



# USB Type-C SuperSpeed Active Switch

## PTN36043x

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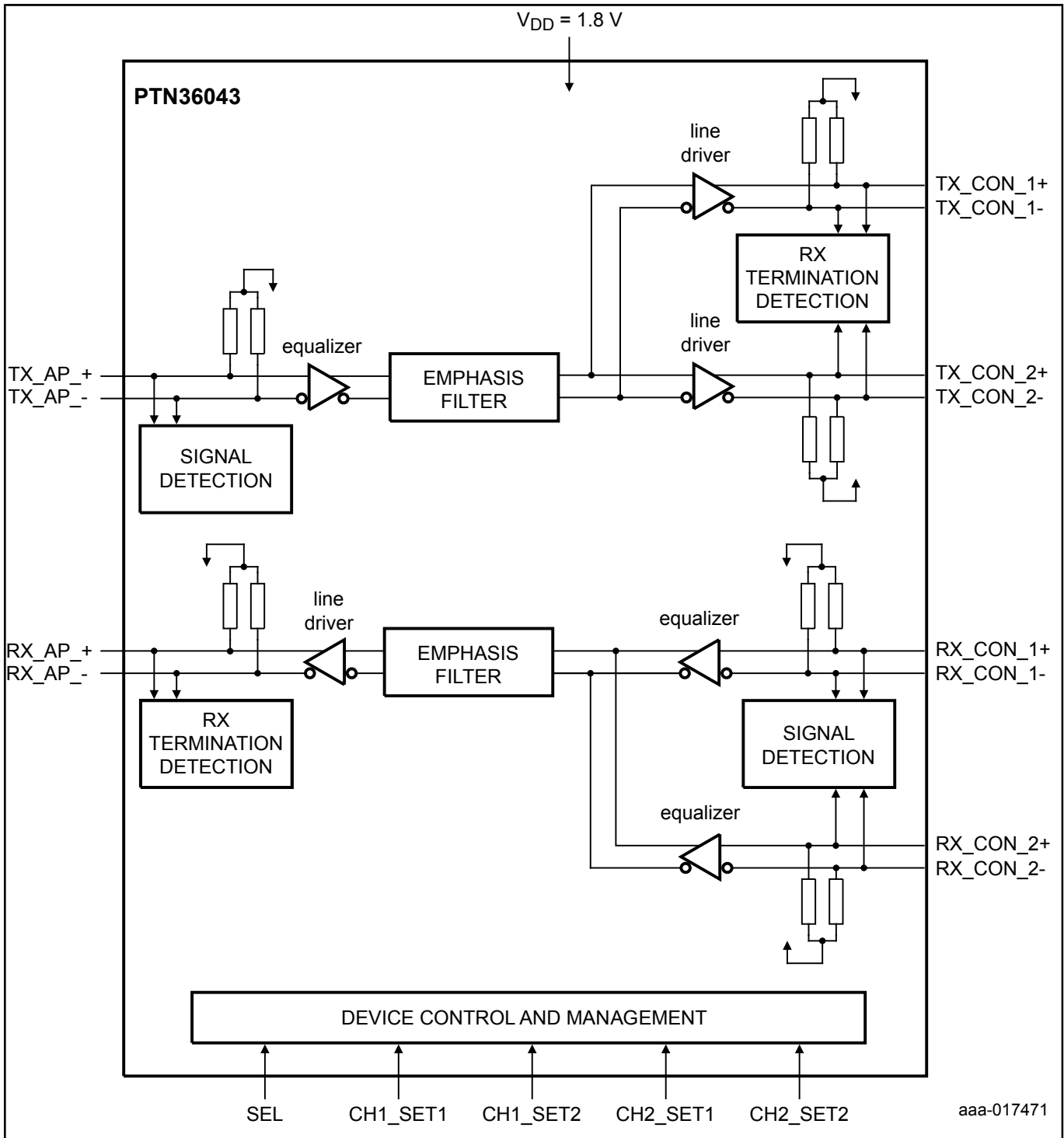
PTN36043A/B is a very small, low power 2 differential channel 2 to 1 active multiplex/demultiplexer switch with integrated SuperSpeed USB 3.1 Gen 1 (also known as USB 3.0) redriver IC that can switch two differential signals to one of two locations. The active switch has optimized performance with minimized crosstalk, as required by the high-speed serial interface for USB-Type C connector. PTN36043A/B allows expansion of existing high-speed ports for very low-power consumption.

With integrated USB 3.1 Gen 1 redriver, signal quality is enhanced by performing receive equalization on the deteriorated input signal followed by transmit de-emphasis maximizing system link performance. With its superior differential signal conditioning and enhancement capability, the device delivers significant flexibility and performance scaling for various systems with different PCB characteristics and cable channel conditions and still benefit from optimum power consumption.

PTN36043A/B has a built-in advanced power management capability that enables significant power savings under various different USB 3.1 Gen 1 Low-power modes (U2/U3). It can detect link electrical conditions and can dynamically activate/de-activate internal circuitry and logic. The device performs these actions without host software intervention and conserves power.

Design configuration within the PTN36043B allow a pass-through state when the link observes continuous polling, with low frequency periodic signaling (LFPS) is one channel and electrical idle in the other.

### PTN36043A/B Block Diagram



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