

HIGH SPEED LAN MAGNETICS

960010A

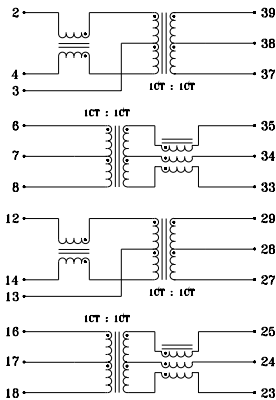
- Dual, 2-port designs offer optimal board design layout and per port cost efficiencies
- Tested for use with multiple 10/100 Mbps and 100 Mbps PHY transceivers requiring 1:1 Tx and Rx transformers
- Low profile, SMT packaging, rated to withstand 225°C peak IR reflow temperature
- Available with and without impedance matching common mode termination on the transmit channel
- 2000 Vrms RMS isolation

ELECTRICALS AT 25°C

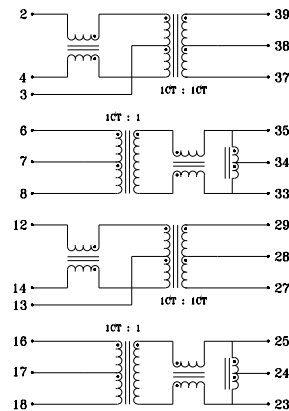
| Part No. | Insertion Loss (dB) Typ 1MHz-100MHz | Return Loss (dB) Min 1MHz-30MHz | Return Loss (dB) Min 30MHz-60MHz | Return Loss (dB) Min 60MHz-80MHz | Crosstalk (dB) Min 1MHz-100MHz | Common to Diff Mode Rej (dB) Min | | Common to Common Mode Rej (dB) Min | | Schematic |
|--------------|--|------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|----------------------------------|--------|------------------------------------|--------|-----------|
| | | | | | | 30MHz | 100MHz | 30MHz | 100MHz | |
| S558-5999-75 | -1.0 | -16 | 16-20log(f/30MHz) | -10 | -35 | -50 | -40 | -40 | -30 | B |
| S558-5999-79 | -1.0 | -16 | 16-20log(f/30MHz) | -10 | -35 | -50 | -40 | -40 | -30 | C |
| S558-5999-84 | -1.0 | -16 | 16-20log(f/30MHz) | -10 | -30 | -50 | -40 | -40 | -30 | A |
| S558-5999-98 | -1.0 | -16 | 16-20log(f/30MHz) | -10 | -35 | -50 | -40 | -40 | -30 | D |

SCHEMATICS

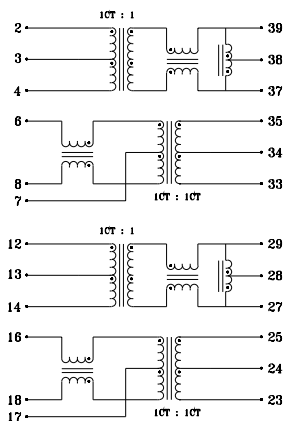
A



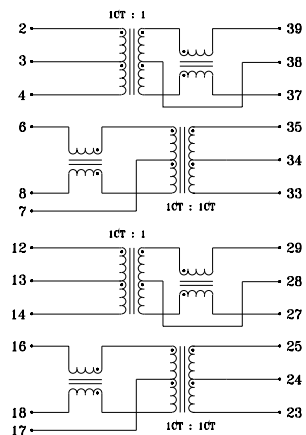
B



C



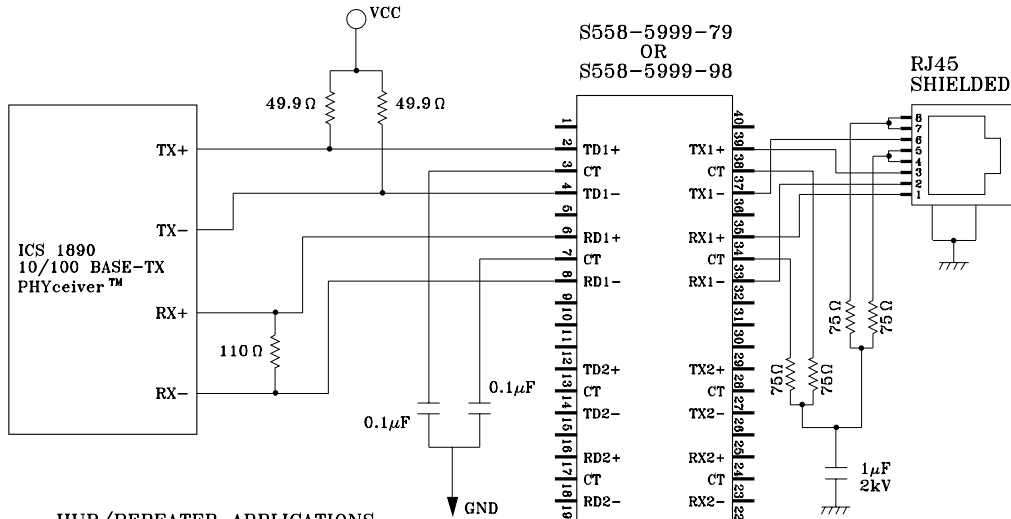
D



Specifications subject to change without notice.

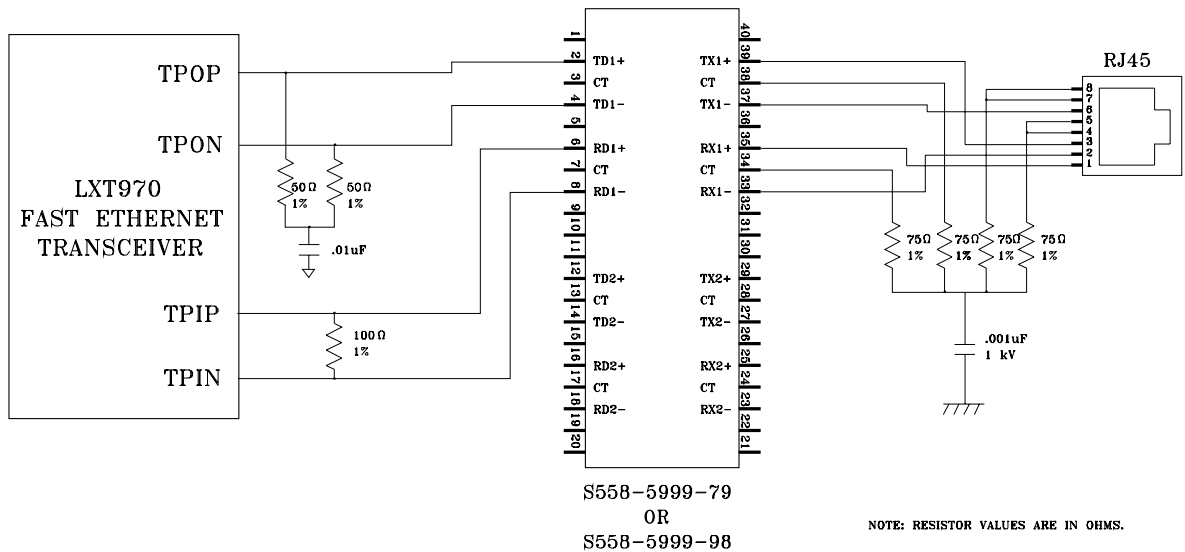
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APPLICATION CIRCUITS (CONT'D)



HUB/REPEATER APPLICATIONS

NOTE: FOR DETAILED SCHEMATIC, PLEASE REFER TO ICS APPLICATION NOTE



TYPICAL HUB APPLICATION (SINGLE CHANNEL ONLY)

NOTE: RESISTOR VALUES ARE IN OHMS.

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defining a degree of excellence

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APPLICATION NOTES

- Bel has designed these part types for use in either 100 Mbps or 10/100 Mbps multi-port applications, where the PHY transceiver requires a list of recommended 1:1 transmit and receive isolation transformer ratios. Please refer to the Bel short form catalog for recommendations of mating semiconductors. These dual, 2-port devices provide high isolation transformers, signal wave shaping, fast but controlled rise times, EMI and common mode noise suppression. All part types meet IEEE 802.3 standards, which includes a requirement for 350 μ H OCL (inductance) at 8mA DC bias applied. Use of these Bel part types provides optimum space and cost per port efficiency with no sacrifice in performance versus similar single port devices.
- Each dual, 2-port device is available with or without an impedance matching common mode termination. A balanced board layout and precise selection of discrete components used in conjunction with the termination is critical for proper functionality. For the background on how to correctly implement this termination, or for information on how to eliminate this circuit entirely, please review Bel's separate application note.
- Bel's low profile, surface mount packaging is ideal for high speed pick and place machinery. Parts can be shipped on tape and reel for high speed placement. Construction processes have been implemented for thermal compatibility with high temperature IR reflow assembly processing. Post dipping of leads assist with PC board solderability. Each part is optically inspected to meet rigid coplanarity requirements.

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