CP2112

Single Chip HID USB to SMBus Master Bridge

Single-Chip HID USB to SMBus Master Bridge

- Integrated USB transceiver; no external resistors required
- SMBus master device
- GPIO can be configured as Input/Output and Open-Drain/Push-Pull
- 512 Byte SMBus data buffer
- Integrated 194 Byte One-Time Programmable ROM for storing customizable product information
- On-chip power-on reset circuit
- On-chip voltage regulator: 3.45 V output

USB Peripheral Function Controller

- USB Specification 2.0 compliant; full-speed (12 Mbps)
- USB Suspend states supported via SUSPEND and $\overline{\text{SUSPEND}}$ pins

HID Interface

- Standard USB class device requires no custom driver
- Windows 7, Vista, XP, Server 2003, 2000
- Win CE 6.0, 5.0, and 4.2
- Mac OS X
- Linux
- Open access to interface specification

Windows and Mac HID-to-SMBus Libraries

- APIs for quick application development
- Supports Windows 7, Vista, XP, Server 2003, 2000
- Supports Mac OS X

SMBus Configuration Options

- Configurable Clock Speed
- Device Address: 7-bit value that is the slave address of the CP2112. The device will only ACK this address, but will not respond to any read/write requests
- Read/Write Timeouts
- SCL Low Timeout
- Retry Counter Timeout

GPIO Interface Features

- 8 GPIO pins with configurable options
- Usable as inputs, open-drain or push-pull outputs
- Configurable clock output for external devices
  - 48 MHz to 94 kHz
- Toggle LED during SMBus reads
- Toggle LED during SMBus writes

Supply Voltage

- Self-powered: 3.0 to 3.6 V
- USB bus powered: 4.0 to 5.25 V
- I/O voltage: 1.8 V to V_{DD}

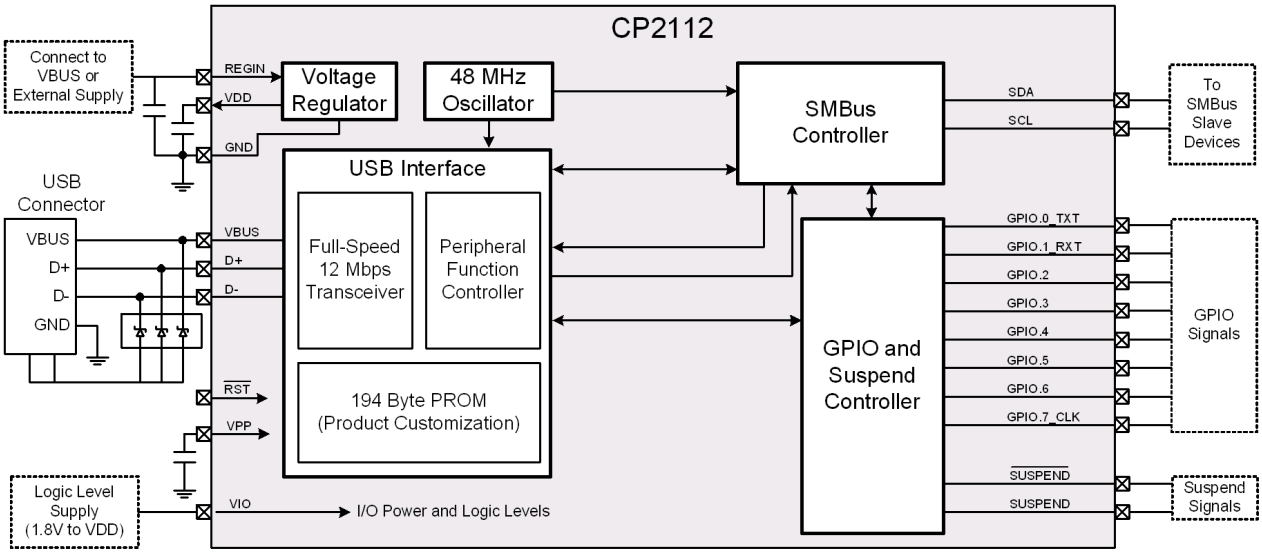
Ordering Part Number

- CP2112-F01-GM

Package

- RoHS-compliant 24-pin QFN (4 x 4 mm)

Temperature Range: –40 to +85 °C

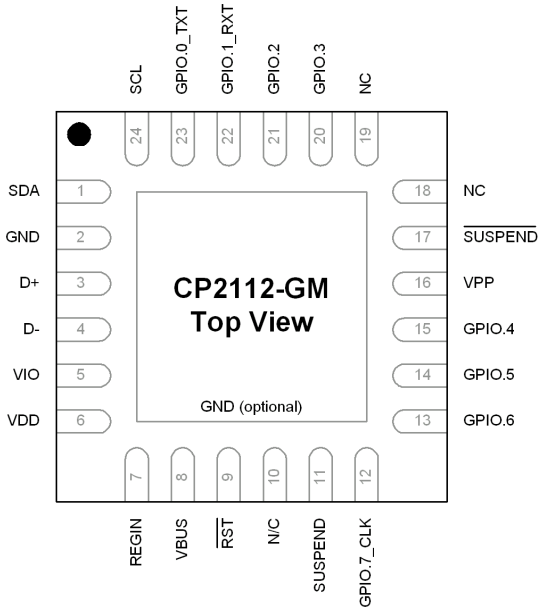


Selected Electrical Specifications

–40 to +85 °C unless otherwise specified.

Parameter	Conditions	Min	Typ	Max	Units
Input Voltage Range (REGIN)		3.0	—	5.25	V
Regulator Output Voltage	Output Current = 1 to 100 mA*	3.3	3.45	3.6	V
VBUS Detection Input Threshold		2.5	—	—	V
Bias Current		—	—	120	µA
***Note:** The maximum regulator supply current is 100 mA. This includes the supply current of the CP2112.					

Package Information



QFN-24 Pinout Diagram (Top View)

CP2112EK Evaluation Kit

The CP2112EK allows a complete evaluation and customization of the CP2112 USB-to-SMBus bridge including all GPIO functions, flow control, RS485 transceiver control and transmit and receive LEDs.

- Includes Windows and Mac libraries
- USB cable and serial cable
- CD ROM with complete documentation