USB Type-C Charger ID with QC 2.0 and Legacy

FEATURES
- USB Type-C v1.1 Cable Detect
- Support Source and Source/Sink
- Built-in discharge path for QC & Type-C
- Pass QC 2.0/UL certification
- Fully support Quick Charge 2.0:
    Class A: 5V, 9V, and 12V
    Class B: 5V, 9V, 12V and 20V
- Fully support BC1.2 DCP mode
- Fully support Legacy Devices Fast Charging
- Automatic Selection for different mode
- ±8KV ESD Protection on DP/DM

APPLICATIONS
- Wall adapter
- Car Chargers
- Power bank Charging port
- USB power output ports
- USB Power Plugs

PACKAGES
- TSSOP-14L
- TSSOP-10L
- TSSOP- 8L

GENERAL DESCRIPTION

CY2813 is an auto identification chip of different charger types including Type-C, QC 2.0 Class A, BC 1.2 DCP modes, and legacy. The detection procedure firstly performs Type-C detection(for CY2813-14L and CY2813-10L) based on USB Type-C specification v1.1 for Downstream Facing Port. Meanwhile, low power mode is designed(CY2813-14L) for power bank application. And then, USB BC 1.2 DCP mode is enabled. After that, the Legacy (500mA USB 2.0, 900mA USB 3.0, 2A for D+/D- at 2.7V) detection is completed.

In addition, the QC2.0 detection is implemented with class A or B capability, where Vbus can support 5V, 9V, 12V(for class A and B) or 20V (for class B only) according to QC 2.0 protocol handshake results. If QC2.0 device is absent, the detection procedure will go back and stay at Legacy mode until cable is disconnected. CY2813 covers most of the popular fast charging mechanisms including emerging Type-C connector and provide customers with better user's experience for portable devices, especially mobile phones and tablet.

In order to offer high C/P products, CY2813 is categorized in 3 different packages as the following table 1:

	Role Selection	TYPE C CC / Rp	QC2.0 Class A/B	BC1.2 DCP D+/- short	Legacy D+/D- 2.7v	PIN counts packaging
CY2813-14L	Source/Sink	V	A	V	V	TSSOP-14L
CY2813-10L	Source	V	A	V	V	TSSOP-10L
CY2813-8L	Source		A/B	V	V	TSSOP-8L

Table 1.   CY2813-14L/10L/8L Features Mapping