

# Smart Power

[www.ams.com/PMU](http://www.ams.com/PMU)



## Smart Power Management

- Low Noise LDOs
- Step Down & Step Up DC-DC converters
- Programmable start up sequencing
- Strong 1.5 Amp Chargers
- Power Path Management

We provide innovative analog solutions to the most challenging applications in sensor and sensor interfaces, power management, and wireless.

## General Description

ams' line of power management units covers highly integrated, extremely flexible power management units for a portable, battery powered devices. All products come either in BGA, CSP or in thermally enhanced QFN packages.

| Applications   | Benefits  |
|--|---|
| <ul style="list-style-type: none"> <li>- Mobile phones</li> <li>- Wearables</li> <li>- Portable navigation devices</li> <li>- e-book readers</li> <li>- Portable media players</li> <li>- Tablets</li> <li>- Netbooks</li> <li>- SSD drives</li> </ul> | <ul style="list-style-type: none"> <li>- DC-DC up to 32A current with Dynamic Voltage Management</li> <li>- Smallest Inductors (0.47µH) by 4MHz DC-DCs</li> <li>- Strong 1.5A Charger, 2.6A power path management</li> <li>- Digital LDOs (0.9-3.3V out, 1.8-5.5V in)</li> <li>- 30V OVP</li> <li>- Ultra low power RTC (&lt;700nA)</li> <li>- Flexible OTP for start-up sequencing</li> <li>- Configurable stand-by mode</li> <li>- Space Saving QFN and CSP Packages</li> </ul> |

|                            | AS3605                 | AS3607<br>(AS3608)                    | AS3658                             | AS3709                                   | AS3710<br>(AS3711)                               | AS3712<br>(AS3713)                              | AS3715                            | AS3721/22+28/29B                     | AS3701                |
|----------------------------|------------------------|---------------------------------------|------------------------------------|--|--|---|-----------------------------------|--------------------------------------|-----------------------|
| Power Management           |                        |                                       |                                    |  |  |   |                                   |                                      |                       |
| Special LDOs               | RF-4x150mA             | ANA-1x100mA<br>ANA-4x250mA            | ANA-1x400mA<br>ANA-2x150mA         | -  | ANA-2x250mA                                      | ANA-2x250mA                                     | ANA-2x250mA                       | LOR-1x300mA<br>EIR-1x300mA           | -                     |
| Universal LDOs             | 2x250mA                | -                                     | 4x200mA                            | 2x300mA                                  | 6x300mA  | 6x300mA   | 6x300mA                           | 10x300mA                             | 2x200mA               |
| DC-DC Step down Converters | 500mA                  | 3x0.7A<br>(3x1A)                      | 3x500mA or<br>1.6A + 2x500mA       | 5x1A<br>2A/3A<br>configurable            | 1.5A + 2x1A,<br>2A configurable<br>(AS3710 + 3A) | 1.5A + 2x1A<br>2A configurable<br>(AS3712 + 3A) | 2A + 2x1A + 8A<br>4A configurable | 4A + 2A + 2x1.5A +<br>8A + 16A + 32A | 500mA                 |
| DC-DC Step up Converters   | -                      | 30V                                   | 2x50V                              | -  | 3x50V (2x50V)                                    | 3x50V (2x50V)                                   | 50V                               | -                                    | -                     |
| Current Sinks              | 3x40mA,<br>2x160mA     | 2x40mA                                | 3x40mA                             | -  | 3x40mA   | 3x40mA  | 3x40mA                            | -                                    | 2x40mA                |
| Charge Pump                | 5V/60mA                | -                                     | 5V/100mA                           | -  | -  | -   | 5V/60mA                           | -                                    | -                     |
| Charger                    | Linear, 1A             | Linear, 1A                            | USB 500mA<br>DCDC / Linear<br>1.4A | -  | DCDC / Linear<br>1.5A                            | -   | DCDC / Linear<br>1.5A             | -                                    | Linear, 500mA         |
| USB limit / Power Path     | Yes / -                | Yes / Yes                             | Yes / Yes                          | -  | Yes / Yes  | -   | Yes / Yes                         | -                                    | Yes / Yes             |
| Audio                      |                        |                                       |                                    |  |  |   |                                   |                                      |                       |
| Line / Microphone Input    | -                      | -                                     | 1 / 1                              | -  | -  | -   | -                                 | -                                    | -                     |
| Line-Out / HP Amp / SPKR   | - / - / 0.5W<br>Stereo | -                                     | 1 / 1 / -                          | -  | -  | -   | -                                 | -                                    | -                     |
| Audio Mixer                | -                      | -                                     | Mixed and EQ                       | -  | -  | -   | -                                 | -                                    | -                     |
| Audio DAC / ADC            | -                      | -                                     | 96dB/84dB SNR                      | -  | -  | -   | -                                 | -                                    | -                     |
| Features                   |                        |                                       |                                    |  |  |   |                                   |                                      |                       |
| GPIOs                      | 3                      | 4                                     | 4                                  | 2  | 4  | 4   | 8                                 | 8                                    | 5                     |
| RTC                        | -                      | -                                     | Yes                                | -  | Yes  | Yes   | -                                 | Yes                                  | -                     |
| General Purpose ADC        | -                      | 10bit                                 | 10bit                              | -  | 10bit  | 10bit   | 10bit                             | 10bit                                | -                     |
| Startup Sequences          | Programmable           | Programmable                          | 4x8 +<br>Adjustable                | Programmable                             | Programmable                                     | Programmable                                    | Programmable                      | Programmable                         | Programmable          |
| Package                    | BGA-100<br>10x10mm     | QFN-36 6x6mm<br>CSP-49 0.4mm<br>pitch | BGA-124<br>8x8mm                   | QFN-32<br>4x4mm<br>CSP-36 0.4mm<br>pitch | QFN-56 7x7mm<br>CSP-64 0.4mm<br>pitch            | QFN-56 7x7mm                                    | CSP-81<br>0.4mm pitch             | CTBGA-124<br>8x8mm                   | CSP-20<br>0.4mm pitch |

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