



# New Product Announcement

## AP25810LQ

### USB Type-C Downstream-Facing Port Controller with 3A $V_{BUS}$ Power Switch for Automotive USB-C Charging

The DIODES™ AP25810LQ is an automotive-compliant USB Type-C® downstream-facing port (DFP) controller with an integrated 3A-rated  $V_{BUS}$  power switch.

This  $V_{BUS}$  switch has a 30mΩ on-resistance with two selectable fixed-current limits that align with the USB Type-C current levels.

When an upstream-facing port (UFP) device is attached, the AP25810LQ's CC lines detect this and apply power to the  $V_{BUS}$ . It also advertises the  $V_{BUS}$  current-sourcing capability to the UFP via the pass-through CC line. If using an electronically marked cable, the AP25810LQ also applies  $V_{CONN}$  power to the cable CC pin.

The AP25810LQ typically draws less than 0.7μA when no device is attached, which saves system standby power.

The part is available in the thermally enhanced W-QFN3040-20 (Type A1) package.

*Automotive-compliant – AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.*

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#### The DIODES™ Advantage

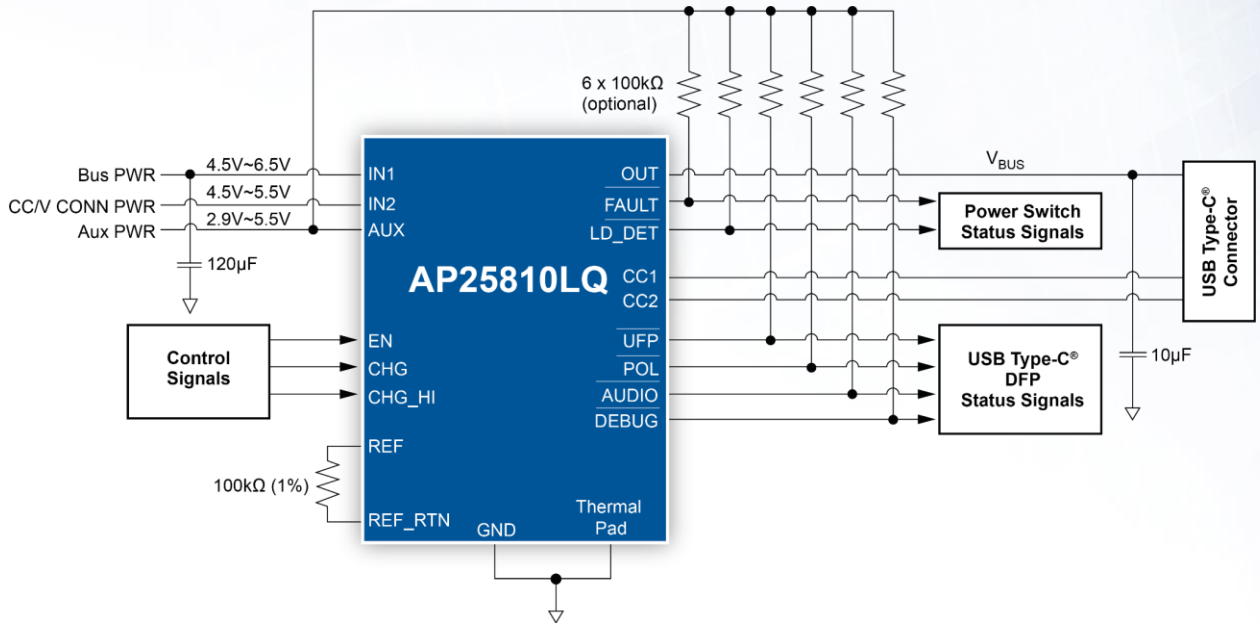
**The highly integrated USB Type-C DFP controller with  $V_{BUS}$  switch is suitable for automotive USB-C charging applications.**

- **Selectable High-Accuracy Current Limit of 1.7A or 3.4A**  
Flexible  $V_{BUS}$  power ratings of 7.5W or 15W according to input power capability
- **Low 0.7μA Standby Current When a Port is Not Attached**  
Saves system power in standby operations
- **Higher Power Bus Supply Range to 6.5V**  
Supports cable voltage drop compensation and keeps port  $V_{BUS}$  voltage to be higher than 4.75V under 3A operation
- **Low 30mΩ On-Resistance  $V_{BUS}$  Power Switch**  
Reduces power dissipation and voltage drop
- **Quickly Detects Cable Orientation and Device Attachment**  
CC1 and CC2 pins detect attachment to the port and quickly resolve orientation

#### Applications

- Infotainment systems
- ADAS systems
- Backseat USB charging

## Application Circuit



## USB Type-C DFP

Part Number	IN1 / IN2 Range ( $V_{BUS}/V_{CONN}$ Supply)	AUX Range (Device Supply)	Max Current ( $V_{BUS}$ )	Max Current ( $V_{CONN}$ )	Typ $R_{ON}$ ( $V_{BUS}/V_{CONN}$ )	Ambient Temp. Range	Package
	V	V	A	mA	mΩ	°C	
<a href="#">AP25810LQ</a>	4.5 to 6.5 / 4.5 to 5.5	2.9 to 5.5	1.5 or 3 (Selectable)	350	30/365	-40 to +85	W-QFN3040-20 (Type A1)

## Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
<a href="#">AP25810LQDFZ20-13</a>	<a href="#">Automotive</a>	W-QFN3040-20 (Type A1)	MSL-1	3,000	13" Tape & Reel