

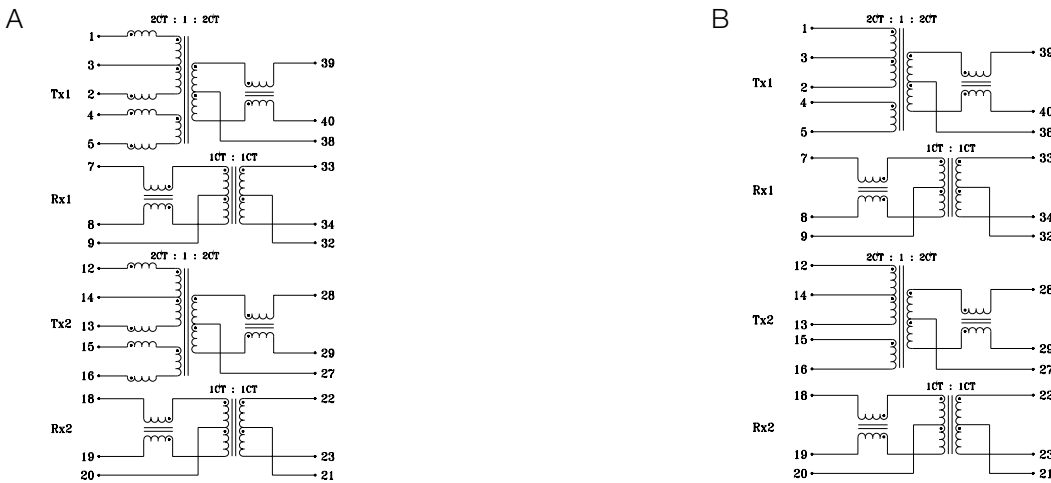
# HIGH SPEED LAN MAGNETICS

- Designed to enhance performance with National Semiconductor 10/100 Mbps DSP 83840/83223 chipset
- Split input on transmit channel provides better balance of differential output signal and greater isolation between 10Base-T and 100Base-TX transceivers
- Cost efficient, multi-port solution
- Compact package fits behind two RJ-45 connectors
- Split design allows common mode chokes to address 10 Mbps or 100 Mbps independent of each other
- Single port options also available, P/N S558-5999-36 and S558-5999-37
- 2000 Vrms isolation

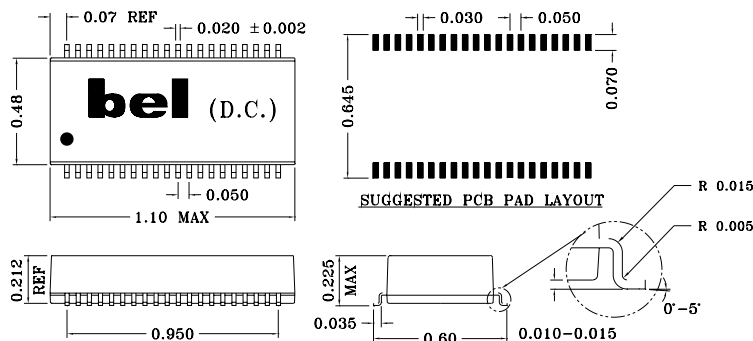
## ELECTRICALS AT 25°C

Part No.	Insertion Loss (dB) Typ	Return Loss (dB) Min	Return Loss (dB) Min	Return Loss (dB) Min	Crosstalk (dB) Min	Common to Diff Mode Rej (dB) Min		Common to Common Mode Rej (dB) Min		Schematic
	1MHz-100MHz	1MHz-30MHz	30MHz-60MHz	60MHz-80MHz	1MHz-100MHz	30MHz	100MHz	30MHz	100MHz	
S558-5999-65	-1.0	-16	16-20log(f/30MHz)	-10	-35	-50	-40	-40	-30	A
S558-5999-91	-1.0	-16	16-20log(f/30MHz)	-10	-35	-50	-40	-40	-30	B

## SCHEMATICS

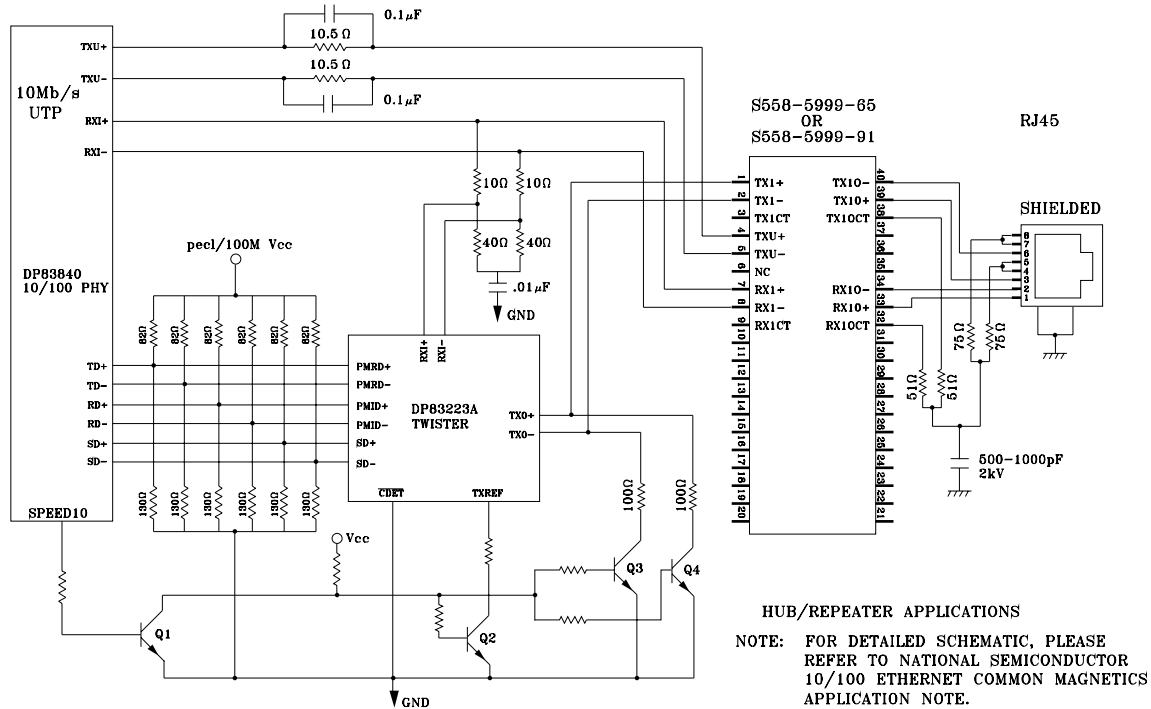


## MECHANICAL



Specifications subject to change without notice.

## APPLICATION CIRCUIT



## APPLICATION NOTES

- These Bel dual, 2-port devices have been uniquely designed for either 100 Mbps or 10/100 Mbps data transmission systems over category 5 UTP/STP cable. These Bel parts have been tested and qualified for use with the National Semiconductor DP83223 TP-Transceiver and DP83840 10/100 Mbps PHY device, and can also be used with chipsets from Intel (82555) and Texas Instruments (TNETE 223). Please consult the Bel short form catalog for recommended mating semiconductors. Each Bel module provides superior EMI noise suppression, high voltage isolation, wave shaping and fast, but controlled rise times. All parts meet IEEE 802.3 standards, which includes 350μH OCL (inductance) when 8mA of DC bias is applied.
- The Bel unique design approach allows for separation of the 10 Mbps and 100 Mbps signals, creating better signal balance, superior noise suppression, optimization of performance for each 10 Mbps and 100 Mbps signal and ease of magnetics design. This approach also allows for the addition of either a 10 Mbps or 100 Mbps common mode choke, which could not be effectively implemented if the 10 Mbps and 100 Mbps shared the same signal lines.
- 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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