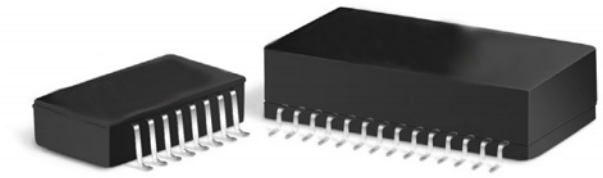
IEEE 1394B FIRE WIRE 1.062Gb TRANSCEIVER LINE INTERFACE MODULE

Copperhead™ Series



- Low power dissipation
- Low transmit/receive jitter
- Recommended for distances up to 20 meters
- Small package incorporating active transmit and passive receive circuits with integrated isolation transformers.
- Electrostatic-Sensitive Device (ESD)
- Operating & Storage Temperature: -55°C to +125°C
- Lead Finish: Sn63Pb37
- Moisture Sensitivity Level: 3

TRANSMITTER - Electrical Specifications @ 25°C

Part Number	Input Data Voltage						Input Voltage Differential			Input Current		Differential Signal Level		
	VIL (V)			VIH (V)			VIN (mV)			IIL (µA)	IIH (µA)	VOUT (mV)		
	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MAX	MAX	MIN	TYP	MAX
TM1062DUXB	1.35	1.63	1.88	2.07	2.33	2.58	150	800	1200	40	150	1350	1400	1500
TM1062HUXB	1.35	1.63	1.88	2.07	2.33	2.58	150	800	1200	500	750	1350	1400	1500
TM1062DU3XB	1.35	1.63	1.88	2.07	2.33	2.58	150	800	1200	500	750	1350	1400	1500
TM125TXHUA	1.35	1.63	1.88	2.07	2.33	2.58	150	800	1200	500	750	1350	1400	1500
TM125TX3DUA	1.35	1.63	1.88	2.07	2.33	2.58	150	800	1200	500	750	1350	1400	1500

TRANSMITTER - Additional Electrical Specifications @ 25°C

Part Number	Power Dissipation (mW)	Θja (°C/W)		Input Voltage (V)	Data Rate DR (Mb/s)		Total P-P Transmit Jitter * (pS)		Output Rise-Fall Time (20-80%) * (pS)		Return Loss (dB)
	TYP	@85°C	@125°C	TYP	MIN	MAX	TYP	MAX	MIN	MAX	MIN
TM1062DUXB	232	41	39	3.30	246	1062	62	94	275	400	12
TM1062HUXB	232	41	39	3.30	246	1062	62	94	275	400	12
TM1062DU3XB	700	34	30	3.30	246	1062	62	94	275	400	12
TM125TXHUA	232	41	39	3.30	98	246	62	94	275	400	12
TM125TX3DUA	700	41	39	3.30	98	246	62	94	275	400	12

TRANSFORMER COUPLED RECEIVER - Electrical Specifications @ 25°C

Part Number	Turns Ratio	Primary Inductance LM (µH)	Rise Time (20-80%) (pS)	Data Rate DR (Mb/s)		Winding Resistance DCR	Insertion Loss (dB)	Return Loss (dB)
	TYP	MIN	MAX	MIN	MAX	TYP	MAX	MIN
TM1062DUXB	1:1	4.5	300	246	1062	0.20	2	12
TM1062HUXB	1:1	4.5	300	246	1062	0.20	2	12
TM1062DU3XB	1:1	4.5	300	246	1062	0.20	2	12
TM125TXHUA	1:1	44	300	98	246	0.20	2	12
TM125TX3DUA	1:1	44	300	98	246	0.20	2	12

NOTES:

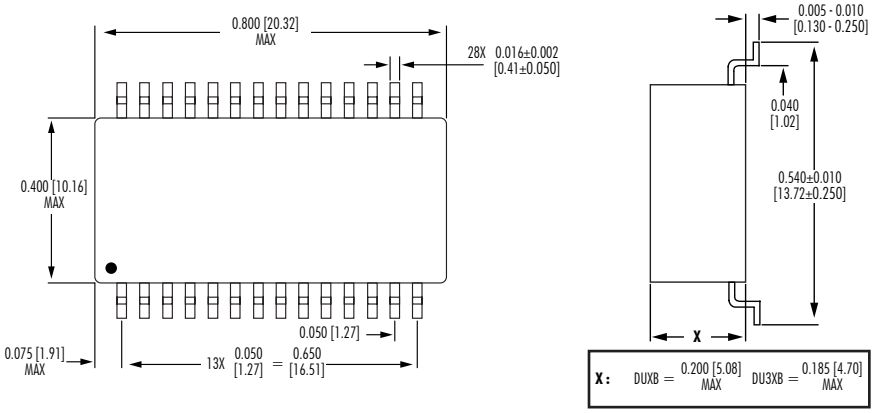
* At 1062 or 125 Mb/s Data Rate, PN7 Data Pattern

1. Add suffix "**NL**" for RoHS compliant version; i.e. TM1062DUXB becomes **TM1062DUXBNL**. NL parts have 100% SN Lead Finish.

Mechanicals

TM1062DUXB / TM1062DU3XB / TM125TX3DUA

Dimensions: inch [mm]
Tolerance (unless otherwise specified): ±0.005 [0.13]

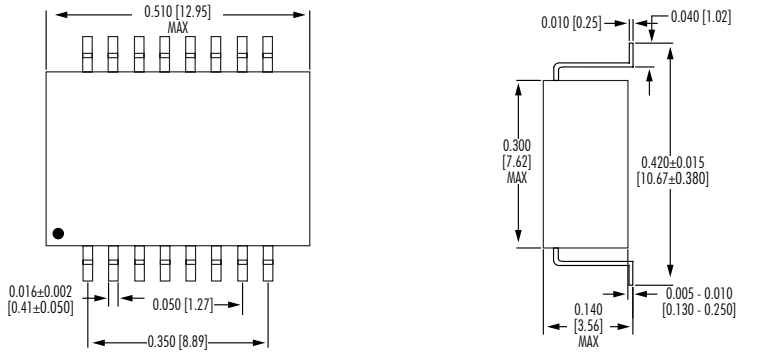


PCB PAD PATTERN
(REFERENCE ONLY)

Mechanicals

TM1062HUXB / TM125TXHUA

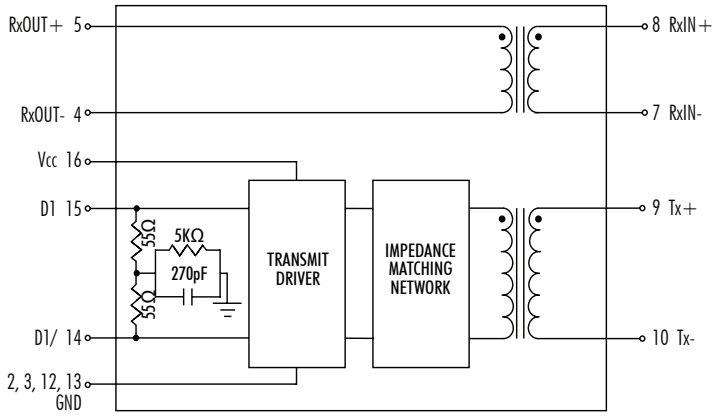
Dimensions: inch [mm]
Tolerance (unless otherwise specified): ±0.005 [0.13]



PCB PAD PATTERN
(REFERENCE ONLY)

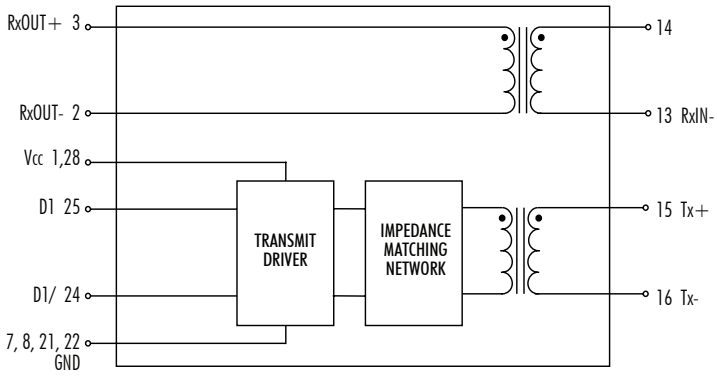
TM1062HUXB / TM125TXHUA

Electrical Schematics



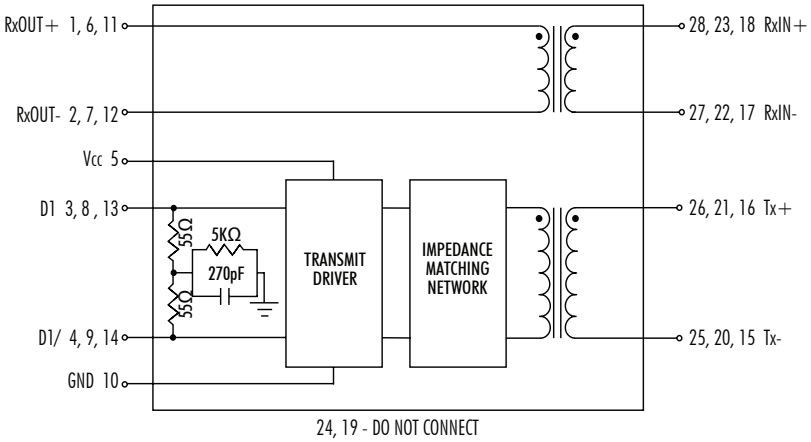
TM1062DUXB

Electrical Schematics



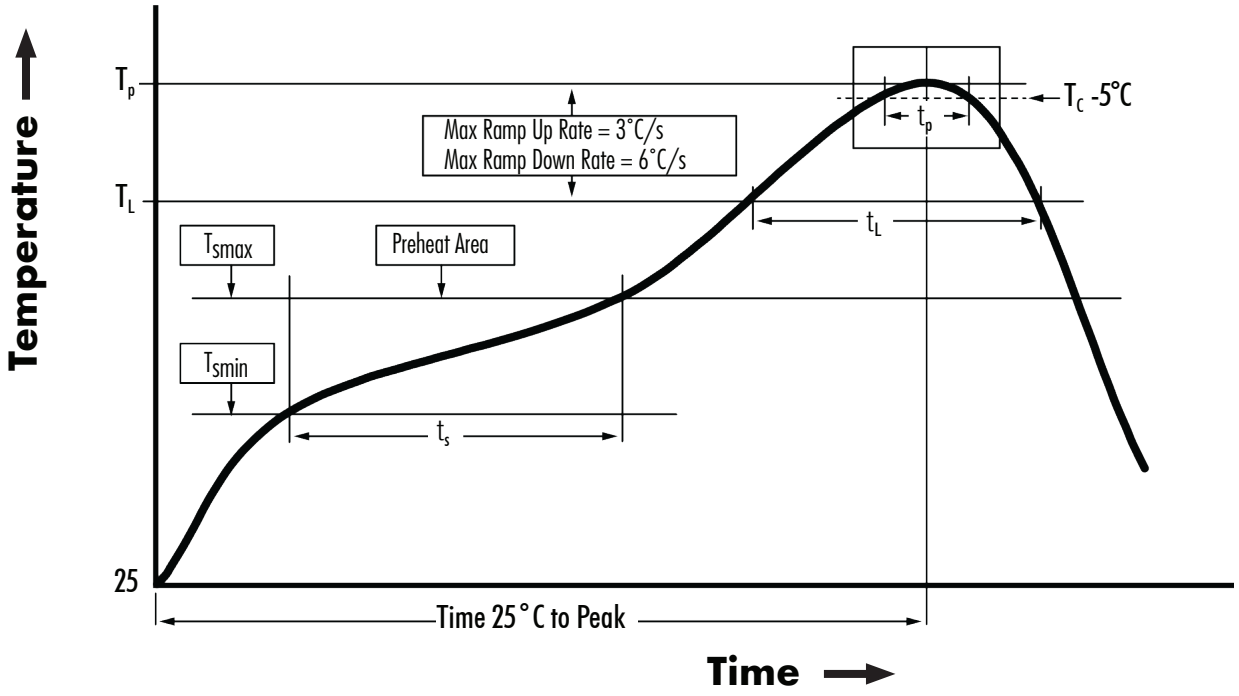
TM1062DU3XB / TM125TX3DUA

Electrical Schematics



24, 19 - DO NOT CONNECT

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)
Tin/Lead Profile									
100	150	183	220	60 - 120	60 - 150	20	3°C/s MAX	6°C/s MAX	360
Non-Lead Profile									
150	200	217	245	60 - 120	60 - 150	30	3°C/s MAX	6°C/s MAX	480

NOTES:

1. All temperatures measured on the package leads.
2. Maximum number of reflow cycles not to exceed 2.
3. Reflow cycle applies only to surface mount parts.

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