



創瑞科技

AiT Semiconductor Inc.

Product Introduction



AiT Semiconductor Inc.



www.AiT-ic.com



AiT Product Portfolio 产品六大类

Power management (Analog/Mixed signal)

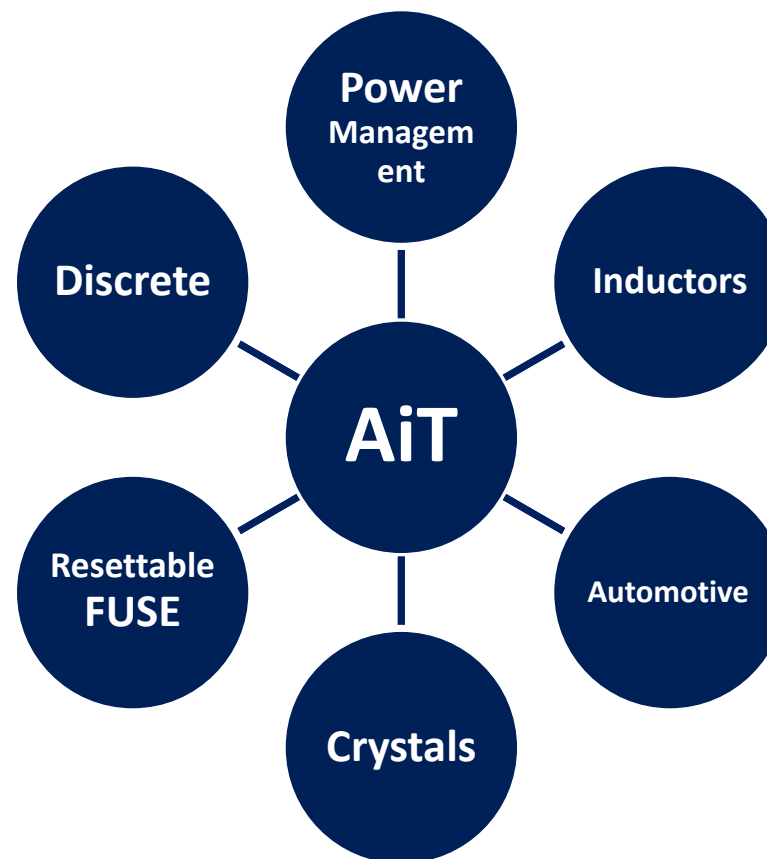
Discrete IC

Automotive

Inductor

FUSE

XTAL



AiT provides all RoHS products



Product Family Overview

Power Management IC 电源管理

- ◆ AUDIO AMPLIFIER
- ◆ REGULATOR
- ◆ MEMORY
- ◆ MOSFET
- ◆ BATTERY Management
- ◆ AC-DC PWM CONTROLLER
- ◆ USB Dedicated Charging Port (DCP) Controller
- ◆ ANALOG/POWER SWITCH & FILTER DRIVER
- ◆ DC-DC CONVERTER
- ◆ Supervisor(RESET IC)
- ◆ HALL SWITCH
- ◆ LED/OLED DRIVER
- ◆ TOUCH SCREEN

Inductor 电感

- ◆ CHIP INDUCTOR
- ◆ COMMON MODE CHOKE
- ◆ MULTILAYER CHIP BEAD
- ◆ POWER INDUCTOR
- ◆ BEAD CORE
- ◆ WIRE WOUND SMD INDUCTOR
- ◆ THROUGH HOLE POWER CHOKE
- ◆ WIRELESS CHARGING COIL

Automotive 汽车电子

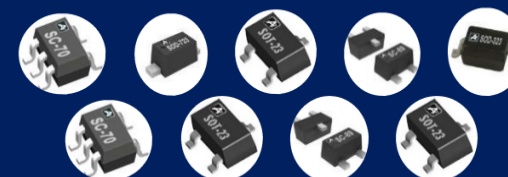
- ◆ DISCRETE
 - a. DIODES
(Switching / Schottky / Zener / Rectifier)
 - b. TVS / ESD PROTECTION
 - c. TRANSISTOR
 - d. FET
- ◆ MOSFET
- ◆ INDUCTOR

Xtal 晶振

- ◆ CRYSTAL CERAMIC COMPONENTS
- ◆ OSCILLATOR
- ◆ TCXO (Temperature Compensated Crystal Oscillator)
- ◆ VCXO (Voltage Compensated Crystal Oscillator)
- ◆ OCXO (Oven Controlled Crystal Oscillator)
- ◆ SMD REAL TIME CLOCK OSCILLATOR
- ◆ MONOLITHIC CRYSTAL FILTER
- ◆ SAW Product

Discrete 分离器件

- ◆ DIODES
- ◆ TVS/ESD PROTECTION
- ◆ TRANSISTOR
- ◆ BRIDGE RECTIFIER



Fuse 保险丝

- ◆ PPTC Resettable Fuse
F2920L/F1812L/F1210L/F1206L/F0805L/F0603L
- ◆ Lo Rho PPTC Resettable Fuse
Lo Rho F1812L/ Lo Rho F1210L/Lo Rho F1206L
Lo Rho F0805L/Lo Rho F0603L/ Lo Rho F0402L





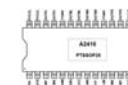
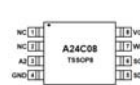
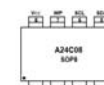
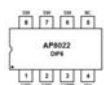
Applications & EVM Board 评估板

Lighting 照明领域	Medical 医疗电子	Telecommunication 通讯网络	Home Appliance 家电产品	Automotive 汽车电子	Consumer 消费电子	IoT 物联网	Industrial 工业控制
出口和应急照明 3C背光 展示柜照明 顶灯 露营夜灯 车库LED探照灯 LED灯具	血压监测仪 血糖仪 额温检测器 病人监护仪 电子体温计 助听器 显微镜相机	网络电话 智慧手机 无线对讲机 GPS追踪器 平板电脑 智慧手机 电子屏幕	扫地机器人 空气清净机 微波炉 吸尘器 电视机 咖啡机	GPS导航 行车纪录器 汽车安卓机 抬头显示器 迎宾踏板 车载充电器 胎压侦测器	游戏机 VR/AR 笔记本电脑 智能音响 蓝牙耳机 3C扩充盒	智慧家电 电子手环 智慧手表 居家安全监控 无人机 门口机	电子仪表 服务器 工业自动化 传感器 电子磅秤 各类数位表
							



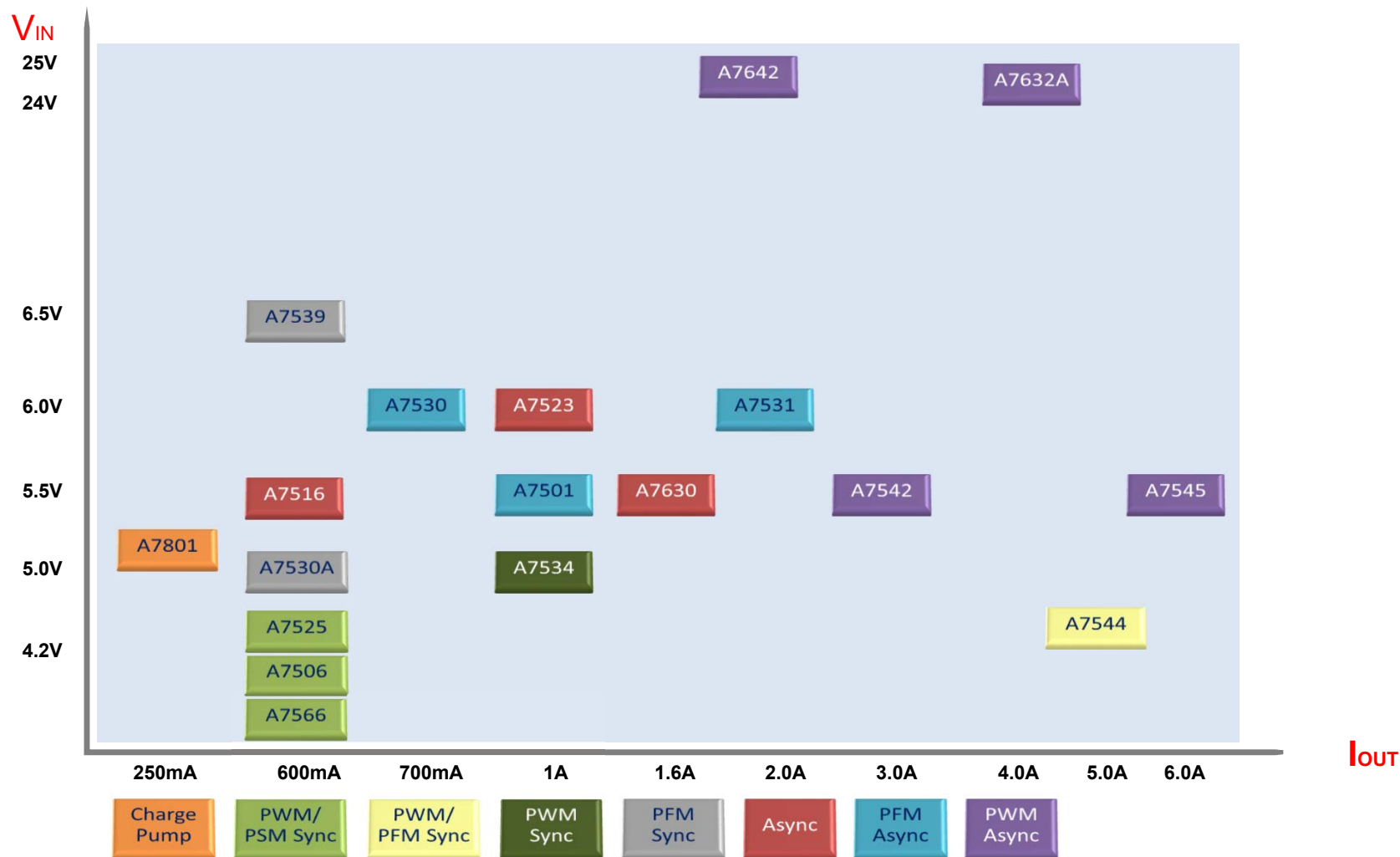
Power Management Overview

AC-DC 交直流转换	Analog Switch 模拟开关	Battery Management 电池管理	EEPROM 存储器	Audio Amplifier 音频功放
DC-DC Buck / Boost 直流电源转换	Power Switch 电源开关	MOSFET LV/ MV/ HV 开关	Reset IC 复位	OP Amplifier 运算放大器
Regulator LDO 稳压器	Motor/Relay Driver 马达驱动	IGBT Gate Driver 网关驱动	Hall Switch 霍尔开关	
LED Drive Lighting / Backlight 驱动	Touch Screen Driver 触屏驱动	Interface Circuit RS-485接口		



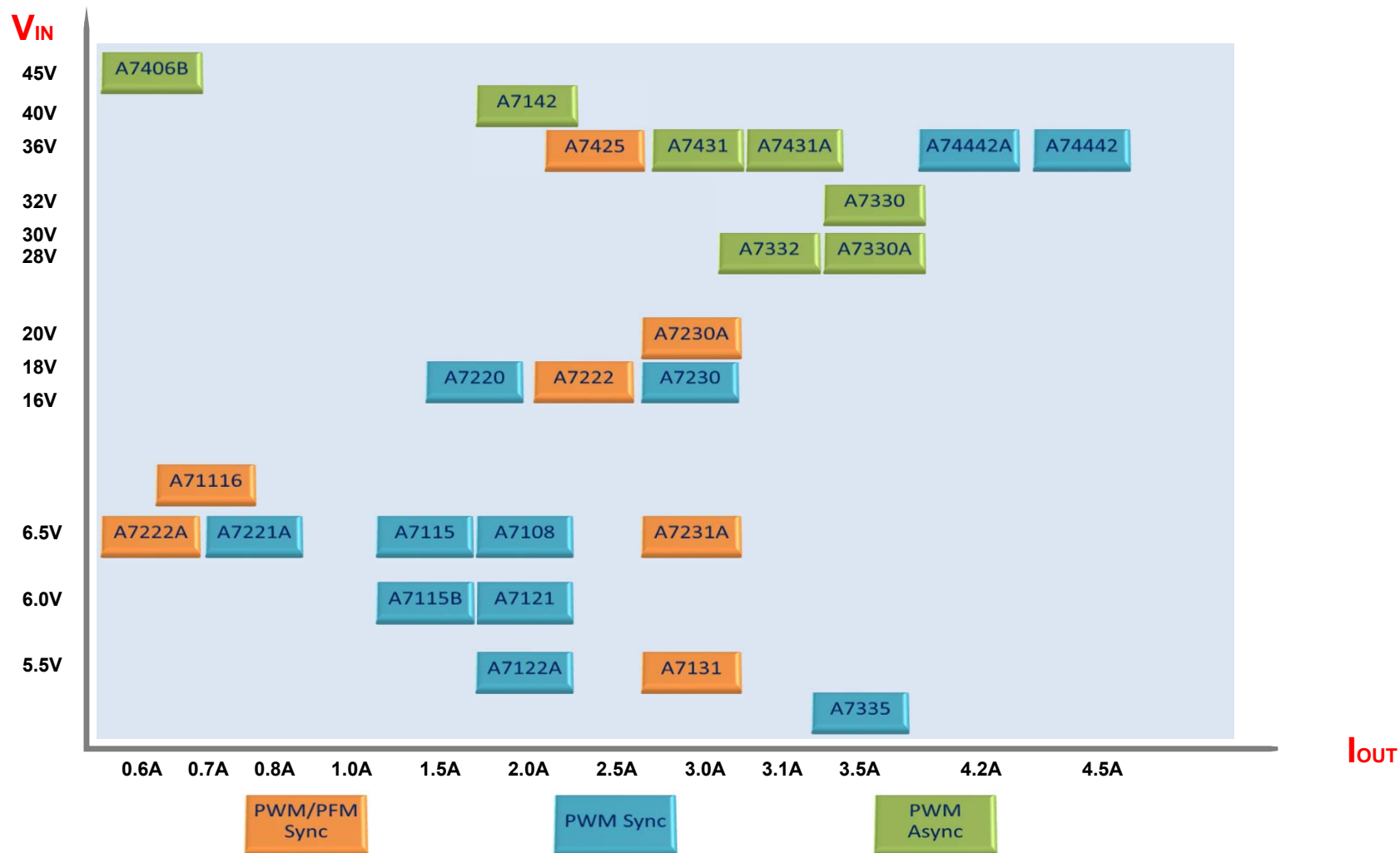


DC DC Boost Converter 升压



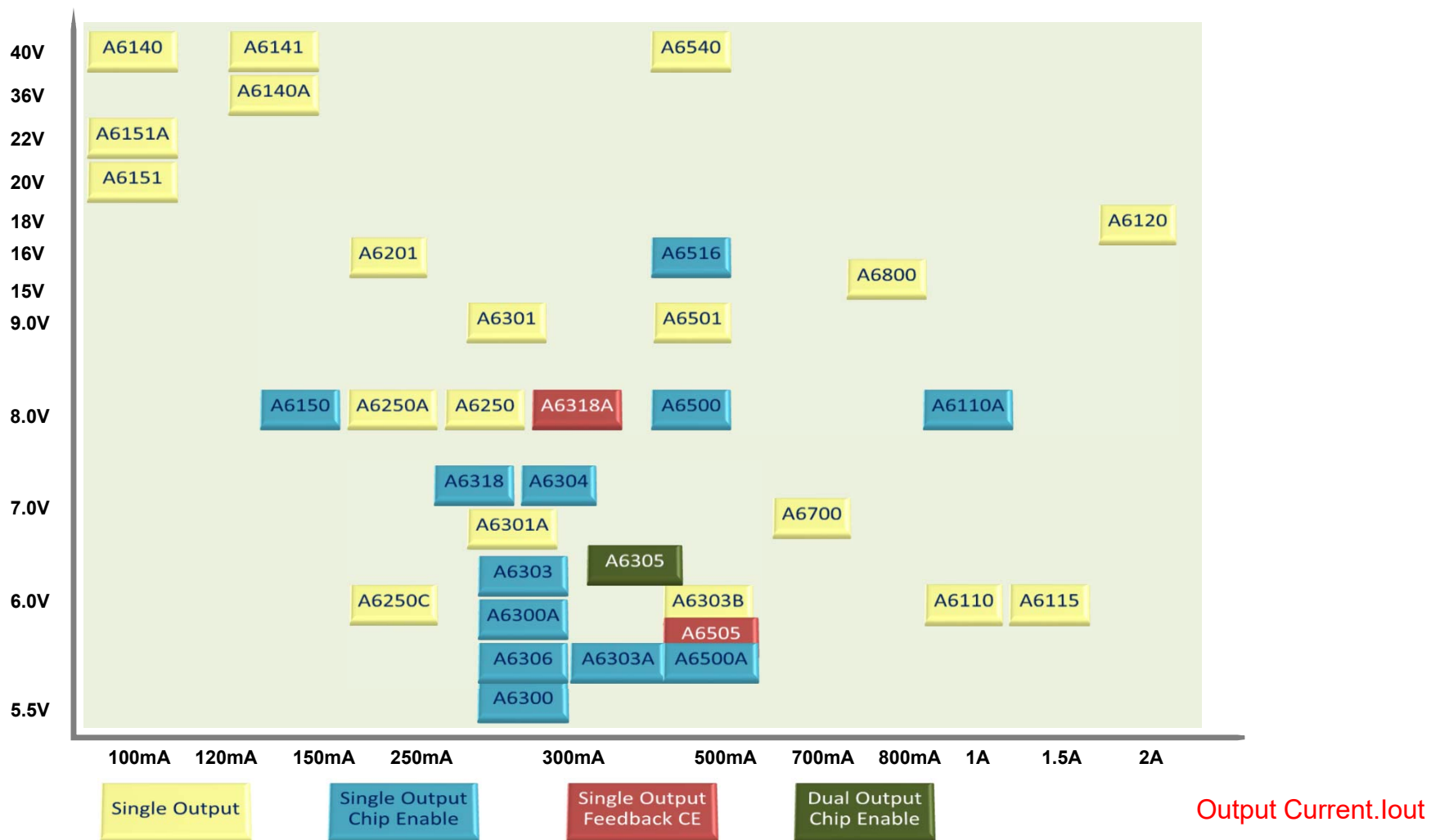


DC DC Buck Converter 降压





CMOS Low Dropout LDO 稳压





Bipolar Low Dropout Regulator

- 50+ LDO parts
- Input Voltage Range: $V_{in}(\min) = 1.2V$ to $V_{in}(\max) = 40V$
- Quiescent Current: Min. $2\mu A$ Max. $35\mu A$
- Output Variants: Fixed / Adjustable and Single / Dual Output
- Output Voltage Range: $V_{out}(\min) = 0.8V$ to $V_{out}(\max) = 6V$
- Load Current Range: $I_{out}(\min) = 70mA$ to $I_{out}(\max) = 3A$
- Drop Out Voltage: $V_{do}(\min) = 50mV$ to $V_{do}(\max) = 180mV$
- Accuracy = $\pm 1\%$ to $\pm 2\%$

Input Voltage $V_{in}(V)$

Single Output

Dual Output

1.8V,3.3V ADJ (TO252,TO263)

A1084

A1117A

1.2V,1.8V,2.5V,3.3V,5V ADJ (SOT89-3,SOT223,TO252)

A1118

1.8V,3.3V ADJ (PSOP8)

0.1A

1.0A

3.0A

5.0A

Output Current $I_{out}(A)$



Linear Regulator

Part Number	V _{IN} (V)	V _{OUT} (V)	Output Current (Max)
A79LXX	-30	-5/-6/-8/-9/-12	100mA
A317	3≤Vin-Vout≤40	ADJ (1.2 ~ 37)	1A
A78MXX	35/40	5/6/8/9/10/12/15/18/20/24	500mA
A78XX	35	5/6/8/9/12/15	1A
A79XX	-35	-5/-6/-8/-9/-12/-15	1.5A
A317B	3≤Vin-Vout≤40	ADJ (1.3 ~ 37)	1.5A
A7805	35	5	1A
A7812	35	11.5 ~ 12.5	1.5A
A79L05 ~ A79L24	-35	-5/-6/-8/-9/-10/-12/-15/-18/-20/-24	150mA
A78L05	30	5	100mA
A78LXXA	35/40	5/6/8/9/10/12/15/18/20/24	150mA
A78L05 ~ A78L24	35	5/6/8/9/10/12/15/18/20/24	150mA



Battery Management

Battery Indicator

A4006

- Single cell Lithium Ion Battery Indicator
- Detect 4 Voltage Points
- High Precision Detection Voltage ($\pm 1\%$)

Battery Protection

A4001, A4002, A4004

- Protection of Charger/Battery Cell Reverse Connection
- Integrated advance power MOSFET
- Vin up-to 12V

Battery Charger

A4051, A4052, A4055, A4056, A4063, A4057, A4059, A4061, A4056B

- Continued in Next Slide



Battery Charger 充电

Part Number	V _{IN} (V)	Shutdown Supply Current	Charge Type	V _{OUT} (V)	Charge Current	Package Type
A4051	4.25 - 6.5	50uA	Linear	4.2	1A	PSOP8
A4055	4.25 - 6.5	25uA	Linear	4.2	800mA	SOT-25
A4056	4.25 - 6.5	25uA	Linear	4.2	500mA	SOT-26
A4063	4.35 - 6.0	60uA	PWM	4.2	2A	PSOP8
A4052	4.25 - 6.5	25uA	Linear	4.2	1.2A	PSOP8
A4057	9.0 - 18	20uA	Linear	8.4	-	SOP8
A4059	2.3 - 6.5	25uA	Linear	Programmable	1.2A	PSOP8
A4061	4.25 - 6.0	25uA	Linear	4.2/4.35	1.5A	SOT-26 PSOP8
A4056B	4.25 - 6.5	25uA	Linear	4.2	500mA	SOT-25 SOT-89-5

- **Cellular Telephones**
- **MP3 Players**
- **Bluetooth Applications**

- **PDA's**
- **Smart Phones**
- **Charging Docks & Cradles**

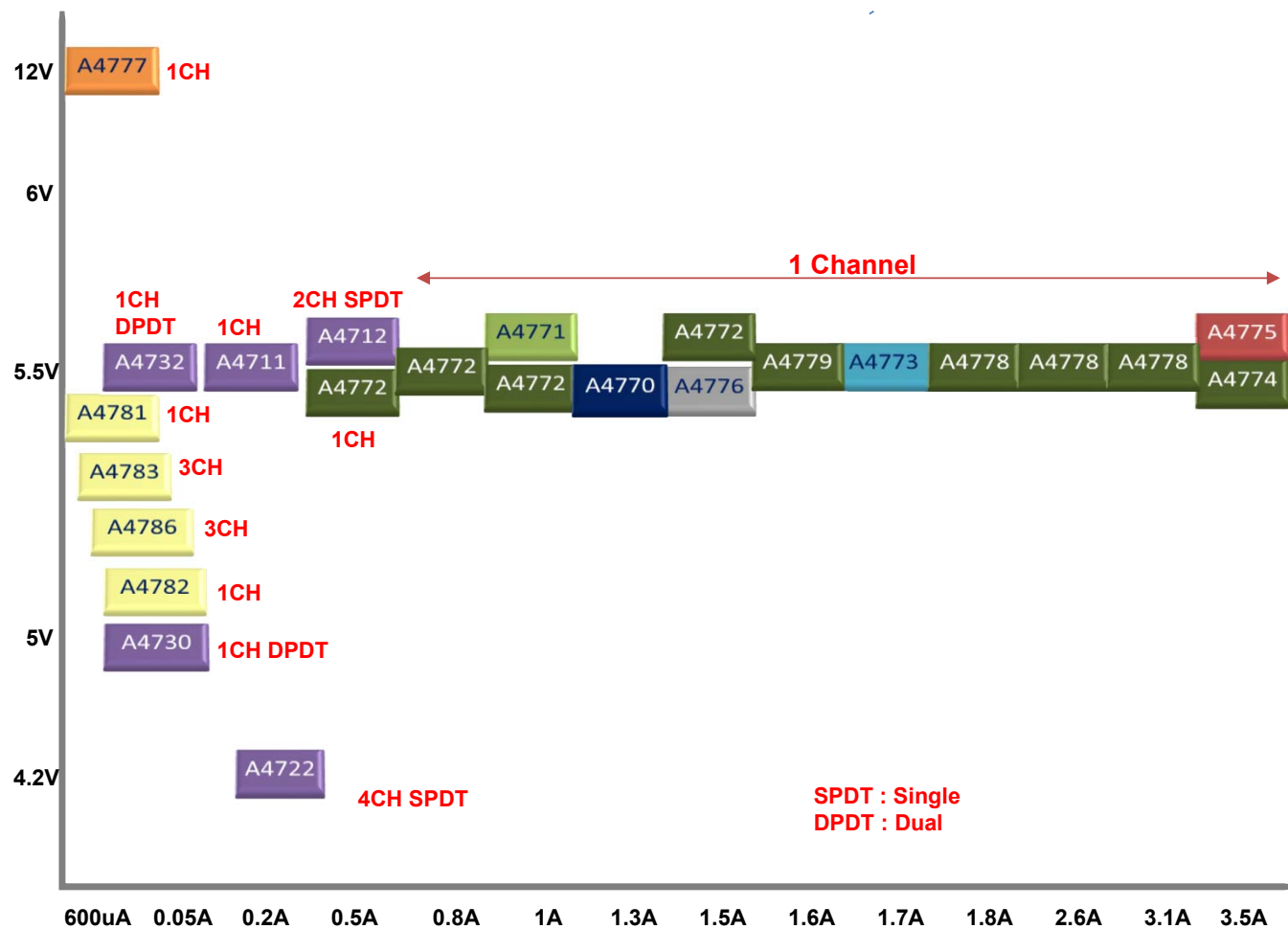
- **Digital Camera**
- **All kind of Chargers**
- **Electronics Dictionary**



Analog Power Switch & Filter Driver

Input Voltage $V_{in}(V)$

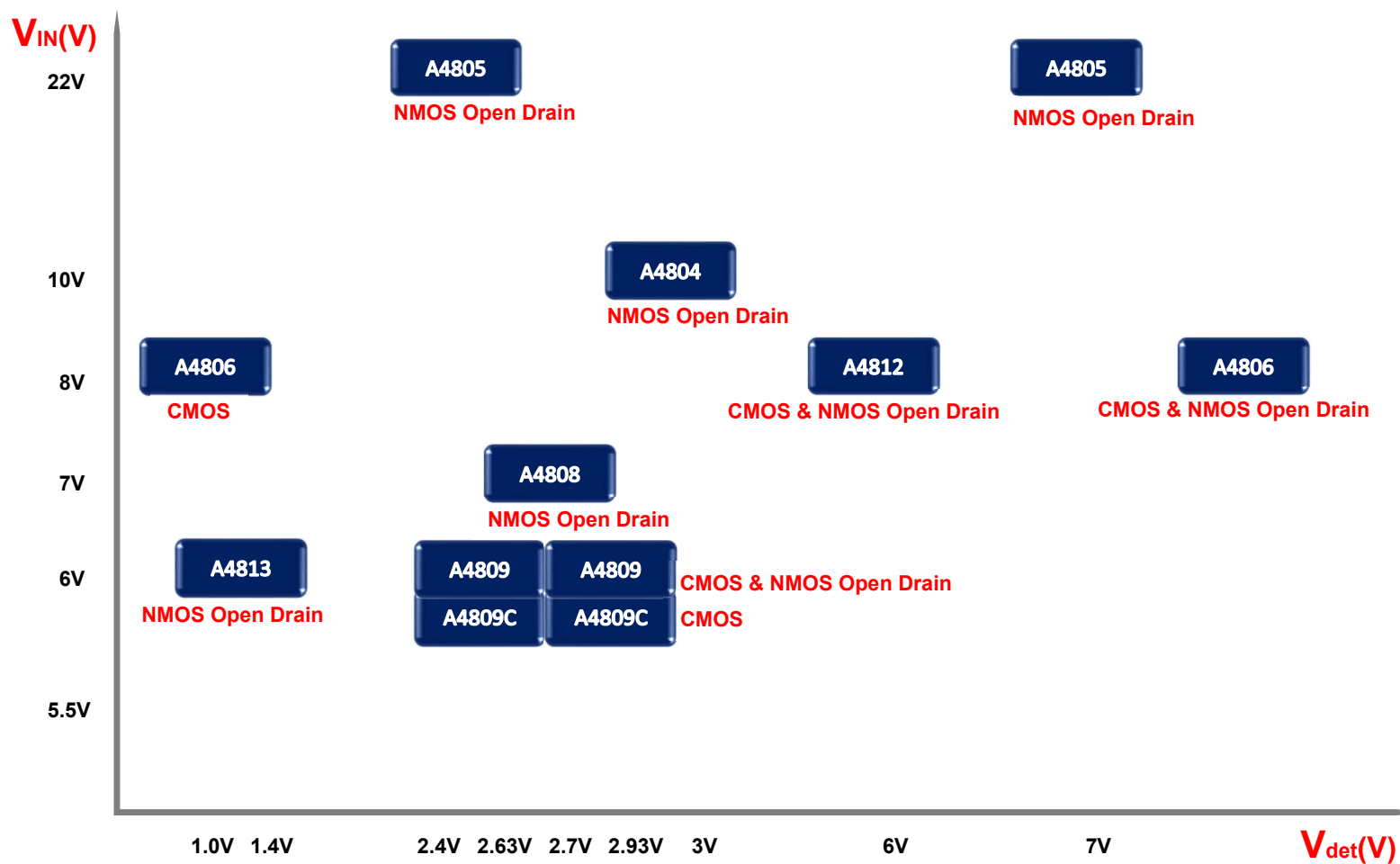
- Analog switch
- Load switch
- Power switch
- Load switch
Current limit+OPT
- Load switch
Current limit
- Video Filter
- Power switch Flag
- Load switch
Vout limit+OPT
- Load switch Delay



Output Current $I_{out}(A)$

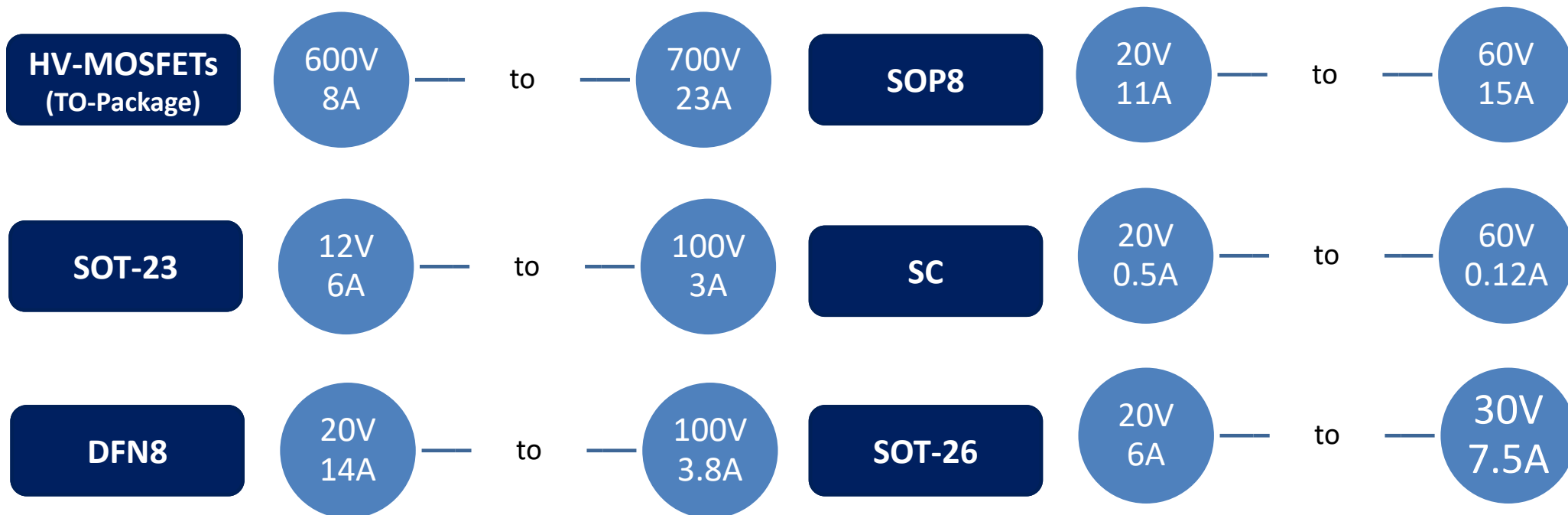
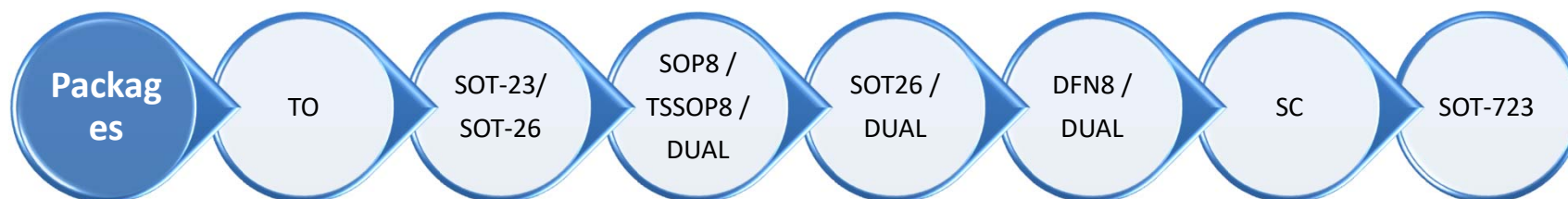


Supervisor (Reset IC 复位)





MOSFET





MOSFET IGBT Gate Driver

High & Low Side Drivers

Part Number	V _{IN} (V)	Number of Drivers	Driver Source Typ. (mA)	Driver Sink Typ. (mA)	Turn on t _{ON} Typ. (ns)	Turn off t _{OFF} Typ. (ns)	Package Type
AG2101	10~20	2	300	600	160	150	SOP8
AG2008	10.5~20	2	450	900	170	170	SOP8
AG2113	10~20	2	3000	4000	135	130	SOP16

Half Bridge Drivers

Part Number	V _{IN} (V)	Number of Drivers	Driver Source Typ. (mA)	Driver Sink Typ. (mA)	Turn on t _{ON} Typ. (ns)	Turn off t _{OFF} Typ. (ns)	Dead time DT Typ. (ns)	Package Type
AG2104	10~20	2	400	650	650	140	520	SOP8
AG2106	10~20	2	400	800	160	150	180	SOP8 DFN8(2x3)

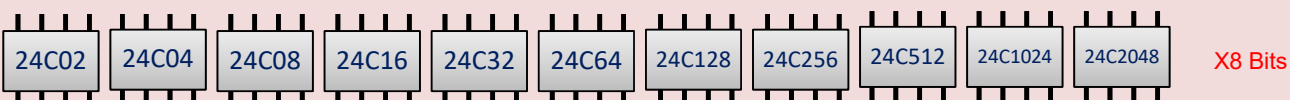
3 Phase High Voltage Driver

Part Number	V _{IN} (V)	Number of Drivers	Driver Source Typ. (mA)	Driver Sink Typ. (mA)	Turn on t _{ON} Typ. (ns)	Turn off t _{OFF} Typ. (ns)	Dead time DT Typ. (ns)	Package Type
AG2136	10~20	6	200	350	530	530	275	SOP28



Memory EEPORM 存储器

EEPROM 2wires I2C BUS

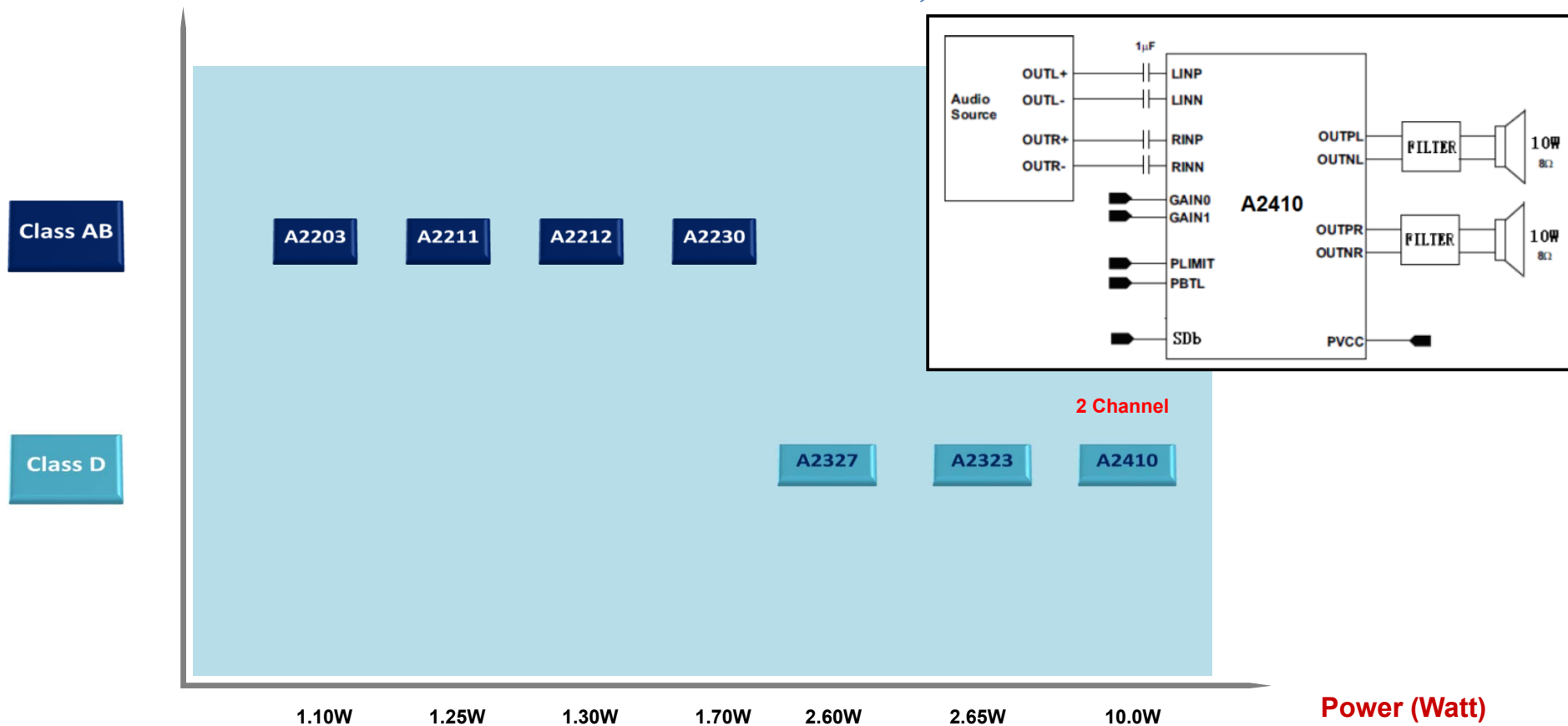


2K 4K 8K 16K 32K 64K 128K 256K 512K 1M 2M

ROM Size	SOP8	TSSOP8	DIP8	DFN8	TSOT-25	CSP4	CSP8
2k	v	v	v	v	v		
4k	v	v		v	v		
8k	v	v	v	v	v		
16k	v	v	v	v	v		
32k	v	v	v	v	v	v	
64k	v	v	v	v	v	v	
128k	v	v	v	v	v	v	
256k	v	v	v	v	v		
512k	v	v	v	v	v		
1024k	v	v	v	v			v
2048k	v	v	v				v



Audio Amplifier 音頻功放



- *Portable Electronic Devices*
- *Wireless Handsets*

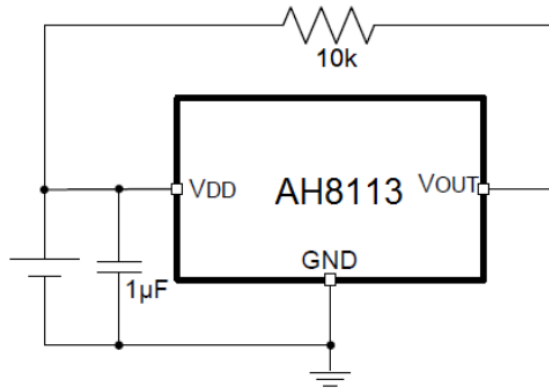
- *RF Audio Applications*
- *GPS, Wireless Handsets*

- *Consumer Audio Equipment's*
- *PDA's*



Hall Switch 霍尔

TYPICAL APPLICATION



- ❑ **Operating Voltage :** 1.65 ~ 6V
- ❑ **Avg. Supply Current :** 3µA
- ❑ **Operating Current :** -1 ~ 4.5mA
- ❑ **Output Voltage :** -0.3 ~ 6V
- ❑ **Output Current :** -1 ~ 2mA
- ❑ **Package:** TSOT-23 & TO-92S



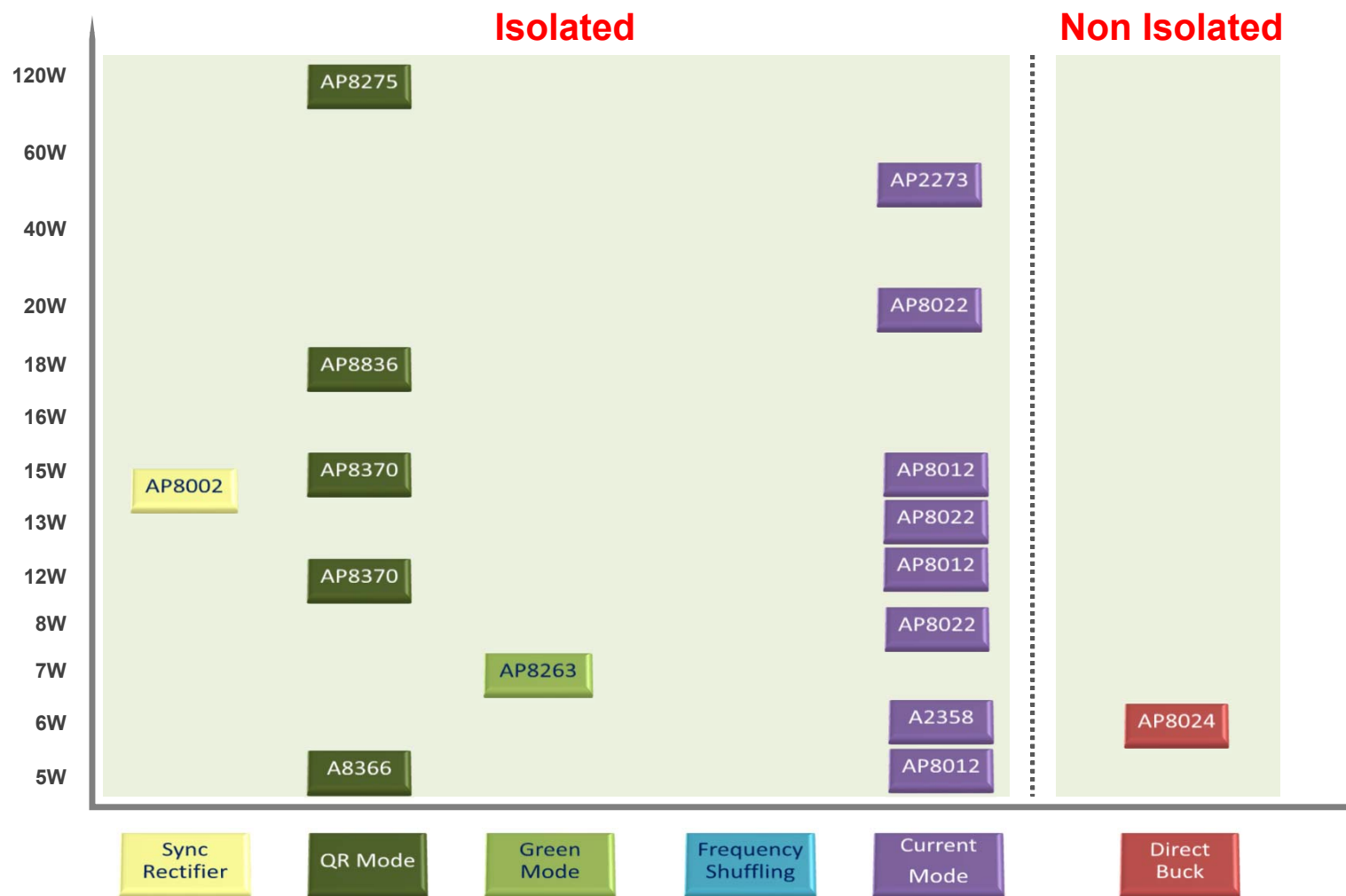
The AH8113 is an integrated hall-effect sensor designed specifically to meet the requirements of low-power devices. e.g. as an On/Off switch in Cellular Flip-Phones, with battery operating voltages of 1.65V-5.5V.

Precise magnetic switching points and high temperature stability are achieved through the unique design of the internal circuit. An onboard clock scheme is used to reduce the average operating current of the IC. During the operate phase the IC compares the actual magnetic field detected with the internally compensated switching points.

The output Voltage is switched at the end of each operating phase. During the Stand-by phase the output stage is latched and the current consumption of the device reduced to some µA. The IC switching behavior is Omnipolar; it can be switched on with either the North or South pole of a magnet



AC DC PWM Controller





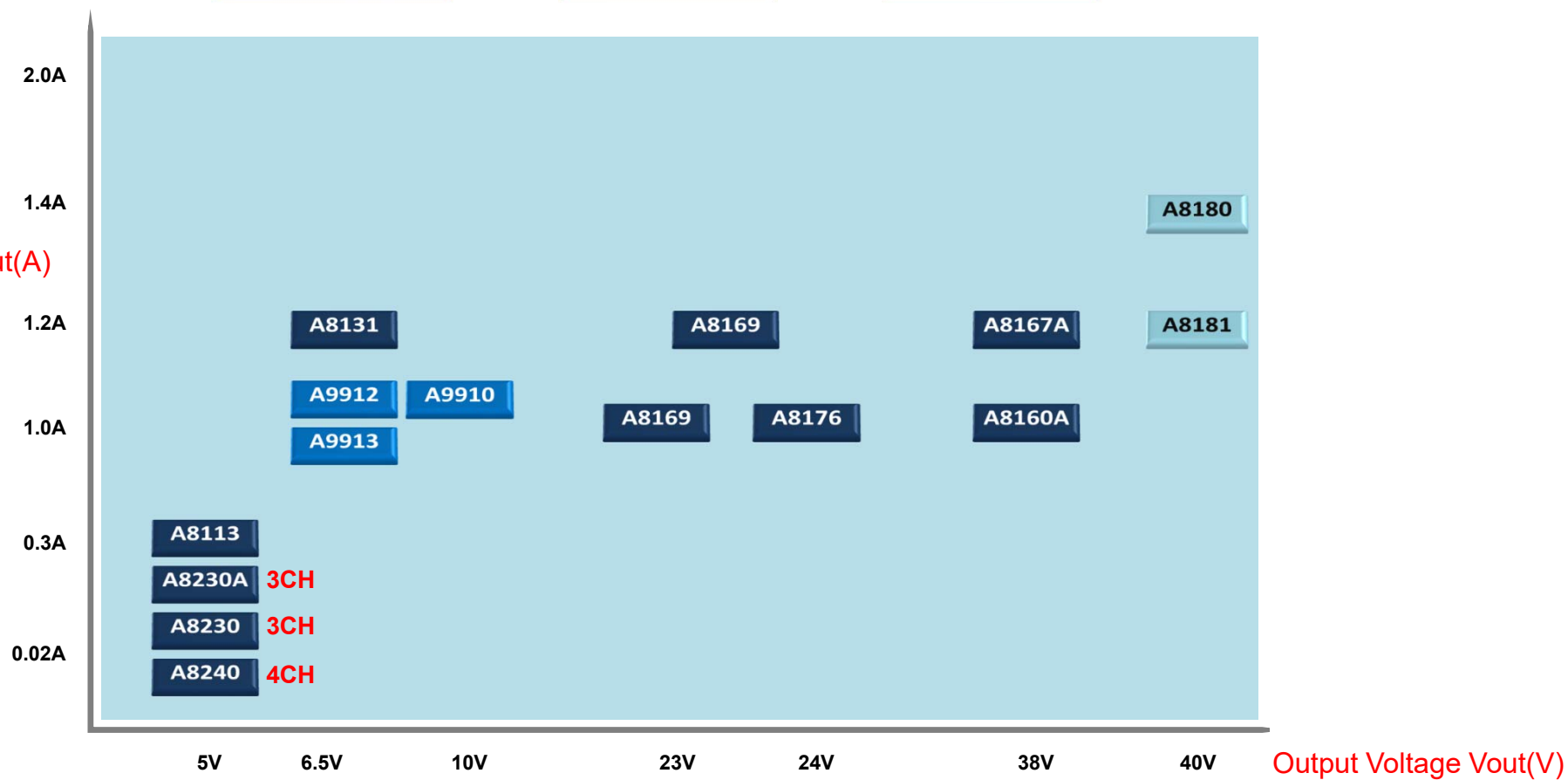
LED Driver (Lighting / Backlight) 驱动

AC DC Driver

Backlight Driver

Lighting Driver

Output Current Iout(A)

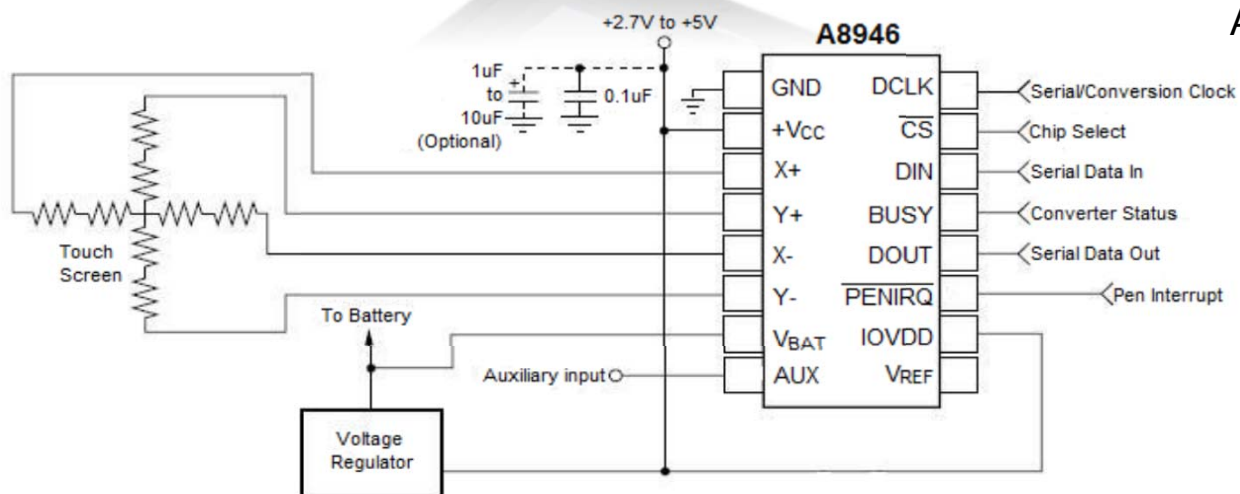




Touch Screen Driver 触屏驱动

车管所专用

行业签名专用



A8946

1.5V to 5.25V digital I/O

4-wire I/F Resistive Mode

Direct battery measurement(0V to 6V)

Programmable 8 or 12 bit Resolution

Temperature measurement

Touch-pressure measurement

Available in QFN16 Package.





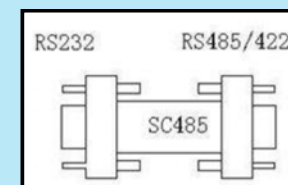
Interface Circuit RS接口

A3085

- +5V High Speed Transceiver
- Maximum Data Rate is 500Kbps
- Allow up to 256 Transceivers on the Bus
- Features Fail Safe Circuitry
- Available in SOP8 Package

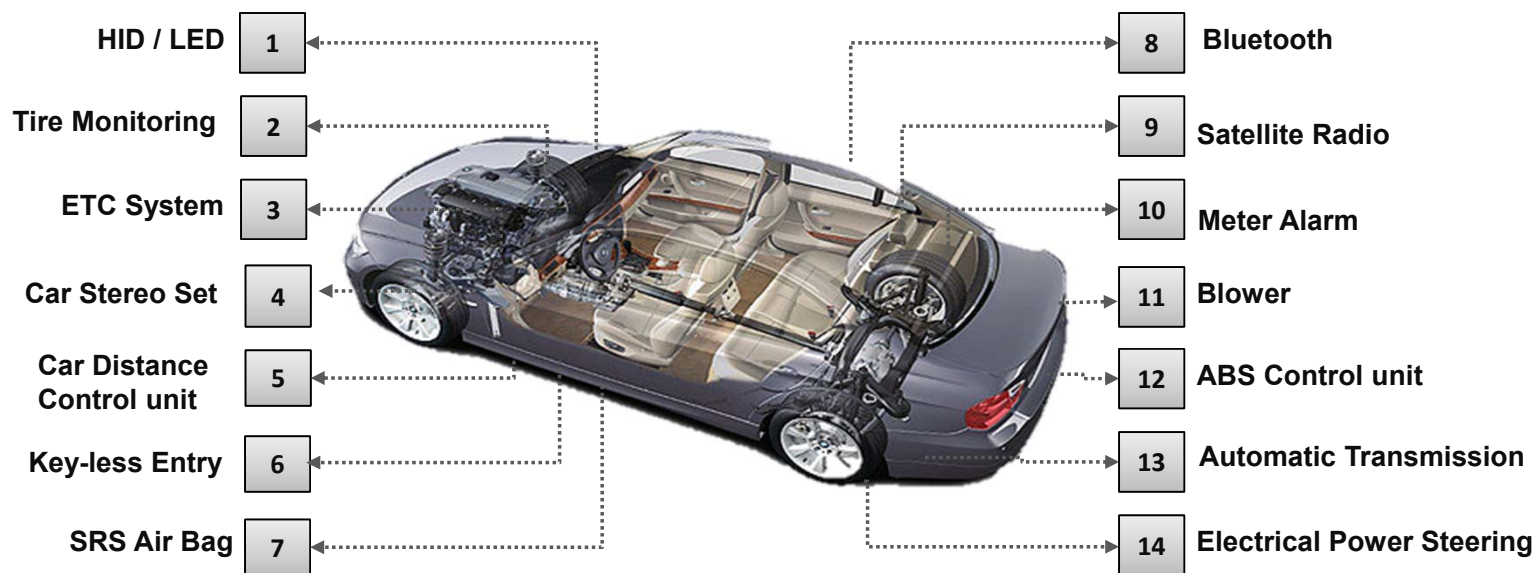
- *Smart meter*
- *DVR*
- *Transceiver for EMI-sensitive Applications*
- *Industrial control LAN*
- *RS485 Comm. Level Translator*

RS- 485





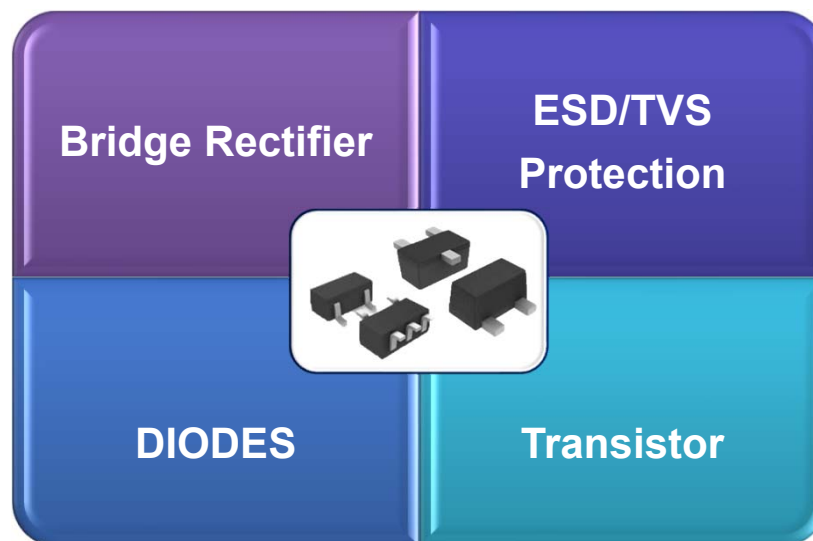
Automotive 汽车电子



AEC-Q101 / AEC-Q200 SMD Power Inductor



Discrete IC 分离式器件



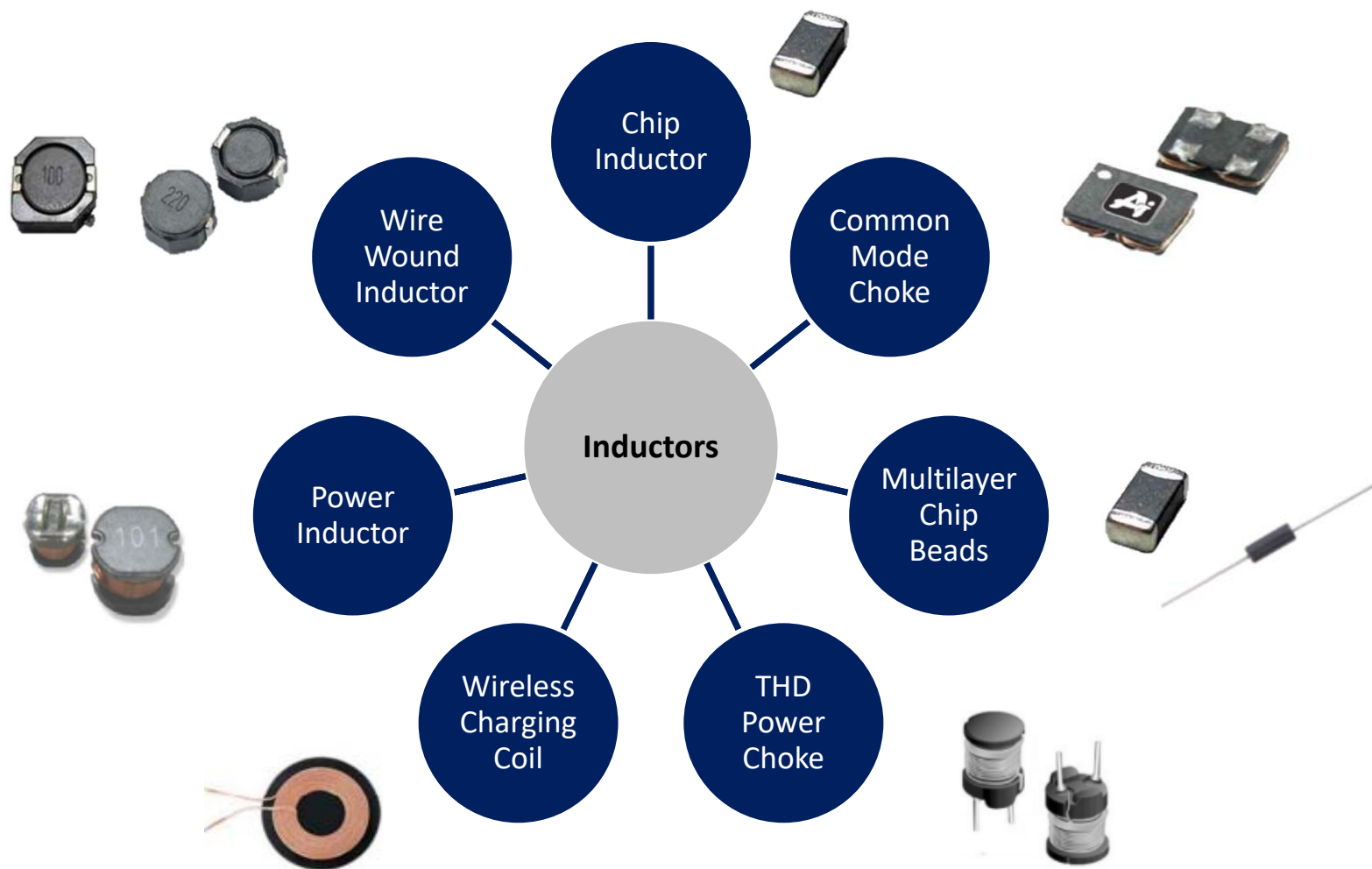
AiT Semiconductor provides the cost-effective & high-performed ICs for power management applications. AiT Semiconductor leverage AiT holding's manufacture – Inductor, Xtal & Fuse to provide Total-Solution to shorten customer's design cycle.

AiT Semiconductor supply to world-wide OEM/ODM customers, major markets in Consumer, Medical, Industrial, IoT, Lighting, Telecommunication, Home Appliance and Automotive...etc.



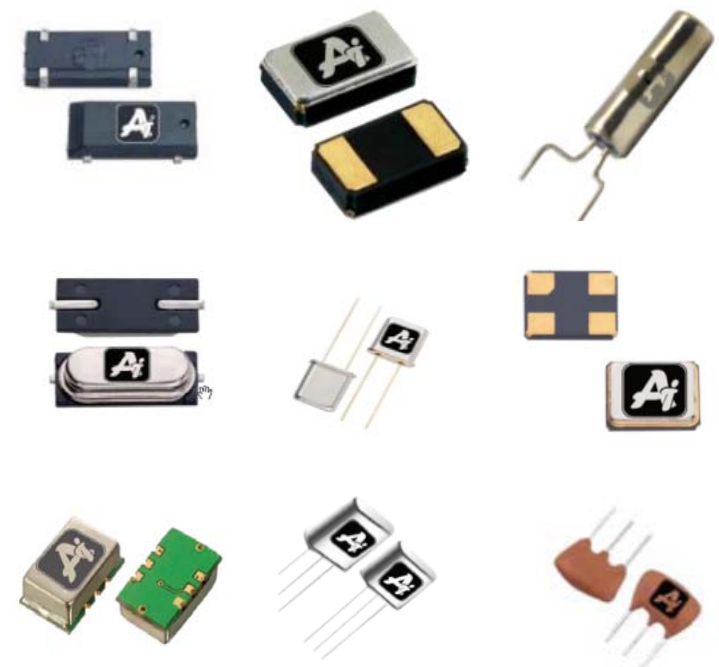
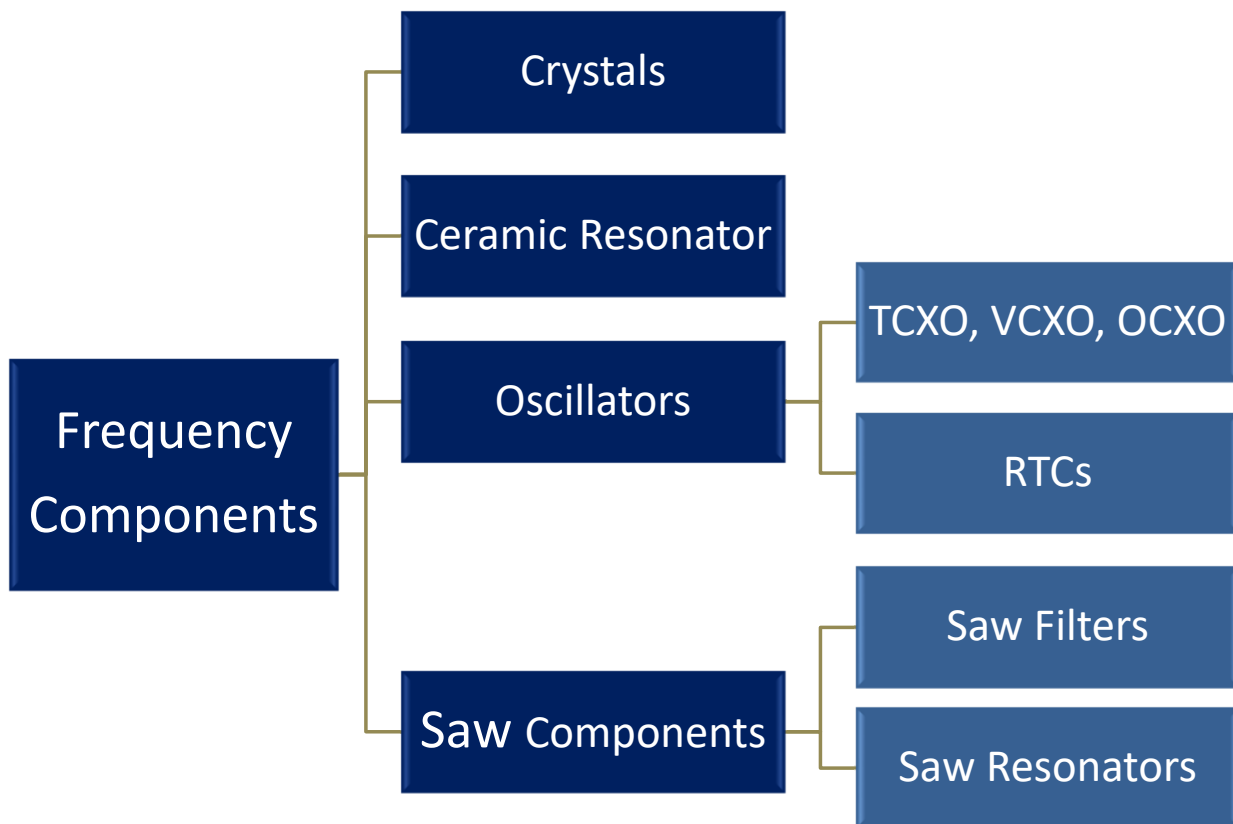
SMD Power Inductor 电感

AEC - Q200 Certified





Frequency Components XTAL 晶振



Product		Capacity
Crystal	SMD	30
	SMD (Glass Type)	5
	DIP	10
Oscillator	SMD	25
Total	KK/Month	70



Resettable FUSE 可回复式保险丝

SMD PPTC Resettable Fuse

Part Number	SMD Package Size	Operation Current (A)	Vmax (VDC)	I _{max} (A)
F2920L	[2920]	0.30~5.00	6~60	100
F1812L	[1812]	0.10~3.00	6~60	10~100
F1210L	[1210]	0.05~2.00	6~60	10~100
F1206L	[1206]	0.05~2.00	6~60	10~100
F0805L	[0805]	0.10~1.00	6~15	40~100
F0603L	[0603]	0.01~0.20	9~60	40



Lo Rho PPTC Resettable Fuse

Part Number	SMD Package Size	Operation Current (A)	Vmax (VDC)	I _{max} (A)
Lo Rho F1812L	[1812]	1.40~6.00	6	100
Lo Rho F1210L	[1210]	1.75~7.50	6	100
Lo Rho F1206L	[1206]	0.50~7.00	6	100
Lo Rho F0805L	[0805]	0.75~3.50	6	100
Lo Rho F0603L	[0603]	0.25~1.00	6~9	100
Lo Rho F0402L	[0402]	0.10~0.50	6	100



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