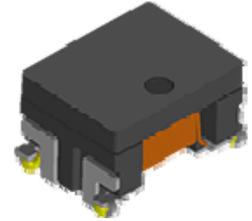# ADL3225VT Series Power Inductor

Power Supply Inductor for Power over Data Line

TDK's ADL3225VT was designed for use in high speed in-vehicle LAN applications as power inductor in a Power Over Data Line circuit. The weight of the wire harness in an in-vehicle LAN has a direct impact on fuel consumption. As a result, Power over Coax (PoC) has been incorporated into the design of in-vehicle LANs to carry both signal transmission and power supply lines, thus reducing the weight of the wire harness. Typically, multiple components must be combined to achieve the broadband characteristics required for PoC, which reduces the amount of space available on the board. TDK's ADL3225VT power inductor provides a space-saving solution with a single component that achieves high impedance in the broadband range that is equivalent to the impedance characteristics achieved in a conventional setup using multiple power supply inductors. The ADL3225VT has a high self-resonant frequency and good DC superimposition characteristics through an original coil design and construction different to that of a conventional power inductor.

Features

- High quality and reliability in part construction due to completely automated manufacturing process

- AEC-Q200 compliant

- Operating temperature of −40°C to +150°C

- Storage temperature range of −40°C to +150°C after the circuit board is mounted

Applications

- Power over Coax in Automotive LAN

- FPD-LINK III

Power

AEC-Q200

Lead Free · Halogen Free · REACH · RoHS COMPLIANT

Datasheet Link

ADL3225VT Series Information

Part Number	ADL3225VT-4R7M-TL000	ADL3225VT-100M-TL000
Case Size	3.2mm x 2.5mm x 2.3mm ±0.2mm	3.2mm x 2.5mm x 2.3mm ±0.2mm
Inductance	4.7µH±20%	10µH±20%
Isat (typ.)	720mA	450mA
Itemp (typ.)	1500mA	1300mA
DC Resistance (max.)	100mΩ	150mΩ
Pieces per Reel	6,000	6,000

ADL3225VT Series Power Inductor Comparison
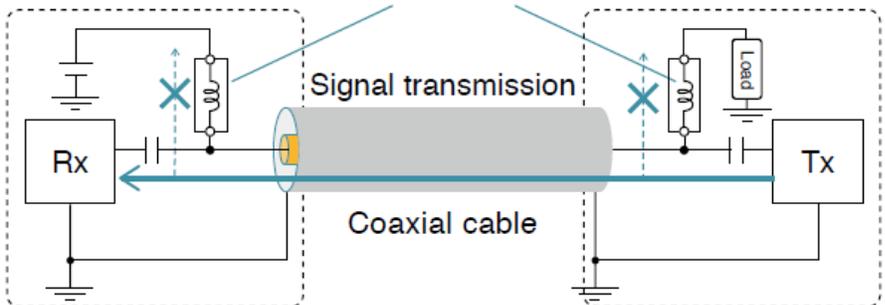## Conventional Format vs. PoC (Power Over Coax)

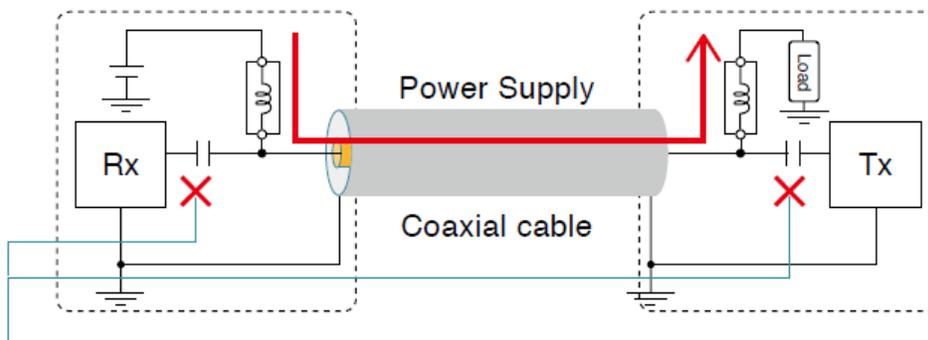### Conventional Format (Transmission line / Power line)
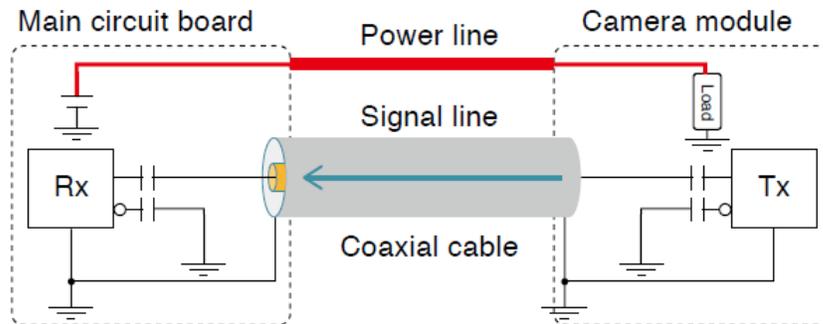
PoC: Power Over Coax (Signal Line + Power line)

《Viewed from the signal line》

The impedance of the inductor increases at high frequencies,and prevents distortion of the data signal line.

《Viewed from the power Line》

The inductor allows the DC current provided by power supply to pass, however the capacitor preventing influx into the driver.