



**THE DATASHEET OF  
1000B-5001XNL**



# 10/100/1000 BASE-T SINGLE & DUAL PORT TRANSFORMER MODULE



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- Compliant with IEEE 802.3ab for 1000 Base-T
- 350µH OCL with 8mA bias at extended temperatures
- Storage Temperature: -55°C to +125°C
- Operating Temperature:
  - 1000B-5001/5002/5003: -40°C to +85°C
  - 1000B-5001X/5002X/5003X: -55°C to +125°C
- IC grade transfer-molded package withstands 235°C peak temperature profile; RoHS version withstands 245°C
- Moisture Sensitivity Level: 3

## Electrical Specifications @ 25°C

Part Number	Insertion Loss (dB MAX)					Return Loss (dB MIN)				Crosstalk (dB MIN)			CM to CM Rejection (dB MIN)			DM to CM Rejection (dB MIN)			HiPot (Vrms)
	0.10 MHz	30 MHz	60 MHz	80 MHz	100 MHz	30 MHz	60 MHz	80 MHz	100 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	100 MHz	60 Hz
1000B-5001	1.2	1.2	1.2	1.2	1.2	18	12	10	10	43	37	33	40	35	30	43	37	33	1500
1000B-5001X	1.4	1.4	1.4	1.4	1.4	18	12	10	8	43	37	33	40	35	30	43	37	33	1500
1000B-5002	1.2	1.2	1.2	1.2	1.2	18	14	12	10	43	37	33	40	35	30	43	37	33	1500
1000B-5002X	1.2	1.2	1.2	1.2	1.2	18	14	12	10	43	37	33	40	35	30	43	37	33	1500
1000B-5003	1.2	1.2	1.2	1.2	1.2	18	14	11	9	43	37	33	40	35	30	43	37	33	1500
1000B-5003X	1.2	1.2	1.2	1.2	1.2	18	14	11	9	43	37	33	40	35	30	43	37	33	1500

### NOTES:

- Add suffix "NL" for RoHS compliant version; i.e. 1000B-5001 becomes **1000B-5001NL**. NL parts have 100% SN Lead Finish (MSL:4)
- For Tape & Reel packaging, add "T" suffix at the end of the part number: i.e. **1000B-5001NLT**

### Mechanicals

### Electrical Schematics

#### 1000B-5001/X

Dimensions: inch [mm]  
Tolerance (unless otherwise specified): ±0.010 [0.25]

0.700 [17.78] MAX  
0.490 [12.45] MAX  
0.630±0.015 [16.00±0.38]  
0.500 [12.70]  
0.650 [16.51]  
24X 0.020 [0.51]  
22X 0.050 [1.27]  
24X 0.030 [0.76]  
22X 0.050 [1.27]  
0.550 [13.97]  
0.235 [5.97] MAX  
0.010 [0.25]  
0.004 [0.10]  
24 SURFACES  
24X 0° - 8°  
24X 0.045 [1.14]

PCB PAD PATTERN (REFERENCE ONLY)

CHANNEL 1: (TC1) 1, (TD1+) 2, (TD1-) 3, 24 (MC1), 23 (MX1+), 22 (MX1-)

CHANNEL 2: (TC2) 4, (TD2+) 5, (TD2-) 6, 21 (MC2), 20 (MX2+), 19 (MX2-)

CHANNEL 3: (TC3) 7, (TD3+) 8, (TD3-) 9, 18 (MC3), 17 (MX3+), 16 (MX3-)

CHANNEL 4: (TC4) 10, (TD4+) 11, (TD4-) 12, 15 (MC4), 14 (MX4+), 13 (MX4-)

LEGEND:  
C H I P S I D E: Td ↔ Mx  
M E D I A S I D E: Td ↔ Mx  
All channels are in phase between input and output



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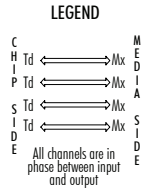
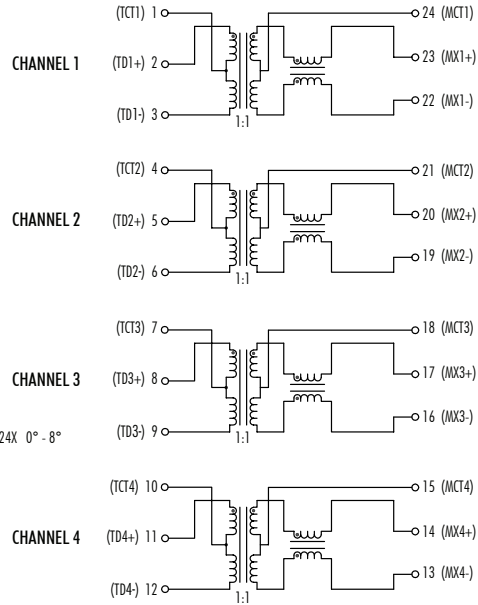
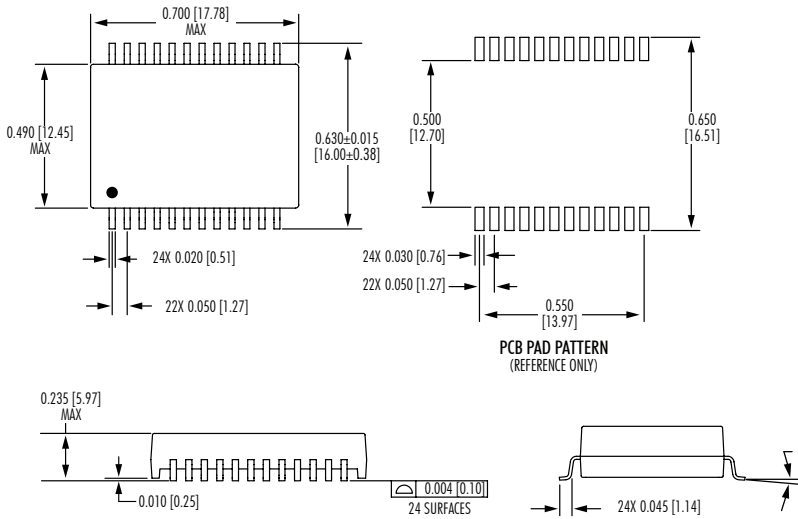
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## Mechanicals

## Electrical Schematics

1000B-5002/X

Dimensions: inch [mm]  
Tolerance (unless otherwise specified): ±0.010 [0.25]

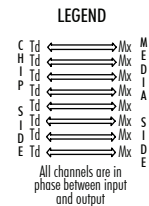
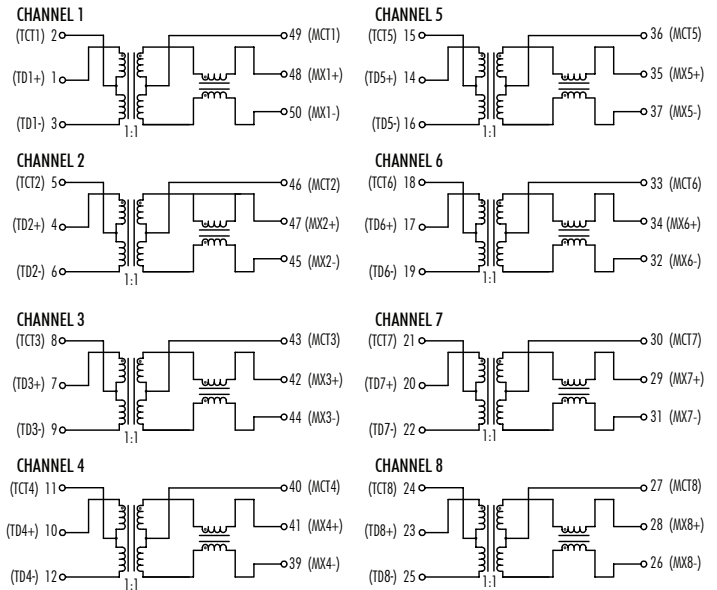
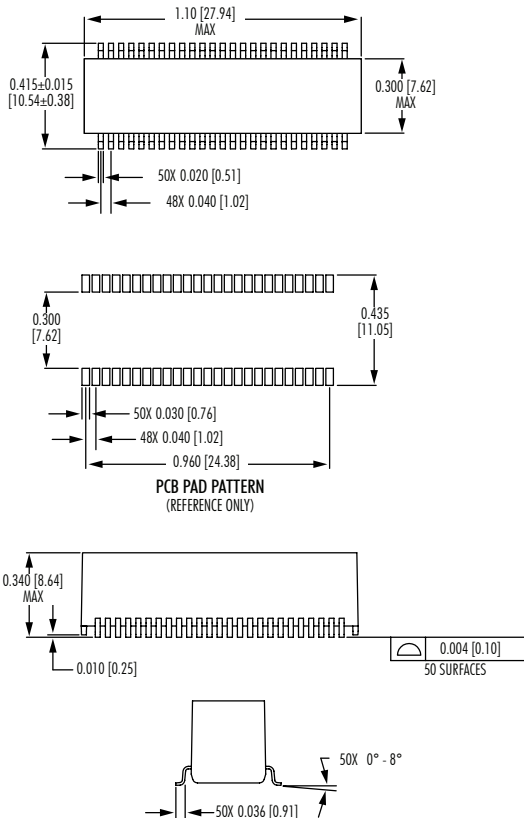


## Mechanicals

## Electrical Schematics

1000B-5003/X

Dimensions: inch [mm]  
Tolerance (unless otherwise specified): ±0.010 [0.25]



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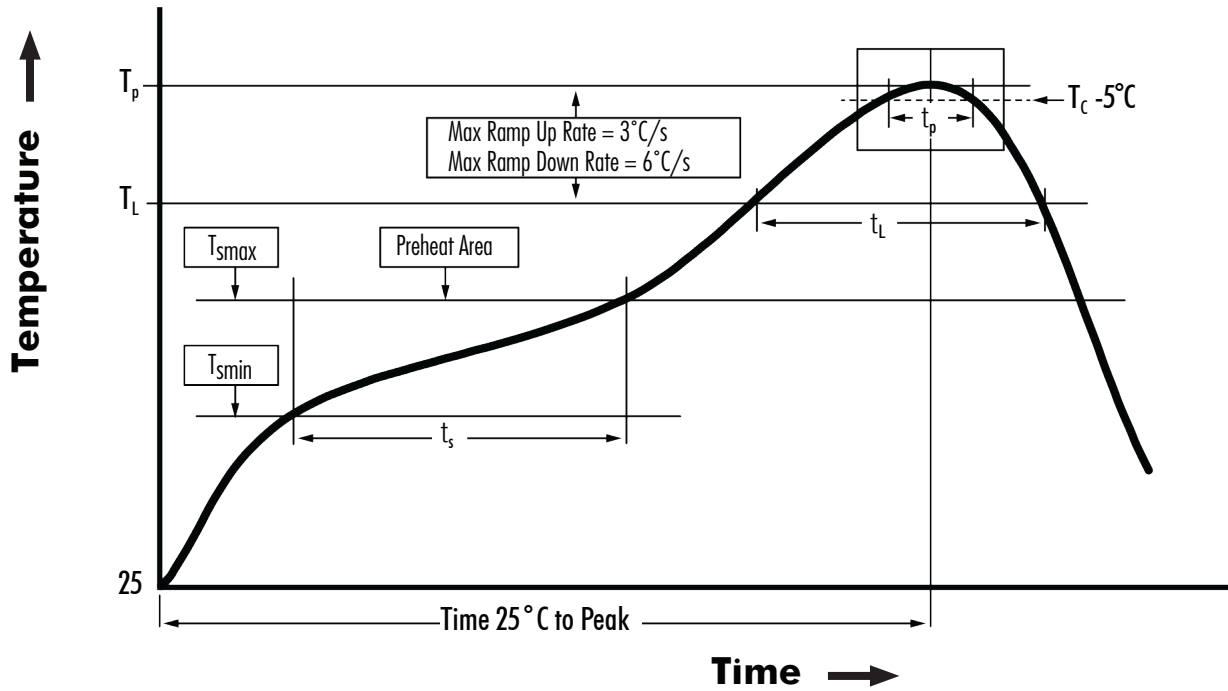
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# 10/100/1000 BASE-T SINGLE & DUAL PORT TRANSFORMER MODULE



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## Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)



$T_{SMIN}$ (°C)	$T_{SMAX}$ (°C)	$T_L$ (°C)	$T_P$ (°C MAX)	$t_s$ (s)	$t_L$ (s)	$t_p$ (s MAX)	Ramp-up rate ( $T_L$ to $T_p$ )	Ramp-down rate ( $T_p$ to $T_L$ )	Time 25°C to peak temperature (s MAX)
100	150	183	235	60 - 120	60 - 150	20	3°C/s MAX	6°C/s MAX	360

### NOTES:

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2



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