

USB Type-C DFP Controller

FEATURES

- 3.0V~5.5V Single Supply Operation.
- USB Type-C Rev. 1.2 Compliant DFP Controller
- Support Type-C VBUS 3.0A Current
- VBUS Switch Control.
- Available in SOT23-6 Package.

APPLICATIONS

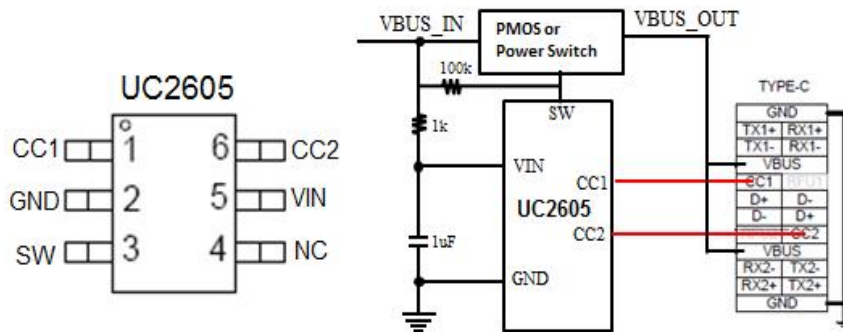
- Power Adapter
- Travel Charger

- Wall USB Charger

DESCRIPTION

The UC2605 is an autonomous Source only Type-C controller optimized power chargers and mobile chargers. It broadcasts the available current of the charger over CC1/CC2 using the USB Type-C standard and prevents VBUS from being asserted until a valid connection has been verified. It can be used for up to 16.5W charging using Type-C protocols

PACKAGE AND SIMPLIFIED APPLICATION

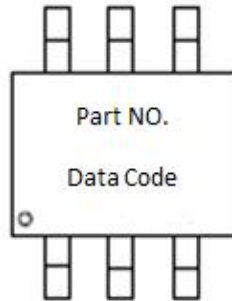


ORDING INFORMATION

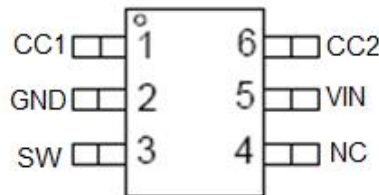
| Part Number | Package Type | Package Qty | Op Temp(°C) |
|-------------|--------------|-------------|-------------|
| UC2605 | SOT23-6 | 3000 | -40~85 |

USB Type-C DFP Controller

MARK INFORMATION



PINOUT



PIN FUNCTIONS

| NO. | NAME | TYPE ⁽¹⁾ | DESCRIPTION |
|-----|------|---------------------|---|
| 1 | CC1 | O/I | Analog input/output that connects to the Type-C receptacle CC1 pin |
| 2 | GND | G | Ground |
| 3 | SW | O/I | Output Control for VBUS |
| 4 | NC | O/I | No Connection |
| 5 | VIN | P/I | Power supply/Input voltage connected to Power Switch; connect a 1 μF or greater ceramic capacitor from IN to GND as close to the IC as possible |
| 6 | CC2 | O/I | Analog input/output that connects to the Type-C receptacle CC2 pin |

(1) G = Ground, I = Input, O = Output, P = Power

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ABSOLUTE MAXIMUM RATINGS (1)

Over recommended operating free-air temperature range (unless otherwise noted)

| PARAMETER | | MIN | MAX | UNIT |
|------------------------------------|-------------------|------|-----|------|
| Supply Voltage Range | V _{IN} | -0.3 | 7.0 | V |
| Input voltage range | DP,DM, | -0.3 | 5.8 | |
| ESD rating, Human Body Model (HBM) | V _{IN} , | | 7 | kV |
| | CC1,CC2 | | 7 | |
| Operating Junction Temperature | T _J | -40 | 125 | °C |
| Storage Temperature Range | T _{stg} | -65 | 150 | |

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Over operating free-air temperature range (unless otherwise noted)

| THERMAL METRIC | | | UNIT |
|----------------|--|-----|------|
| θ_{JA} | SOT23-6 Package thermal impedance ⁽¹⁾ | 235 | °C/W |

(1) The package thermal impedance is calculated in accordance with JESD 51-7.

RECOMMENDED OPERATING CONDITIONS

| PARAMETER | | MIN | MAX | UNIT |
|--------------------|---------------------------------|-----|-----|------|
| V _{IN} | Input voltage of IN | 4.5 | 6.5 | V |
| V _{DP/DM} | CC1,CC2 data line input voltage | | 5.5 | |
| T _J | Operating Junction Temperature | -40 | 125 | °C |

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ELECTRICAL CHARACTERISTICS

Conditions are: $T_A = 25^\circ\text{C}$, $V_{IN} = 5.0\text{ V}$. Positive current are into pins. All voltages are with respect to GND (unless otherwise noted).

| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNIT | |
|-----------------------|-------------------------|------------------|-----|-----|------|----|
| SUPPLY CURRENT | | | | | | |
| I_{IN} | VIN ON supply current | | 230 | | μA | |
| I_{INI} | VIN idle supply current | CC1/CC2 floating | 0 | 5 | | |
| UFP Mode | | | | | | |
| I_{SRC} | Sourcing current | | 297 | 330 | 363 | uA |

PACKAGE INFORMATION

SOT23-6

