DTE Detection Revisited

Kevin Brown

Broadcom Corporation

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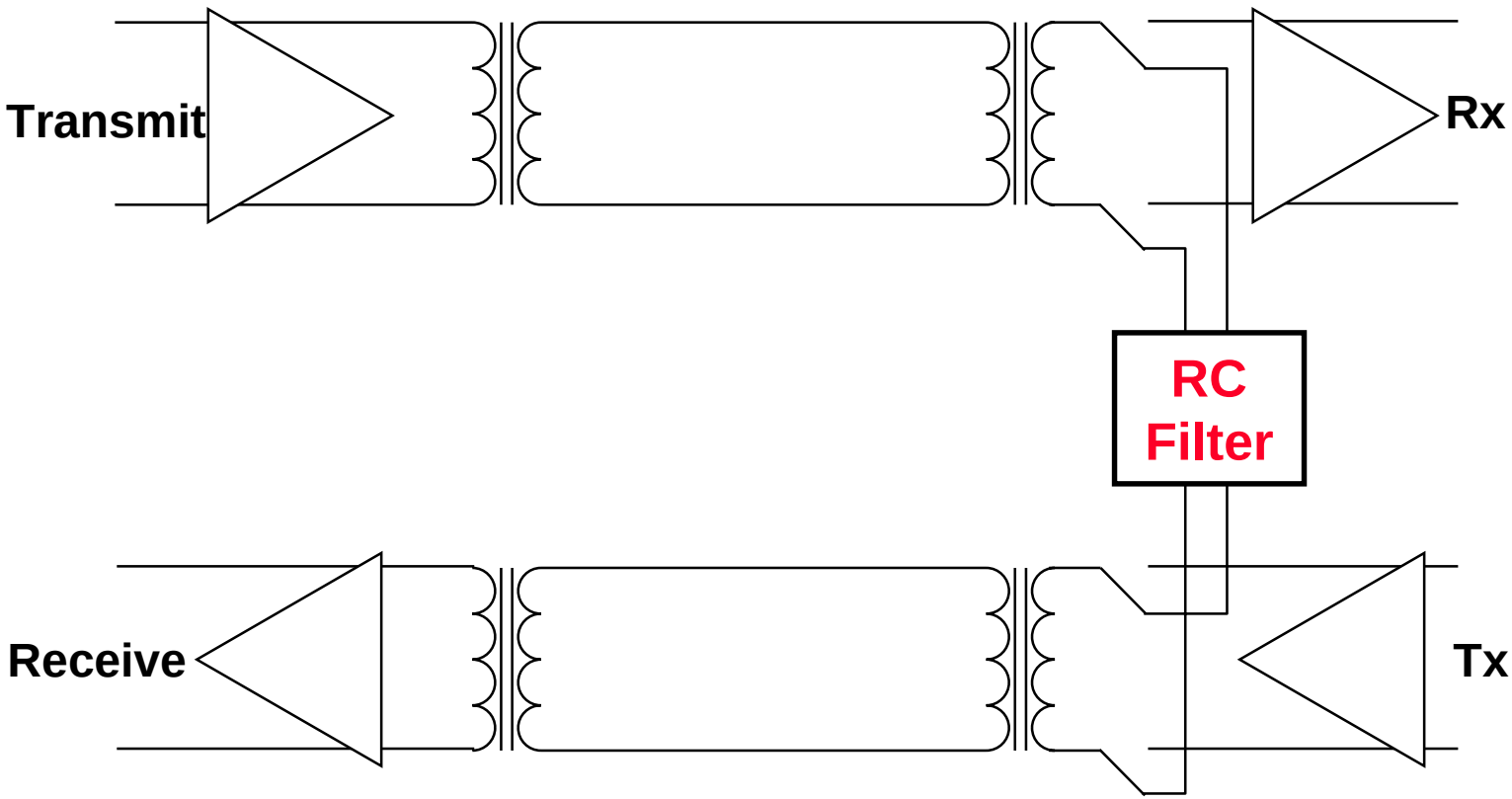
Differential Signalling for DTE Detection Based on Filtered Loopback onn Data Pair

Switch /
DTE Detecting Station

End station
DTE Requiring Power



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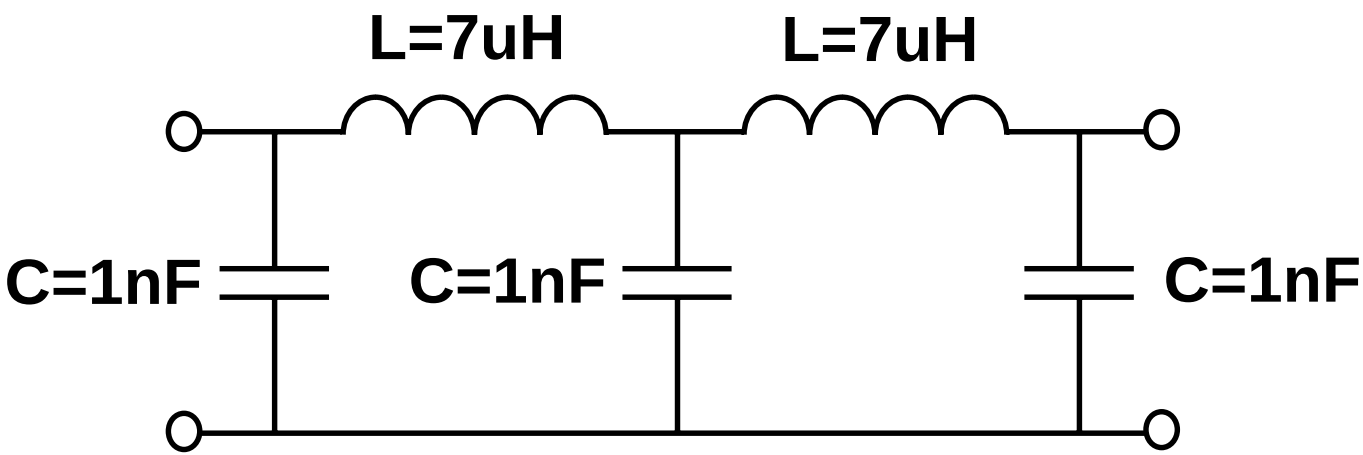
5th Order Loopback Filter



- **Blocks 5MHz signals**
  - ➢Kills 100ns NLP's, FLP's, 10BASE-T
- **Passes 1MHz signals**
  - ➢Passes Modified Pulses with ~1us width

Loopback Filter

	1MHz	2MHz	5MHz	10MHz
Nominal	+2.6	-2.6	-33.4	-60.1
+40% caps	+3.1	-1.05	-40.3	-66.1
-40% caps	+0.8	-2.3	-22.0	-50.8

- **Blocks 5MHz signals**
  - ➢Kills 100ns NLP's, FLP's, 10BASE-T
  - ➢At zero cable length, 200 ns pulse is attenuated at least 22 dB, below signal detect threshold of 325mV
- **Passes 1MHz signals**
  - ➢Modified Pulses with 1us width are not attenuated

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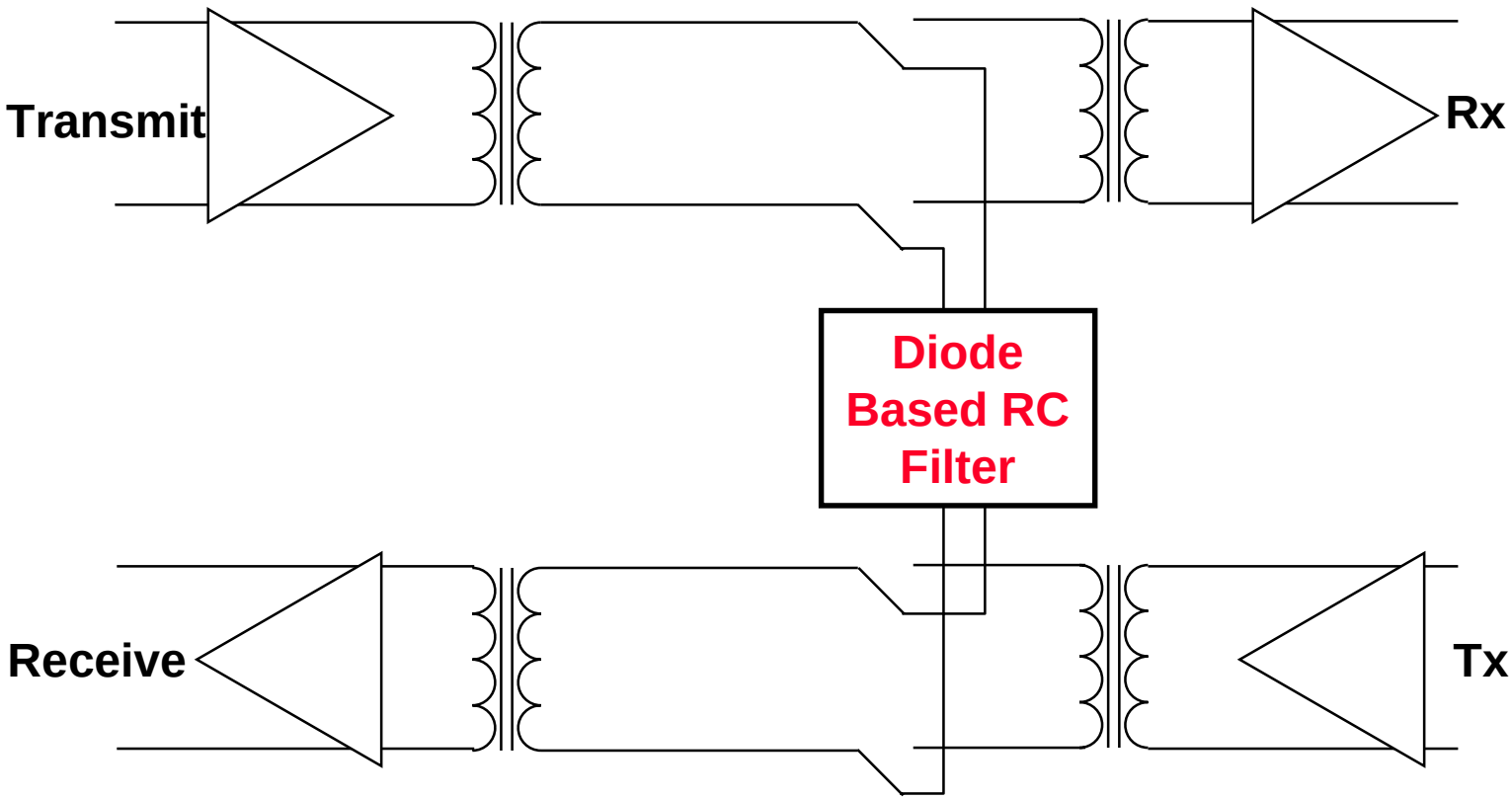
Revised Filter:
For Differential or Common Mode Signalling

Switch /
DTE Detecting Station

End station
DTE Requiring Power



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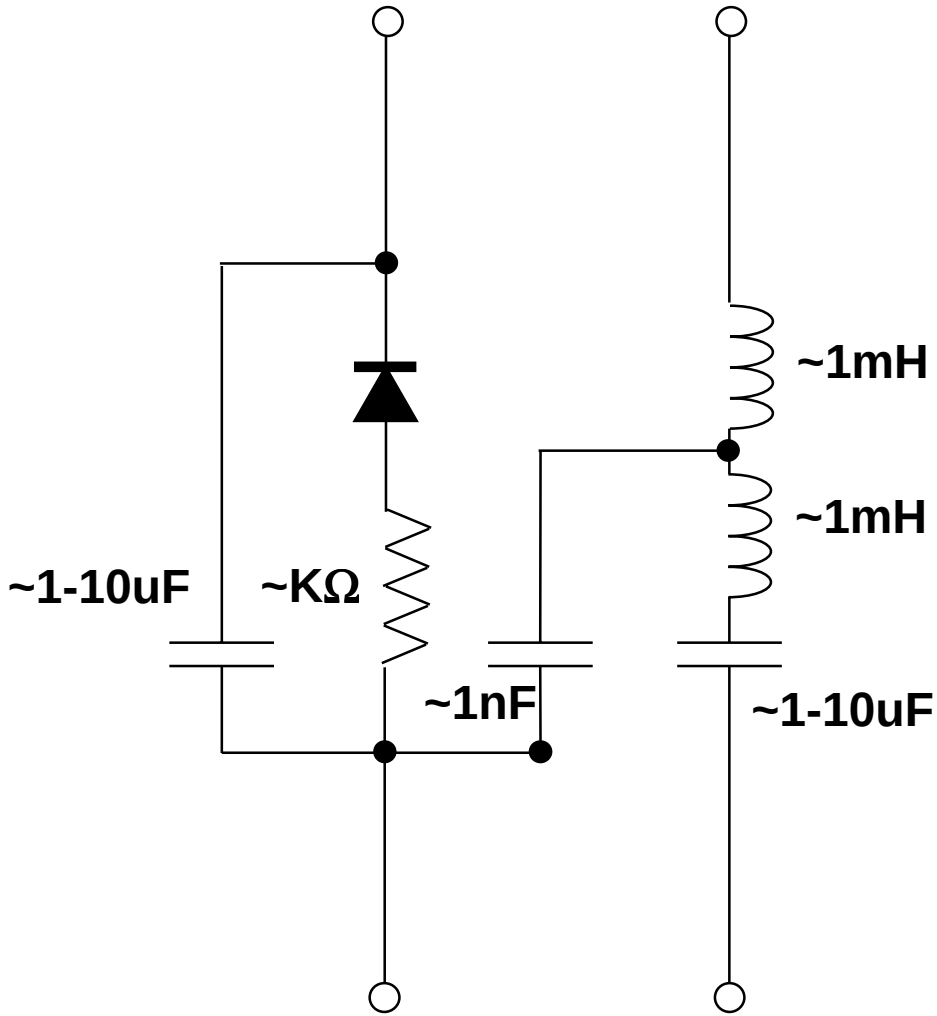
New Proposed Filter

Suitable for Differential or Common Mode Signaling
Combines Low Pass Characteristic with Diode Detection



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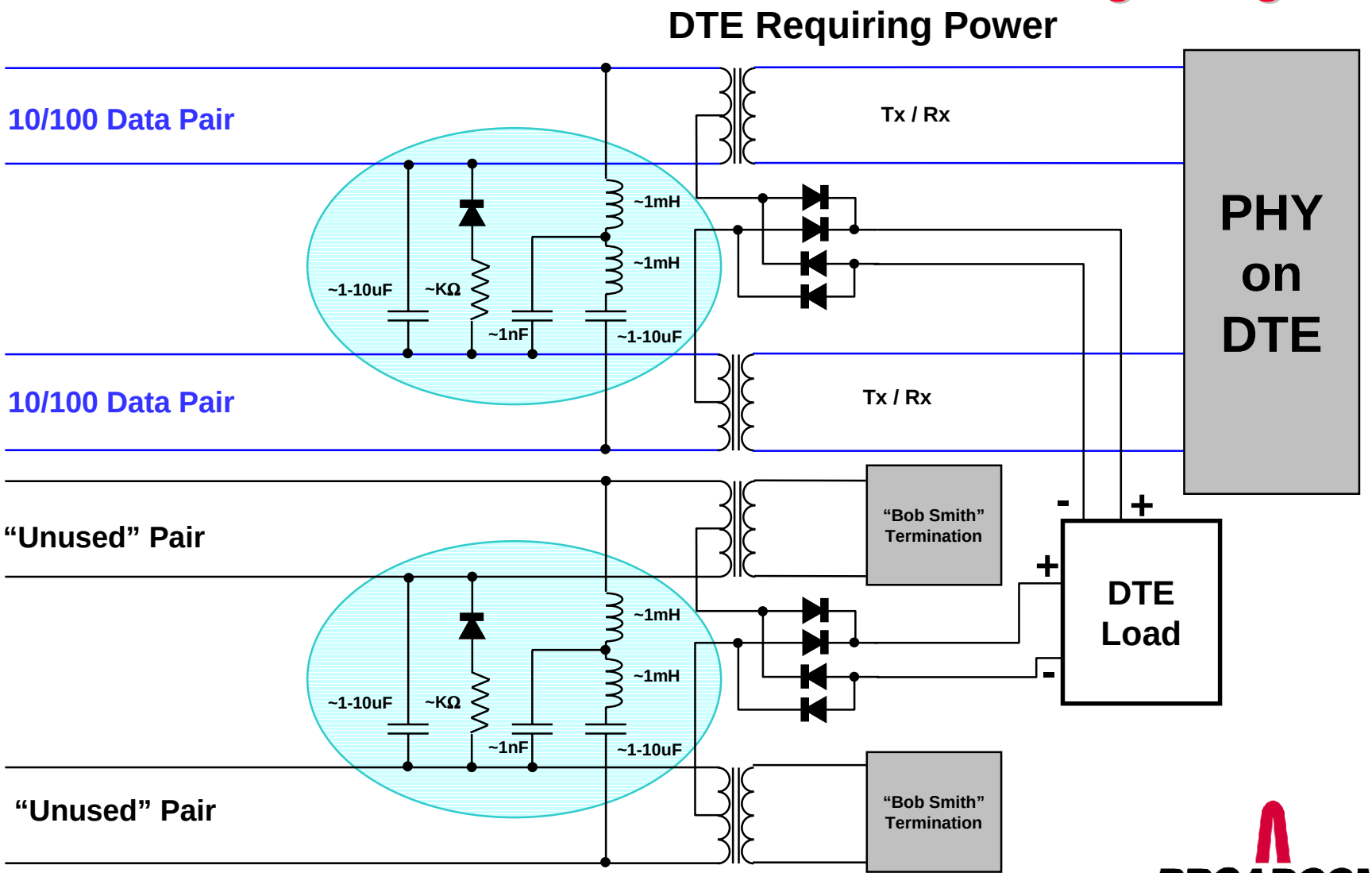
New Proposed Filter

Suitable for Differential or Common Mode Signaling



Advantages of Combined Filter

- **Provides a low-pass filter characteristic for differential DTE detection**
- **Suitable for signaling by a 10/100 PHY, for low cost switch implementation**

- **Provides a diode characteristic for common mode DTE detection**
- **Suitable for signaling at a midspan insertion point**

- **A single DTE signature for either set of pairs (or both)**

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