

Preliminary Data Sheet

MAIN FEATURES

- Standalone USB PD sink controller
 - USB PD3.0 Version1.1
 - Type-C 1.4
 - Non-PPS
- Legacy charging sink
 - Apple Divider 3 detection
 - BC1.2 SDP, CDP and DCP detection
- Dead battery support
- 3.0 to 25V operation
- I²C access for advanced PDO request
- Configurable resistor Rd
- Available in 3mmx3mm DFN-10L package

DESCRIPTIONS

The HUSB238 is a highly integrated USB Power Delivery (PD) controller as sink role for up to 100W power rating. It's compatible with PD3.0 and Type-C V1.4. It can also support Apple Divider 3 and BC1.2 while the source is attached. It can be used in electronic devices that have legacy barrel connectors or USB micro-B connectors for power such as drones, smart speakers, power tools, and other rechargeable devices.

The HUSB238 is available in 3mmx3mm DFN-10L package.

ORDER INFORMATION

Part Number	Package	Dimension
HUSB238	DFN-10L	3.0mmx3.0mm

APPLICATIONS

PD sink devices

TYPICAL APPLICATION

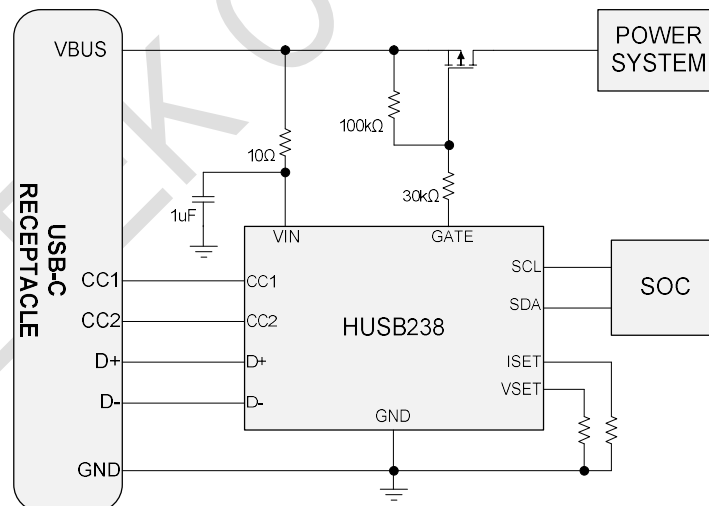
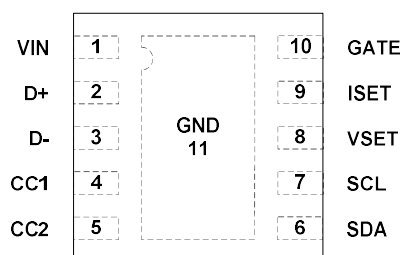


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PIN ASSIGNMENT



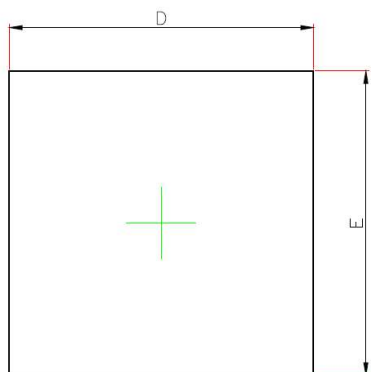
Pin	NAME	DESCRIPTION
1	VIN	Connect to VBUS of USB Type-C connector. Connect this pin to GND via a 1uF ceramic capacitor.
2	D+	Positive line of USB 2.0 data line for Apple Divider 3 and BC1.2
3	D-	Negative line of USB 2.0 data line for Apple Divider 3 and BC1.2
4	CC1	Configuration line 1 used to negotiate a voltage/current with the attached adapter
5	CC2	Configuration line 2 used to negotiate a voltage/current with the attached adapter
6	SDA	This pin is the I ² C communication data signal.
7	SCL	This pin is the I ² C communication clock signal.
8	VSET	Connect a resistor to indicate the maximum voltage needed by the system from the attached power adapter. Internal 100uA source current is connected to this pin.
9	ISET	Connect a resistor to indicate the maximum current needed by the system from the attached power adapter. Internal 100uA source current is connected to this pin.
10	GATE	Open drain gate drive output. Connect this signal to the gate of a FET through a series resistor. This pin is the output of a PMOS FET gate driver.
11	GND	Ground plane. All signals are referred to this pin

OVERVIEW

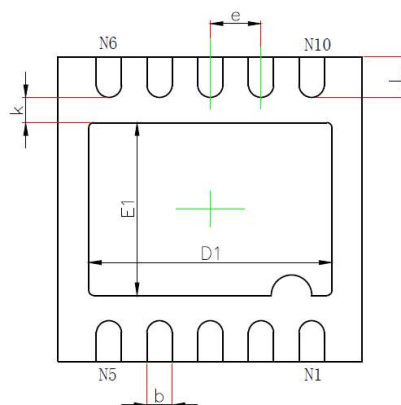
The HUSB238 is a highly integrated USB Power Delivery (PD) controller as sink role. It's compatible with PD3.0 and Type-C V1.4. It can also support Apple Divider 3 and BC1.2 while source is attached. When HUSB238 is connected to power source, it first applies R_d to both CC lines, trying to establish USB Type-C connection. After the USB Type-C connection is established, it will monitor the CC line to get Source Capabilities pack from USB PD Source. If there is valid Source Capabilities pack before time out, the HUSB238 policy engine will request a power supply with voltage no greater than the programmed request voltage. If there is no valid Source Capabilities pack before time out, it will switch to Apple divider 3 and BC 1.2 mode trying to determine corresponding charging protocol.

PACKAGE AND FOOTPRINT

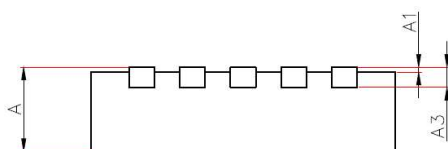
DFNWB3×3-10L (P0.50T0.75/0.85) PACKAGE OUTLINE DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700/0.800	0.800/0.900	0.028/0.031	0.031/0.035
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.300	2.500	0.091	0.098
E1	1.600	1.800	0.063	0.071
k	0.200MIN.		0.008MIN.	
b	0.200	0.300	0.008	0.012
e	0.500TYP.		0.020TYP.	
L	0.324	0.476	0.013	0.019

DFN-10L package