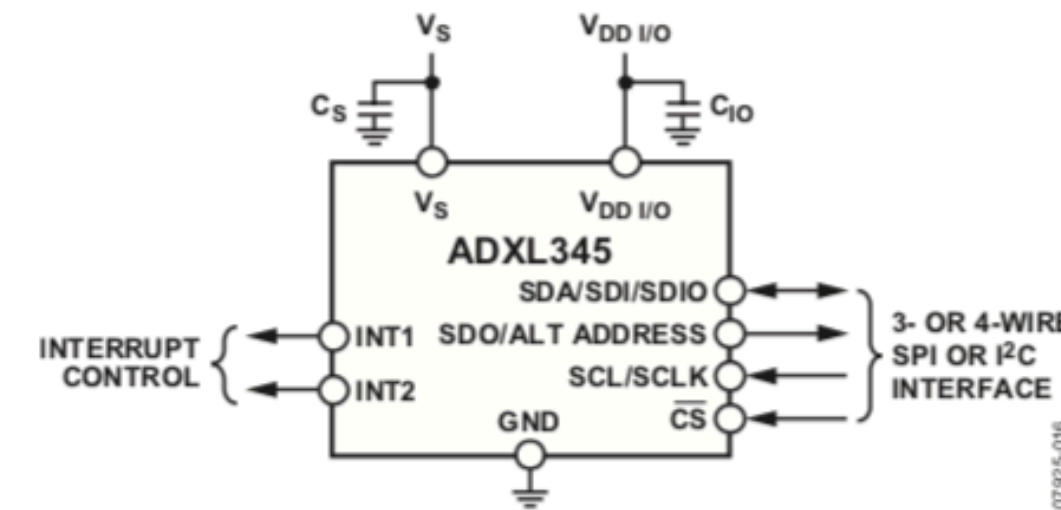


Figure 44. Application Diagram

MECHANICAL CONSIDERATIONS FOR MOUNTING

The ADXL345 should be mounted on the PCB in a location close to a hard mounting point of the PCB to the case. Mounting the ADXL345 at an unsupported PCB location, as shown in Figure 45, may result in large, apparent measurement errors due to undamped PCB vibration. Locating the accelerometer near a hard mounting point ensures that any PCB vibration at the accelerometer is above the accelerometer's mechanical sensor resonant frequency and, therefore, effectively invisible to the accelerometer. Multiple mounting points, close to the sensor, and/or a thicker PCB also help to reduce the effect of system resonance on the performance of the sensor.

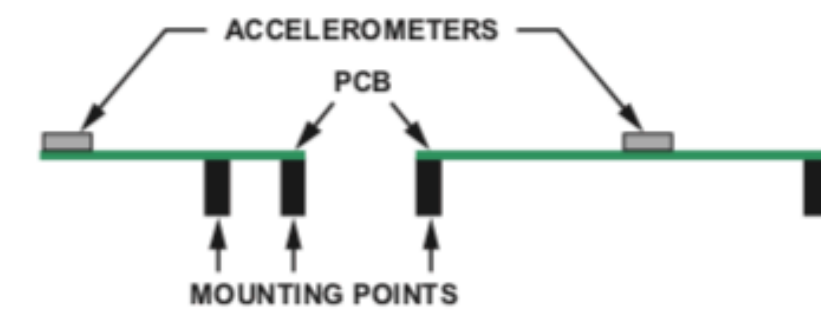


Figure 45. Incorrectly Placed Accelerometers

TAP DETECTION

The tap interrupt function is capable of detecting either single or double taps. The following parameters are shown in Figure 46 for a valid single and valid double tap event:

- The tap detection threshold is defined by the THRESH_TAP register (Address 0x1D).
- The maximum tap duration time is defined by the DUR register (Address 0x21).
- The tap latency time is defined by the latent register (Address 0x22) and is the waiting period from the end of the first tap until the start of the time window, when a second tap can be detected, which is determined by the value in the window register (Address 0x23).
- The interval after the latency time (set by the latent register) is defined by the window register. Although a second tap must begin after the latency time has expired, it need not finish before the end of the time defined by the window register.

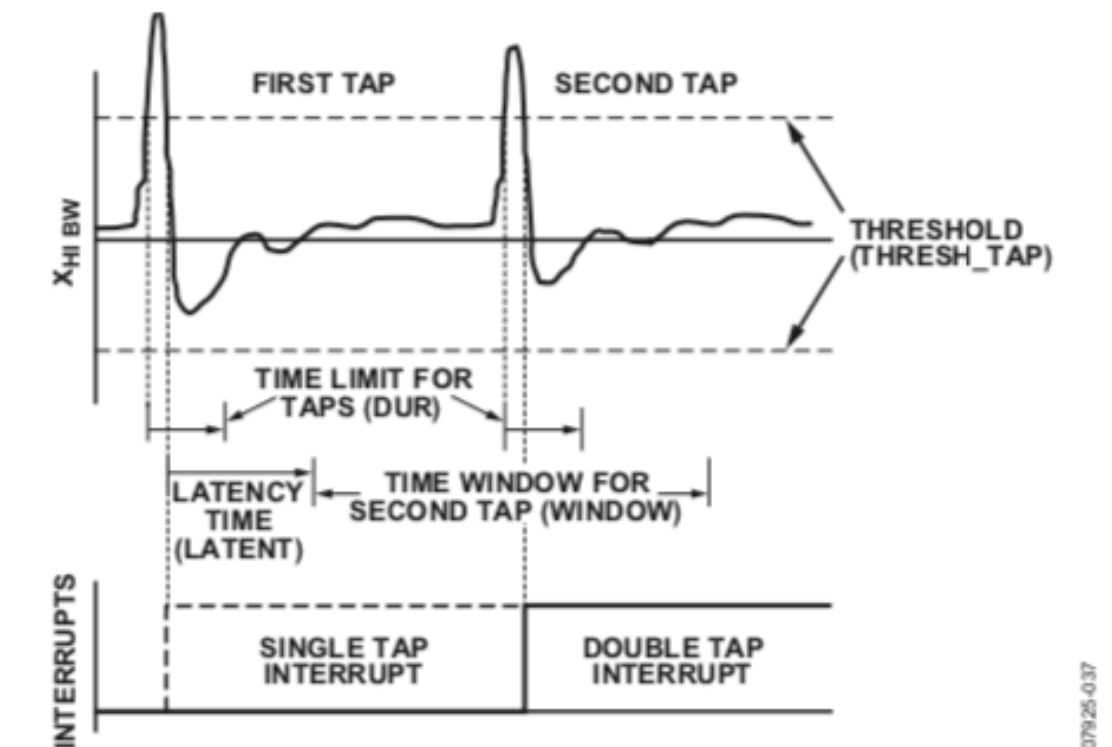


Figure 46. Tap Interrupt Function with Valid Single and Double Taps

If only the single tap function is in use, the single tap interrupt is triggered when the acceleration goes below the threshold, as long as DUR has not been exceeded. If both single and double tap functions are in use, the single tap interrupt is triggered when the double tap event has been either validated or invalidated.

封装信息

- 制作PCB封装库的重要参考
- 注意Pin1的位置
- 注意其焊盘的大小
- 一般在Datasheet的最后面
- 不同的封装对应不同的型号尾标
- 不同的温度范围/应用级别也对应不同的型号尾标

OUTLINE DIMENSIONS

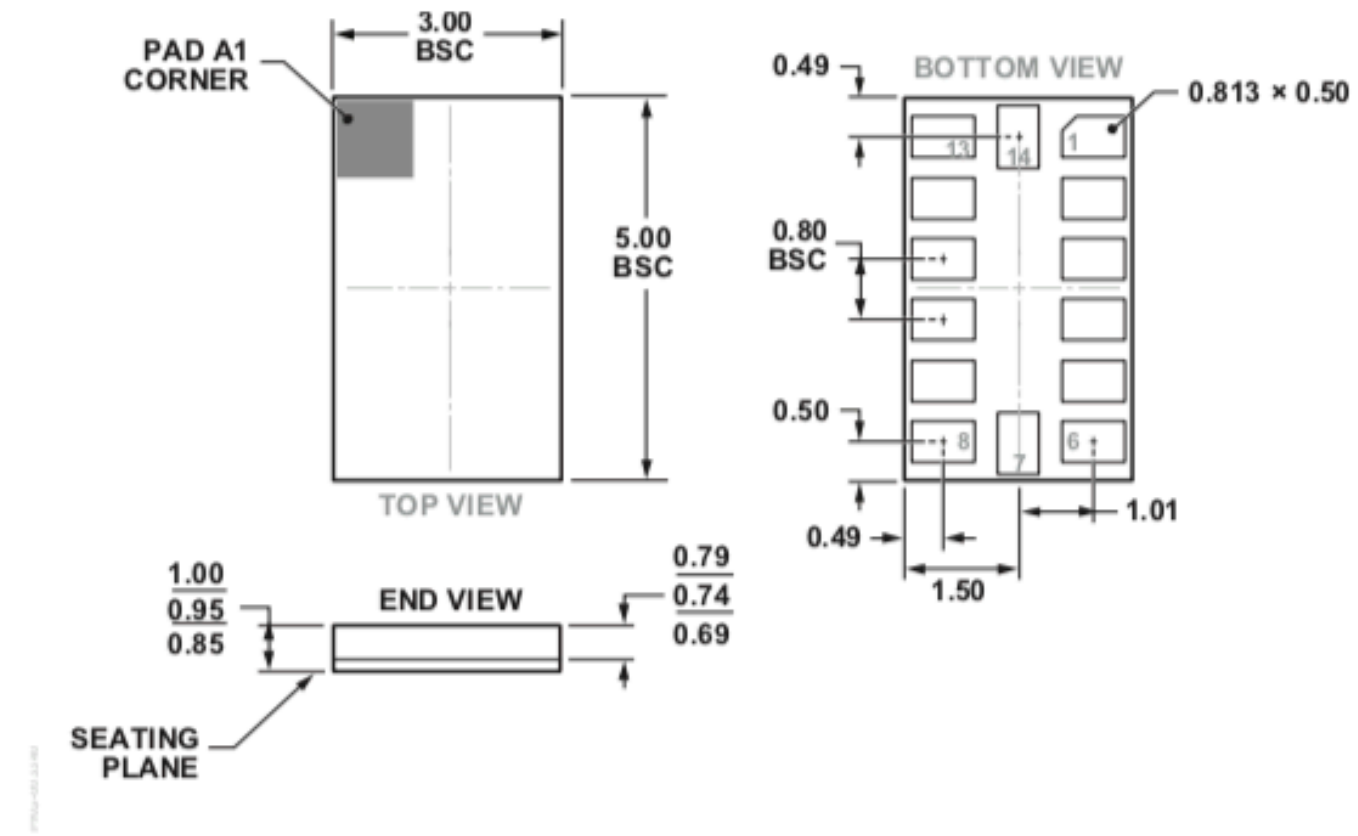


Figure 61. 14-Terminal Land Grid Array [LGA]
(CC-14-1)
Solder Terminations Finish Is Au over Ni
Dimensions shown in millimeters

ORDERING GUIDE

Model ¹	Measurement Range (g)	Specified Voltage (V)	Temperature Range	Package Description	Package Option
ADXL345BCCZ	±2, ±4, ±8, ±16	2.5	-40°C to +85°C	14-Terminal Land Grid Array [LGA]	CC-14-1
ADXL345BCCZ-RL	±2, ±4, ±8, ±16	2.5	-40°C to +85°C	14-Terminal Land Grid Array [LGA]	CC-14-1
ADXL345BCCZ-RL7	±2, ±4, ±8, ±16	2.5	-40°C to +85°C	14-Terminal Land Grid Array [LGA]	CC-14-1
EVAL-ADXL345Z				Evaluation Board	
EVAL-ADXL345Z-DB				Evaluation Board	
EVAL-ADXL345Z-M				Analog Devices Inertial Sensor Evaluation System, Includes ADXL345 Satellite	
EVAL-ADXL345Z-S				ADXL345 Satellite, Standalone	

¹ Z = RoHS Compliant Part.

Parameter	Limit ^{1,2}		Unit	Description
	Min	Max		
f_{SCL}		400	kHz	SCL clock frequency
t_1	2.5		μ s	SCL cycle time
t_2	0.6		μ s	t_{HIGH} , SCL high time
t_3	1.3		μ s	t_{LOW} , SCL low time
t_4	0.6		μ s	$t_{HD, STA}$, start/repeated start condition hold time
t_5	100		ns	$t_{SU, DAT}$, data setup time
$t_6^{3,4,5,6}$	0	0.9	μ s	$t_{HD, DAT}$, data hold time
t_7	0.6		μ s	$t_{SU, STA}$, setup time for repeated start
t_8	0.6		μ s	$t_{SU, STO}$, stop condition setup time
t_9	1.3		μ s	t_{BUF} , bus-free time between a stop condition and a start condition
t_{10}		300	ns	t_R , rise time of both SCL and SDA when receiving
	0		ns	t_R , rise time of both SCL and SDA when receiving or transmitting
t_{11}		300	ns	t_F , fall time of SDA when receiving
		250	ns	t_F , fall time of both SCL and SDA when transmitting
C_b		400	pF	Capacitive load for each bus line

¹ Limits based on characterization results, with $f_{SCL} = 400$ kHz and a 3 mA sink current; not production tested.

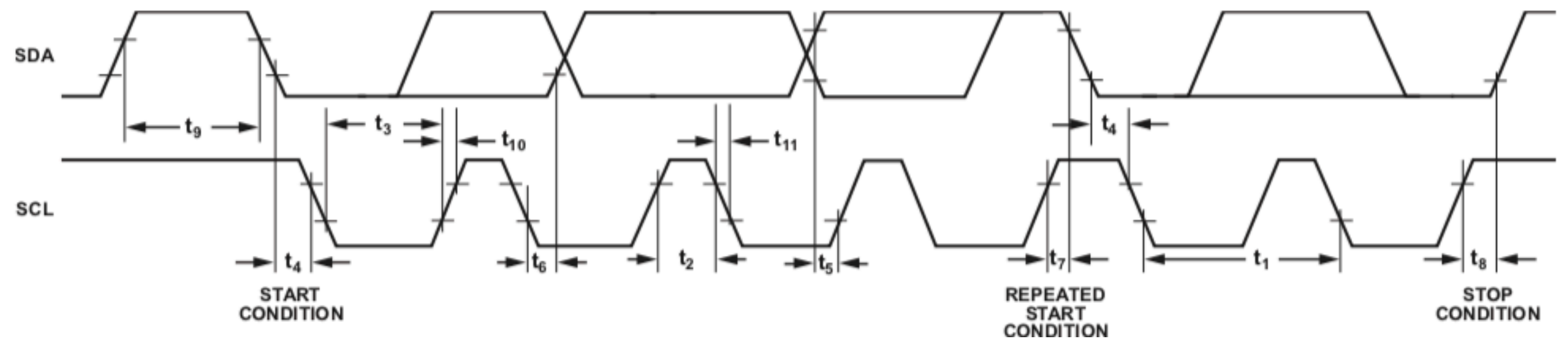
² All values referred to the V_{IH} and the V_{IL} levels given in Table 11.

³ t_6 is the data hold time that is measured from the falling edge of SCL. It applies to data in transmission and acknowledge.

⁴ A transmitting device must internally provide an output hold time of at least 300 ns for the SDA signal (with respect to $V_{IH(min)}$ of the SCL signal) to bridge the undefined region of the falling edge of SCL.

⁵ The maximum t_6 value must be met only if the device does not stretch the low period (t_3) of the SCL signal.

⁶ The maximum value for t_6 is a function of the clock low time (t_3), the clock rise time (t_{10}), and the minimum data setup time ($t_{5(min)}$). This value is calculated as $t_{6(max)} = t_3 - t_{10} - t_{5(min)}$.



参考连接方式及相应的时序要求

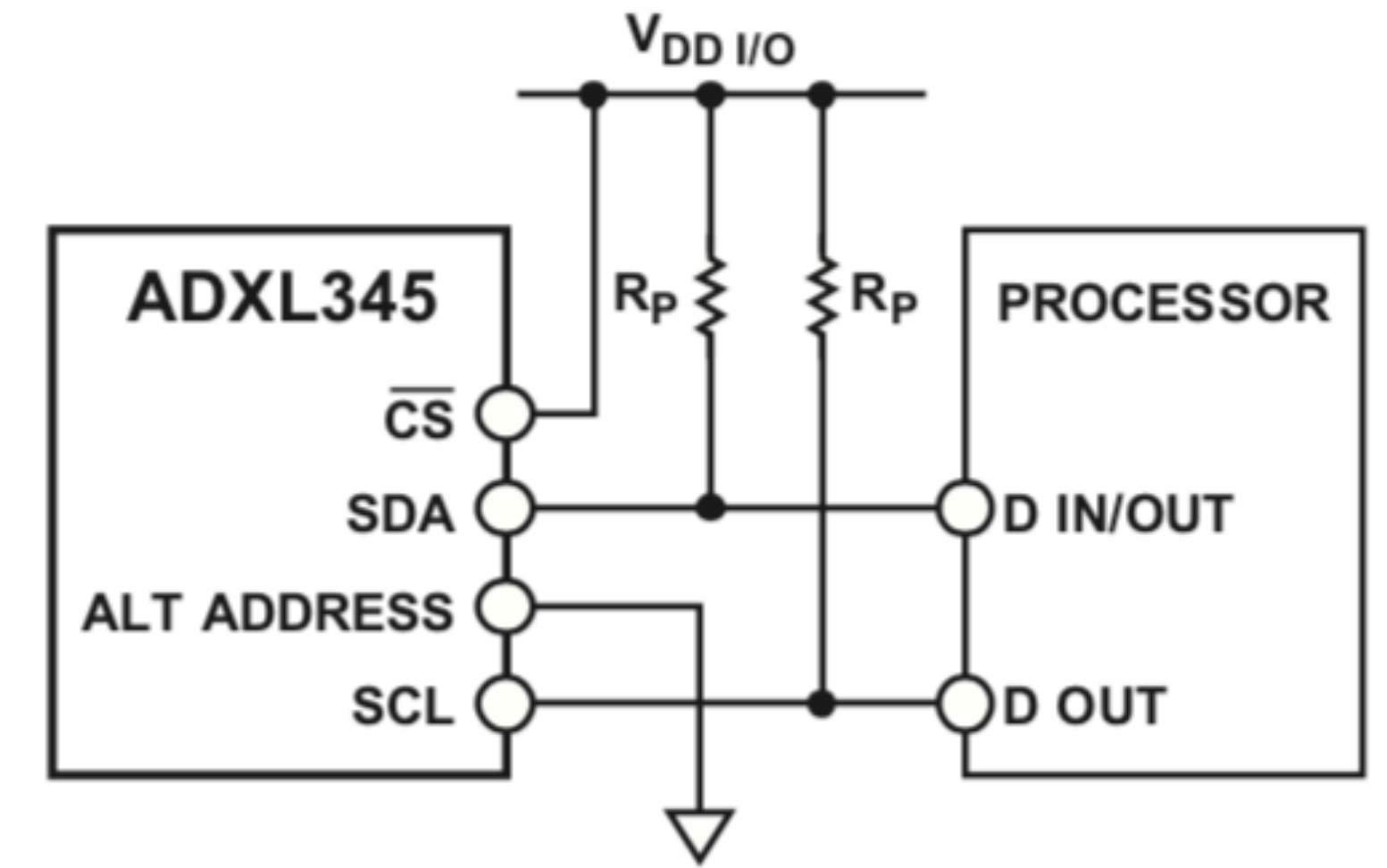


Figure 40. I²C Connection Diagram (Address 0x5).

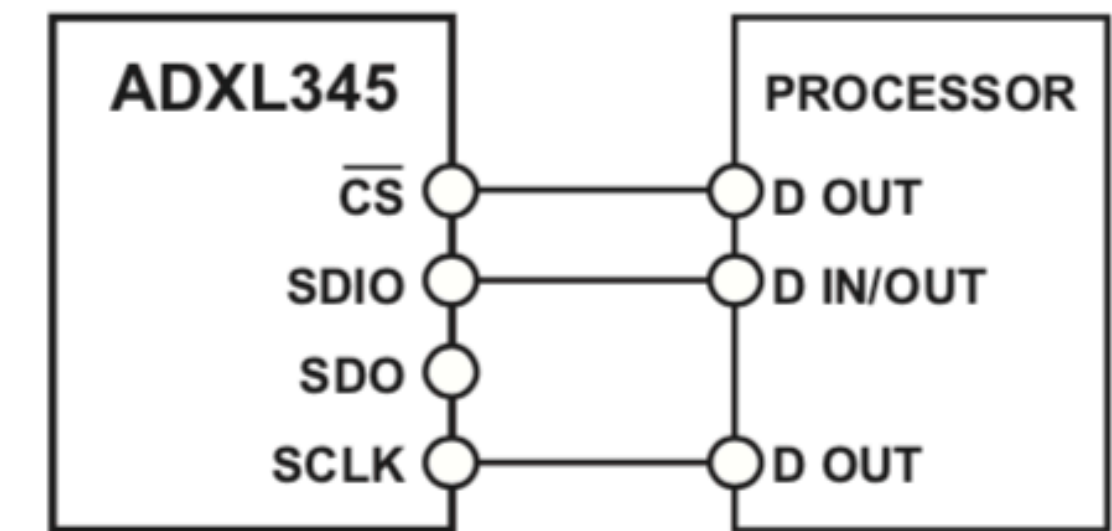


Figure 34. 3-Wire SPI Connection Diagram

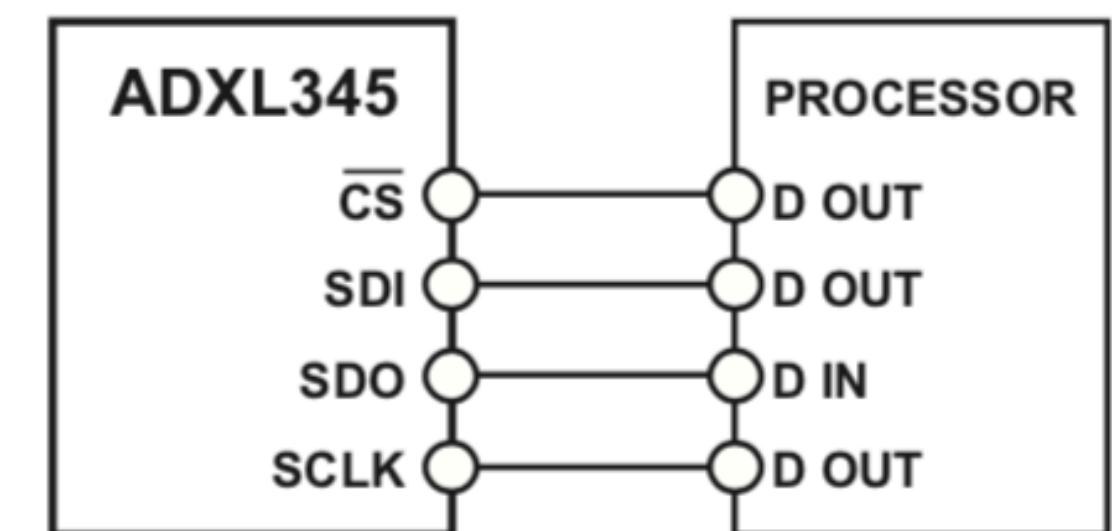


Figure 35. 4-Wire SPI Connection Diagram

BOM文件的产生及元器件备料

- 工程师和采购之间的桥梁
- 版本控制
- 正确的 Partnumber并尽可能指定采购的货源
- 关联器件采购渠道
- 估价 - 使用www.bom2buy.com
- 成本优化

Description	Designator	Comment	value	Footprint	Quantity
Electric Capacity Polarized 220uF, 16V,10%	C10	220uF	220uF	TAcap-D	1
Fixed Inductors 150uH 10% Mangnetic-Core 150uH 铁氧芯电感	L1	150uH	150uH	INDC4532	1
Header 2	J3	Header 2		HDR1X2	1
Header 3	J2, J4	Header 3		HDR1X3	2
Header, 6-Pin	P1	Header 6		HDR1X6	1
Inductor 1.5uH,10%	L2	1.5uH	1.5uH	1206	1
Inverting IC LTC1983-5	U6	LTC1983-5		SOT23	1
LDO IC LTC117-3.3	U2	LTC1117-3.3		SOT223	1
LDO IC LTC117-5	U4	LTC1117-5		SOT223	1
LED Green	LED1	LED		0805-A	1
Micro USB Header	J1	Header 5		MICRO-USB	1
Multilayer Ceramic Capacitors MLCC - SMD/SMT 16volts 10uF 5%	C1, C2, C11, C13, C14	10uF	10uF	1206	5
Multilayer Ceramic Capacitors MLCC - SMD/SMT 47uF 16Volts 10%	C16	47uF	47uF	C1210	1
Multilayer Ceramic Capacitors MLCC - SMD/SMT 500PF 50V 2%	C6	500pF	500pF	0805	1
Multilayer Ceramic Capacitors MLCC - SMD/SMT 0805 0.1uF 16volts X7R 5%	C3	0.1uF	0.1uF	0805	1
Multilayer Ceramic Capacitors MLCC - SMD/SMT 0805 1uF 16volts X7R 5%	C12, C15	1uF	1uF	0805	2
NPN General Purpose Amplifier,SOT-23	Q1	NPN		SOT-23	1
Resistance 0Ohm,5%,0603	R4, R5, R8, R9	0	0	0603	4
Resistance 0.82Ohm,5%,0603	R13	0.82	0.82	0603	1
Resistance 3.9k,5%,0603	R17	3.9k	3.9k	0603	1
Resistance 10k,5%,0603	R6, R7, R18	10k	10k	0603	3
Resistance 18k,5%,0603	R15	18k	18k	0603	1
Resistance 100k,5%,0603	R10, R11	100k	100k	0603	2
Resistance 180Ohm,5%,0603	R12	180	180	0603	1
Resistance 300Ohm,5%,0603	R2	300	300	0603	1
Resistance 330,5%,0603	R3	330	330	0603	1
Resistance 510k,5%,0603	R23	510k	510k	0603	1
Resistance ,1,0603,5%	R1	1	1	0603	1
Resistance,5.1k,5%,0603	R24	5.1k	5.1k	0603	1
Resistance,10k,5%,0603	R19	10k	10k	0603	1
Resistance,150,5%,0603	R14	180	180	0603	1
Resistance,330,5%,0603	R16, R20, R22	330	330	0603	3
Resistance ,330k,5%,0603	R21	330k	330k	0603	1
Schottky Diode 1N5819	D1, D2	1N5819		SMA	2
Tantalum Capacity Polarized 10uF,16V,10%	C4, C8	10uF	10uF	TAcap-B	2
Tantalum Capacity Polarized 22uF,16V,10%	C5, C9	22uF	22uF	TAcap-B	2
Tantalum Capacity Polarized 100uF,16V,10%	C7	100uF	100uF	TAcap-B	1
Typical INFRARED GaAs LED,1.8V,10mA,Red	LED2, LED3, LED4, LED5, LED6	LED		0805-A	5
USB Power Charing & Managing IC	U1	LTC4055-1		QFN	1
Voltage Regulators - Switching Regulators 1.5-A Boost/Buck Inverting Swtch Reg	U3	MC34063A		SOIC-8	1
Voltage Regulators - Switching Regulators ICs, P	U5	BD90571EFJ-C		HTSOP	1

请输入搜索型号

搜索

询价



将本地的BOM文件拖拽到这里

您也可以从本地选择文件上传BOM，或在线创建BOM

在线Bom管理

Bom2Buy可在线管理BOM列表，只需上传本地BOM文件或在线新建BOM，即可在线管理多个BOM文件，获取最全的价格信息，并进行批量采购。您更可以在编辑BOM之后，导出列表至本地。

不会使用? [尝试BOM范本](#)



元器件购买 - 购买真货



买芯片 Powered by findchips

请输入搜索型号



本地上传BOM，轻松买芯片

- 本地快速上传BOM，或在线创建新的BOM
- 一键购买，或加入购物车批量结算

NXP 社区 www.nxp.org