LEADER IN POWER SOLUTIONS FOR SMARTPHONES

Dialog’s power management solutions are optimized to meet the challenging needs of today’s smartphones. Tight space constraints, thermal challenges and ever changing power requirements are effectively addressed through Dialog’s portfolio of highly integrated, highly efficient and easily configurable PMICs.

Dialog also offers innovative, highly efficient and high-density charging solutions that reduce heat dissipation for any rapid charging technology.

Development Support

Throughout the customer product development period, Dialog provides quick and expert application support. Dialog’s local field application engineers are always on hand to provide dedicated advice and guidance during the critical design phase.

Contents

- Custom Mixed-Signal Solutions ........................................ Page 04
- Power management ICs .................................................. Page 06
- Switched Capacitor DC-DC Converters ... Page 11
- Smartphone charging ICs ............................................. Page 13
- Power conversion solutions .......................................... Page 15
- Haptics ..................................................................... Page 24

Power Management ICs (PMICs)

Highly integrated, efficient and scalable power management ICs (PMICs) and sub-PMICs for powering SOCs

Charging ICs

High efficiency companion charger ICs, requiring no external inductors

Haptics

Low-power, wide-bandwidth haptic driver for vibrations and clicks using ERM (eccentric rotating mass motor) and LRA (linear resonant actuator) applications

Custom Mixed-Signal Solutions

Market leading Custom PMICs and Mixed-Signal ASICs deliver customized solutions to optimize efficiency, size, performance and system cost

AC/DC RapidCharge™ adapter solutions

Higher power density in smaller travel adapters without incurring thermal issues

Capacitive Dividers

The industry’s first and highest efficiency Switch Cap Converters with extremely small footprint enabling 2S to 1S voltage conversions without requiring inductors
Custom Mixed-Signal Solutions

Dialog Semiconductor, a market leader in custom Power Management ICs (PMICs) and Mixed-Signal ASICs, has a proven track record and long history in its close collaboration with industry leaders to deliver customized, high-performance solutions. The company’s exemplary record has resulted in multi-generational partnerships which have firmly established Dialog as a trusted partner of choice.

Integrate to Differentiate

Dialog enables many of the most unique and advanced electronics products on the market today. Its broad, mixed-signal portfolio ranges from advanced power conversion topologies, battery chargers, audio solutions, digital and analog interfaces to linear analog and signal conditioning technologies. Dialog’s digital capabilities include embedded computing as well as memory to empower next generation solutions. Advanced packaging technologies co-developed with the company’s packaging experts and vendor partners continue to deliver leading edge solutions in the mixed-signal market.

Time-to-Market

Dialog is now the leading pure play provider of advanced Power Management ICs. This level of success was achieved through absolute attention to detail. Dialog ensures that all IP is proven to perform as designed. Its accumulated library of leading-edge technologies enables Dialog to execute flawlessly and deliver “First Time Right” solutions.

Operational Excellence

Dialog’s long-standing relationships with world-class manufacturing partners for wafer fabrication back-end assembly and test provide access to advanced mixed signal process nodes. Expertise in mixed-signal ASIC design and development from concept to production guarantees the highest levels of quality. Dialog’s unparalleled high-volume production ramp capability (from zero to 80 M units within a quarter) empowers its customers to rapidly deliver new products to market. The internal supply chain team at Dialog has delivered 99%+ on-time-delivery (OTD) while working closely to react to today’s dynamic and volatile market conditions.
Power management ICs

Highly integrated solutions offer space saving and cost-effective smartphone solutions

The integration of multiple switching regulators and LDOs meets the diverse power management needs of advanced SOCs and conserves valuable board space. Additionally, these highly integrated solutions deliver higher reliability, reduced complexity and provide layout flexibility.

Flexible and configurable for multiple SOC platforms

Dialog’s comprehensive solutions meet the challenges of powering today’s advanced application processor and modern SOCs with diverse voltage and current needs, multiple channels, power sequencing requirements and the ability to scale to higher power needs.

PMIC and sub-PMIC families meet wide-ranging needs in today’s applications

In addition to highly integrated PMIC solutions with integrated multiple buck regulators and LDOs, Dialog offers a family of high-current sub-PMICs that satisfy the high-current needs of the latest SOCs. These sub-PMICs offer multi-phase, high-current (up to 20 A) buck regulators in a compact footprint with advanced power management features.

System PMIC Product Portfolio

<table>
<thead>
<tr>
<th>Product</th>
<th>Package</th>
<th>Input Voltage (V)</th>
<th>Regulators</th>
<th>LDOs</th>
<th>ADC</th>
<th>USB charger</th>
<th>RTC</th>
<th>Interface</th>
<th>OPNs</th>
<th>Backup charger</th>
<th>EMI shield</th>
<th>Power Sequencing</th>
<th>GPIOs</th>
<th>Audio Amplifier (Class G, Class D)</th>
<th>Audio Codec</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA9021</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>3</td>
<td>5</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>HC, SPI</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9022</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>3</td>
<td>5</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>HC, SPI</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9053</td>
<td>PGA</td>
<td>2.8 to 5.5</td>
<td>4</td>
<td>10</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>FC, SPI</td>
<td>16</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9061</td>
<td>QFN</td>
<td>2.7 to 5.5</td>
<td>3</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>FC</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9062</td>
<td>QFN</td>
<td>2.8 to 5.5</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9063</td>
<td>BGA</td>
<td>2.8 to 5.5</td>
<td>6</td>
<td>11</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>FC, SPI</td>
<td>16</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DA9066</td>
<td>WLCSP</td>
<td>2.5 to 4.4</td>
<td>6</td>
<td>20</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>FC</td>
<td>3</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>G, D</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>DA9068</td>
<td>WLCSP</td>
<td>2.8 to 4.5</td>
<td>8</td>
<td>25</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>FC</td>
<td>3</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### Sub-PMIC Product Portfolio

<table>
<thead>
<tr>
<th>Product</th>
<th>Package</th>
<th>Input Voltage (V)</th>
<th>Regulators</th>
<th>Interface</th>
<th>GPIOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA9121</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>One dual-phase buck (10A)</td>
<td>PC</td>
<td>5</td>
</tr>
<tr>
<td>DA9122</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>Two single-phase bucks (5A each)</td>
<td>PC</td>
<td>5</td>
</tr>
<tr>
<td>DA9111</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>One quad-phase buck (9A)</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9112</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>Two dual-phase bucks (6A each)</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9131</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>One quad-phase buck (12A)</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9144</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>Two dual-phase bucks (6A each)</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9155</td>
<td>WLCSP</td>
<td>2.8 to 5.5</td>
<td>One triple-phase buck (9A) and one single-phase buck (5A)</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9177</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>One dual-phase buck (6A)</td>
<td>PC</td>
<td>5</td>
</tr>
<tr>
<td>DA9211</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>Two single-phase bucks (5A each)</td>
<td>PC</td>
<td>5</td>
</tr>
<tr>
<td>DA9202</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>One 300mA buck and one 100mA LDO / Load Switch</td>
<td>I²C, SPI</td>
<td>5</td>
</tr>
<tr>
<td>DA9231</td>
<td>WLCSP</td>
<td>2.5 to 5.5</td>
<td>One 300mA buck plus one 100mA LDO / Load Switch</td>
<td>PC</td>
<td>1</td>
</tr>
</tbody>
</table>

### Easy development with SmartCanvas™ and Power Commander user interface

The Dialog SmartCanvas and Power Commander software equips hardware and software developers with a powerful graphical interface for viewing and controlling Dialog system PMICs, sub-PMICs, chargers, and DC/DC converters. The benefits include:

- **Any start-up sequence can be quickly tested in real-time**
- **Easy setup of the fully-programmable sequencer for bucks, LDOs, GPIOs, and system control signals**
- **Configuration of up to three power domains which are selectable via the sequencer, by GPIOs, or by software**
- **Fast debugging using the I²C interface for full visibility of the PMIC status**
Complete solutions for smartphone devices:

Sub-PMICs may feature:
- multi-phase high current bucks; power manager; GPIOs

Dialog Semiconductor is first in the industry to launch DA9313, an ultra-efficient Buck Converter that does not require the use of inductors. This differentiated technology is leading the way in optimizing next-generation mobile devices.

This family of devices - also referred to as Switched Cap Dividers - can offer up to 98% efficiency at high power levels. The combination of “almost loss-less” conversion and high power density make it ideally suited to power the emerging design trends in Smartphones. Major benefits of this unique technology include direct charging of single cell Lithium Ion batteries - enabling usage of standard 3A low-cost USB cables to deliver up to 6A of charging current, 75% reduced routing losses and more than 50% reduction in PCB board area – all within a package height of less than 1mm.

The DA9313 – Dialog’s 1st-Gen offering can provide up to 10A of current in a 10mm² offering with an extremely flat efficiency curve at a peak efficiency of 98.2% over a wide range of output current loads. It can also operate in a Master-Slave configuration to deliver up to 20A. The DA9313 also offers enable and power-good functions and can be configured to operate in a fixed-frequency mode.

The next-generation of this unique technology is in development and will be introduced to key customers during the 1st half of 2019 and to the broader market in late 2019.
Dialog offers a high-efficiency companion charger solution for rapid charging delivering up to 2.5 A charging current, and direct charging solutions that can deliver up to 6 A charging current to the battery using a standard 3 Amp USB cable. Dialog’s highly efficient inductor-less switched capacitor DC/DC converter enables 1S mobile devices to migrate to 2S battery configuration without any changes in the regulated voltage rails.

The DA9318 is a high-voltage inductor-less current doubler powering up to 44 W, with integrated protection features and incredible power efficiency of up to 98%, and has an input voltage range of 5.5 V to 10.5 V.

The DA9155M is a 2.5 A companion charger with 92% peak efficiency for 1S battery applications, and has an input voltage range of 4.3 V to 13.5 V for all rapid charging technologies.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DA9318</td>
<td>WLCSP</td>
<td>5.5 to 10.5</td>
<td>IN/2 L(8), M(10)</td>
<td>I2C</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>DA9155M</td>
<td>WLCSP</td>
<td>4.3 to 13.5</td>
<td>2.5</td>
<td>I2C</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
</tbody>
</table>

Smartphone charging ICs
Highly integrated, configurable and scalable solutions that are compact and efficient to fully meet the power management needs of today’s smartphones.

AC/DC RapidCharge™ controller solutions

As the leader in AC/DC RapidCharge solutions, Dialog supports more fast-charging protocols than any other supplier, including USB Power Delivery 3.0 (USB PD 3.0); Qualcomm® Quick Charge™ 4+, 3.0 and 2.0 technologies; Samsung Adaptive Fast Charging (AFC); direct charge; and other proprietary OEM protocols.

- USB Power Delivery 3.0
- Qualcomm® Quick Charge™ 4+
- Qualcomm® Quick Charge™ 3.0
- Qualcomm® Quick Charge™ 2.0
- Samsung Adaptive Fast Charging
- Direct Charge
- Other Proprietary OEM Protocols

Qualcomm® Quick Charge™ is a trademark of Qualcomm® Technologies Inc.
**iW662+iW1796 – low BOM cost 27W Qualcomm® Quick Charge™ 3.0 adapter solution**

- iW662 secondary-side synchronous rectifier and RapidCharge™ interface controller in one IC
- No start-up DFET
- iW662 and iW1796 use Dialog’s XM-Comm communication technology
- Eliminates need for optocoupler
- High power density for small form-factor up to 27W
- Low no-load power consumption < 20mW with fast dynamic load response
- Double-layer cable protection
- Over-voltage protection (iW662)
- Advanced fault control technology addresses soft shorts in cables and connectors (iW1796)
- Small, SOT23-6 package (iW1796)
- Optional support for Qualcomm® Quick Charge™ 2.0 and other RapidCharge™ protocols

**iW662+iW1798 – high-power 45W Qualcomm® Quick Charge™ 3.0 adapter solution**

- iW662 secondary-side synchronous rectifier and RapidCharge™ interface controller in one IC
- No start-up DFET
- iW1798 PrimAccurate™ primary-side controller
- Small, SOT23-6 package (iW1798)
- Optional support for Qualcomm® Quick Charge™ 2.0 and other RapidCharge™ protocols
- High power density for small form-factor up to 45W
- Low no-load power consumption < 20mW with fast dynamic load response
- Double-layer cable protection
- Over-voltage protection (iW662)
- Advanced fault control technology addresses soft shorts in cables and connectors (iW1798)
iW657P+iW1799+iW676 – complete system solution for USB Power Delivery 3.0 travel adapters

- USB-IF PD certified (USB PD 3.0 + PPS)
- Compatible with USB Type-C™ Rev. 1.2
- Secondary-side NMOS VBUS switch lowers system cost
- VCONN Support
- Low no-load power consumption < 20mW with fast DLR (dynamic load response)
- Optional VBUS OVP or X-cap discharge (iW1799)
- High power density for small form-factor up to 45W

Robust protection features
- Over-voltage protection
- Over-current protection
- Output short protection
- Active discharge
- VBUS switch output short protection
- AC unplug detection for direct charge (iW1799)
- D+/D-/CC1/CC2 over-voltage protection (iW657P)
- Integrated current sense (iW657P)

Optional VBUS output short protection
- VBUS switch output short protection
- AC unplug detection for direct charge (iW1799)
- D+/D-/CC1/CC2 over-voltage protection (iW657P)
- Integrated current sense (iW657P)

Optional support for:
- Qualcomm® Quick Charge™ 4+
- Direct Charge
- Other RapidCharge™ protocols

AC/DC RapidCharge™ adapter solutions

<table>
<thead>
<tr>
<th>Primary Side</th>
<th>Secondary Side</th>
<th>Qualcomm Quick Charge™</th>
<th>Direct Charge</th>
<th>USB Power Delivery™</th>
<th>Output Voltage</th>
<th>Secondary-to-Primary Communication</th>
<th>DLNK™ Additional Features</th>
</tr>
</thead>
</table>
| iW1782/iW636 | iW673 µF | 36 W | 5 V – 12 V | iW1790/iW1796 | 36 W | - D+/D- over-voltage protection (iW636)
| | | | | | | - Integrated SR for 90% efficiency (iW673) |
| iW1790/iW1796 | iW660/iW662 µF | 27 W | 1 V – 12 V | iW1798 | 45 W | - USB-IF PD certified USB PD 3.0 + PPS
| | | | | | | - D+/D- over-voltage protection (iW660, iW662)
| | | | | | | - Integrated SR for 90% efficiency (iW660, iW662) |
| iW1791/iW1797 | iW656P/iW657P | 27 W | 3.3 V – 12 V | iW1799 | 45 W | - USB-IF PD certified USB PD 3.0 + PPS
| | | | | | | - D+/D- over-voltage protection (iW656P, iW657P)
| | | | | | | - Integrated SR for 90% efficiency (iW656P, iW657P) |
| iW1798 | iW660/iW662 | 45 W | 3.6 V – 12 V | iW1799 | 45 W | - USB-IF PD certified USB PD 3.0 + PPS
| | | | | | | - D+/D- over-voltage protection (iW660, iW662)
| | | | | | | - Integrated SR for 90% efficiency (iW660, iW662) |

1) DLNK is Dialog’s digital communication from secondary to primary side via an optocoupler.
2) XM-Comm is Dialog’s proprietary digital communication via the main power transformer that eliminates the need for an optocoupler.

Qualcomm® Quick Charge™ is a product of Qualcomm Technologies, Inc.
Dialog’s iW1602+iW676 chipset offers an unmatched combination of high efficiency, low standby power and fast dynamic load response DLR\(^{(1)}\) enabling smartphone manufacturers to pack more power (higher power density) into smaller travel adapters without incurring thermal issues.

### iW1602 primary-side controller
- PrimAccurate™ primary-side current sensing eliminates secondary-side sense resistor
- Configurable light load operation mode optimizes for low no-load power consumption and fast DLR
- Up to 30 W output

### iW676 secondary-side active voltage position (AVP) controller
- Built-in synchronous rectifier
- Enables < 30 mW no-load power consumption and fast DLR

### Low BOM cost
- 80 mV ripple with single 470 µF output cap
- Low cost slow diodes
- SOT23 package

### Ideal for compact, high power density 5 V, 2 A 10 W smartphone adapters/chargers

### Double-layer cable protection
- Dedicated pins for external over-voltage protection with latch (iW1602)
- SmartDefender™ advanced hiccup technology (iW1602)

### Robust protection features
- Output short circuit protection
- Output over-voltage protection
- Output over-current protection
- Over-temperature protection

---

\(^{(1)}\) DLR: Dynamic Load Response - defined as \(V_{out}\) voltage deviation for load step from low to high output current.
AC/DC secondary-side ICs

<table>
<thead>
<tr>
<th>Product</th>
<th>Voltage Position Controller</th>
<th>Synchronous Rectifier Controller</th>
<th>Quiescent Current</th>
<th>Features</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>iW673</td>
<td></td>
<td></td>
<td>&lt; 450 µA at no load</td>
<td></td>
<td>SOT23-6</td>
</tr>
<tr>
<td>iW676</td>
<td></td>
<td></td>
<td>&lt; 650 µA at no load</td>
<td>25 V Output, optimized for lowest BOM cost in applications up to 12 V Optimized for direct charging applications down to 3 V</td>
<td>SOT23-6</td>
</tr>
<tr>
<td>iW873</td>
<td></td>
<td></td>
<td>&lt; 450 µA at no load</td>
<td>Integrated 60 V Power MOSFET</td>
<td>SO-8</td>
</tr>
</tbody>
</table>

Digital synchronous rectifiers replace Schottky diode for higher efficiency, ultra-compact power adapters – iW673, iW676

Features and Benefits
- Eliminates parallel Schottky diode for lower BOM cost
- Added benefits of iW676
  - 25 V output, optimized for lowest BOM cost in applications up to 12 V
  - Optimized for direct charging applications down to 3 V
  - Incorporates AVP (Active Voltage Positioning) for fast dynamic load response
### Haptics

Haptics technology recreates the sense of touch to the user by applying forces and vibrations in the form of touch feedback in displays, touch surfaces and buttons.

#### The DA728x - High definition, low power and flexible:

The DA728x family of High-Definition (HD) Haptic Drivers, combine custom drive sequences, on- and off-resonance, at up to 1kHz. The device can drive both ERC and LRA in narrow and wideband actuators and track resonance up to 300Hz to drive the most complex click/vibration touch effects in a wide range of applications.

#### Saving power when idle:

As haptic drivers spend the majority of their time in standby/idle mode, the DA728x family was designed to utilize very low idle current consumption (360nA) to maximize battery life.

The DA728x has an additional standby mode where current consumption drops to 5nA, making it an ideal driver for systems where the highest priority is current consumption when not in use.

The DA728x family combines very low idle current consumption with low-latency trigger inputs to minimize system power consumption. Integrated trigger inputs allow haptic operation without waking the application processor, and latency times at sub-1ms give real switch behavior - 10x better than any other solution available today.

#### Simplifying usage in touchscreen and capacitive touch systems:

<table>
<thead>
<tr>
<th>Product</th>
<th>Market Focus</th>
<th>Control Method</th>
<th># of input trigger pins</th>
<th>Lowest power mode</th>
<th>I²C Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA7280</td>
<td>General Market</td>
<td>I²C, PWM, GPI</td>
<td>3</td>
<td>360nA Idle</td>
<td>1</td>
</tr>
<tr>
<td>DA7281</td>
<td>Multi-LRA Systems</td>
<td>I²C, PWM, GPI</td>
<td>1</td>
<td>360nA Idle</td>
<td>4</td>
</tr>
<tr>
<td>DA7282</td>
<td>Wearables</td>
<td>I²C, PWM, GPI</td>
<td>3</td>
<td>5nA Standby</td>
<td>1</td>
</tr>
</tbody>
</table>

### DA728x Family Overview

- **Wideband LRA driver**: 25Hz to 1kHz with resonant mode Frequency tracking support up to 300Hz
  - Drives LRAs off-resonance for custom effects, or dual resonant systems for two-dimensional vibration
- **Up to 500mA output current**
  - Drive large or small LRAs and ERMs for the best haptic experience
- **350mA idle power mode with full I²C control and memory retention**
  - Ultra-low power consumption means longer battery life
  - Only 0.75ms latency when responding from ultra-low idle power state
- **On-the-fly diagnostics**
  - Detect issues with the LRA/ERM Automatically and generate interrupts
- **Three methods of drive for ease of use**
  - I²C, PWM and General Purpose Inputs (GPis)
- **5nA standby mode enabled in the DA7282**
Dialog Semiconductor Worldwide Sales Offices -

United Kingdom
(+44 1793 757 700)
Germany
(+49 7021 8050)
North America
(+1 408 845 8500)
The Netherlands
(+31 73 640 8822)
Japan
(+81 3 5769 5100)
Taiwan
(+886 2 80718888)
Hong Kong
(+852 3769 5200)
Korea
(+82 2 3469 8200)
China (Shenzhen)
(+86 755 2981 3669)
China (Shanghai)
(+86 21 5424 9058)

www.dialog-semiconductor.com
info@diasemi.com

This publication is issued to provide outline information only, which unless agreed by Dialog Semiconductor may not be used, applied, or reproduced for any purpose or be regarded as a representation relating to products. All use of Dialog Semiconductor products, software and applications referred to in this document are subject to Dialog Semiconductor’s Standard Terms and Conditions of Sale, available on the company website (www.dialog-semiconductor.com) unless otherwise stated.

Dialog and the Dialog logo are trademarks of Dialog Semiconductor plc or its subsidiaries. All other product or service names are the property of their respective owners. © Dialog Semiconductor 2020. All rights reserved.