Highly-Integrated e-Marker Chip for USB Type-C Cables

FEATURES

- USB Type-C 1.2 and PD 2.0/3.0 compliant
- Support SOP' and SOP" with the same chip
- Support extended messages
- BMC transmitter with EMI control
- BMC receiver with high noise immunity
- Built-in isolators (diodes) and Ra resistors
- Built-in LDO without external capacitor
- Embedded MTP for e-Marker data
- MTP programming through CC line or I2C
- Programmable I2C master/slave
- Up to 4 programmable GPIO pins
- Support Vconn operation at 3V- 5.5V
- Low standby current below 200uA
- Low operation current below 3mA
- Ambient temperature range: −40°C to 85°C
- Package: WDFN-8, WLCSP-8

APPLICATIONS

- USB Type-C full featured cable ID (e-Marker)
- Simple USB Type-C port controller

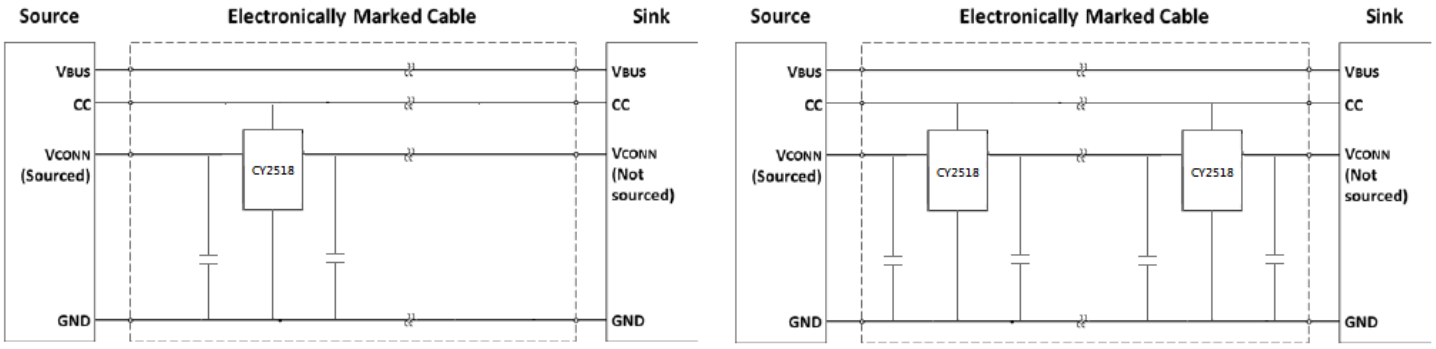
GENERAL DESCRIPTION

CY2518 is an USB Type-C e-Marker for Cable ID applications. It is compliant with USB Type-C Specification Revision 1.2 and USB Power Delivery Specification Revision 2.0 and 3.0.

Powered from VC1 or VC2, CY2518 can determine to act as SOP' or SOP". After completing the Discover ID procedure, CY2518 can weaken the Ra resistor for saving power. CY2518 can power itself by the built-in regulator without any external component, and automatically power the second e-Marker if presented. Minimize the number of discrete components, so as the total BOM cost.

The built-in MTP can be programmed through CC line or I2C so that it will be flexible for in-system programming. The firmware can be programmed one-time only, while the 'Cable ID Data' can be programmed up to 8 times. CY2518 has four multi-functional digital IO pins. By default, they are programmed as two GPIO and I2C pins.

Meanwhile, due to support USB Type-C Port Controller Interface Specification Revision 1.0, CY2518 can also provide an easy way to implement USB PD communication for the host.



Type-C Cable with e-Marker at one of its ends

Type-C Active Cable with e-Marker at both of its ends

Figure 1. A low BOM-cost e-Marker Solution for Type-C Cables Based on CY2518