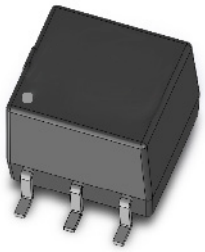
COPPERHEAD™ HIGH SPEED SINGLE TRANSFORMERS

Ruggedized



- Compliant with ANSI X3T111, Fiber Channel, FC-PH-3 for quarter/full speed applicaitons, SMPTE, IEEE-1394 FireWire
- Pick and place compatible
- IC grade package withstands 225°C peak temperature profile
- Operating Temperature: -55°C to +125°C
- Lead Finish: Sn63/Pb37
- Moisture Sensitivity Level: 3

Electrical Specifications @ 25°C

Part Number	Turns Ratio (±5%)	Primary Inductance (µH MIN)	Rise Time @ 20% to 80% (pS MAX)	DC Resistance (Ω MAX)	Hi-Pot (Vrms MIN)	Insertion Loss (dB MAX)	Application Nominal Bit Rate (Mbaud)
T-330ACT	1CT:1CT	26	350	0.20	1500	1.5	265.6 (1/4 speed)
T-531ACT	1CT:1CT	7.5	325	0.20	1500	2.0	531 (half speed)
T-1062ACT	1CT:1CT	3.75	280	0.20	1500	2.0	1062.5 (full speed)
T-1250ACT	1CT:1CT	3.75	280	0.20	1500	2.0	1250
T-1485ACT	1CT:1CT	3.75	280	0.20	1500	2.0	1485 (SMPTE)

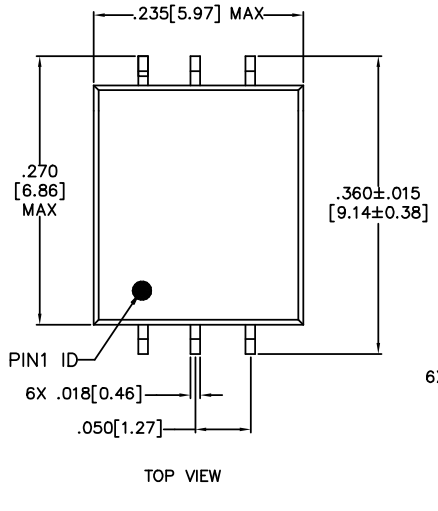
NOTES:

1. Add suffix "**NL**" for RoHS compliant version; i.e. T-330ACT becomes **T-330ACTNL**.
2. For Tape & Reel packaging, add "**T**" suffix at the end of the part number: i.e. **T-330ACTT**

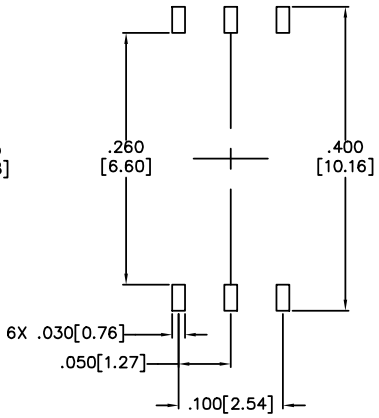
Mechanicals

T-330ACT, T-531ACT, T-1062ACT, T-1250ACT, T-1485ACT

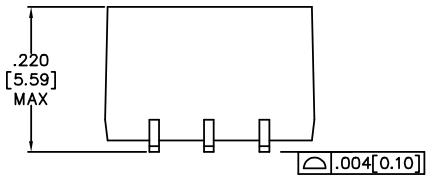
Dimensions: inch [mm]
Tolerance (unless otherwise specified): ±0.010 [0.254]



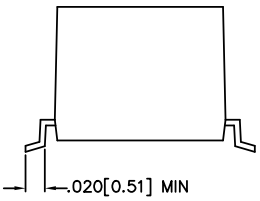
TOP VIEW



PCB PAD PATTERN
(REFERENCE ONLY)

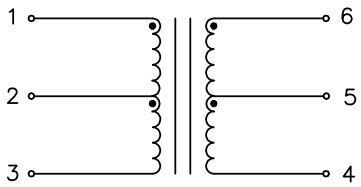


FRONT VIEW



SIDE VIEW

Electrical Schematics



SCHEMATIC

Application Notes

iNRCORE has designed Fibre Channel dual transformers specifically for point to point coupling to 150 twinax cable. The isolation transformers protect the station from static charges that may develop on the cable, and prevents ground loop currents from being transferred between stations. The devices have also been designed to provide common mode rejection within the transmis-sion band and thus reduce EMI.

The wide bandwidth of these devices minimizes data dependent jitter by providing fast signal rise times. Low-end bandwidth also minimizes base-line wander, another contributor to jitter. The dual package allows connection of both transmit and receive channels, as shown in the application circuit below. Surface-mount packaging also allows a cost-effective solution.

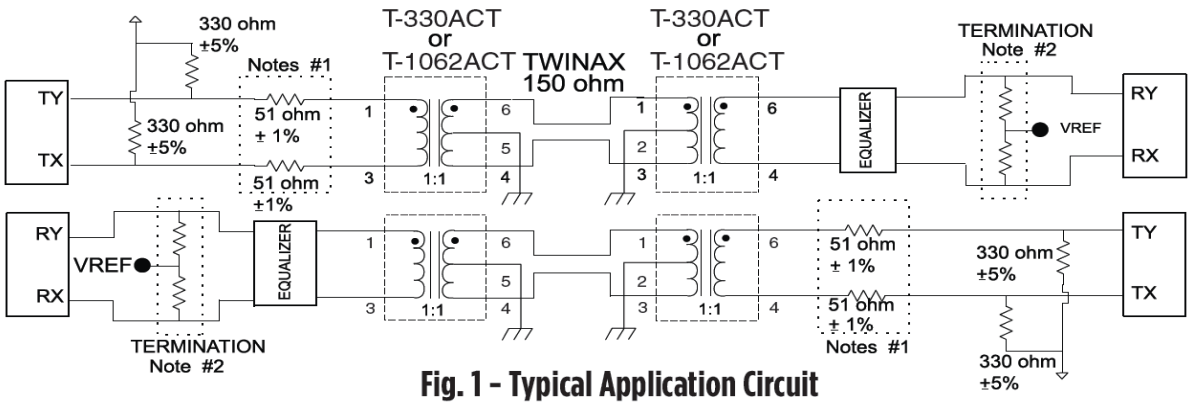
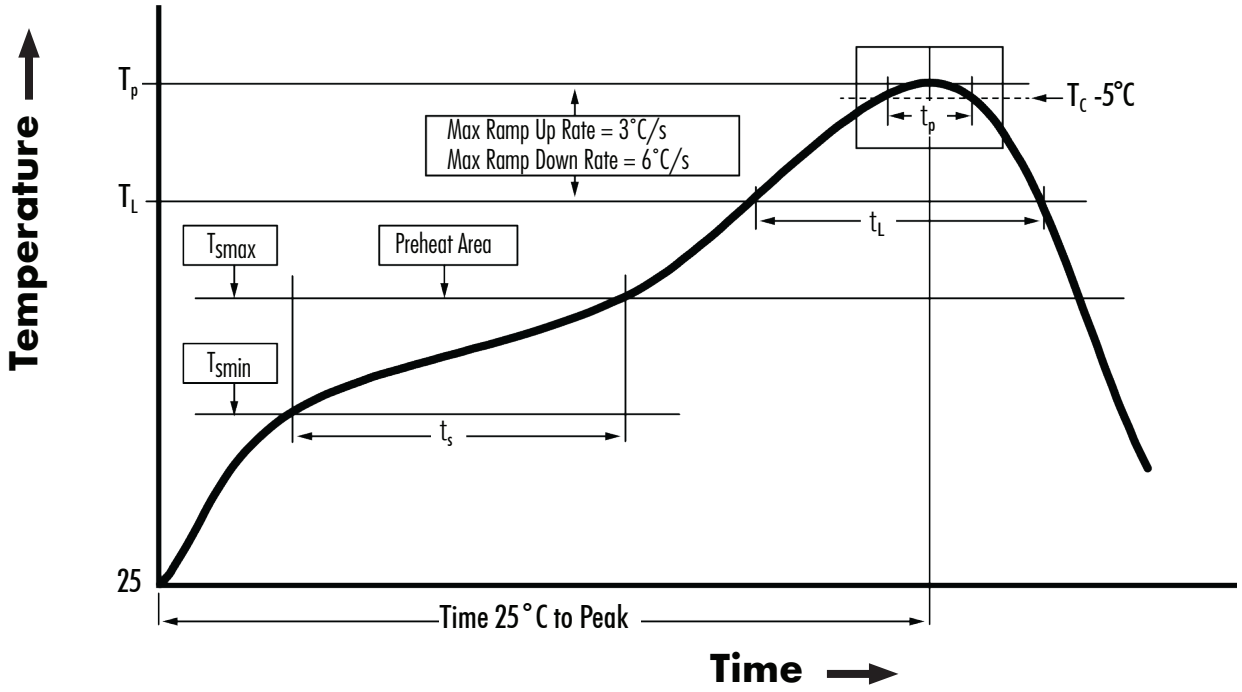


Fig. 1 – Typical Application Circuit

1. The transformer, 51Ω resistors, and the impedance of the driver are matched to achieve the best return loss (S11) for the transmitter of the 150Ω system.
2. The total impedance of termination resistor network is 150 Ω.
3. When laying out PCB, transmission line methods must be utilized to maintain return loss and signal integrity. Transformer must be located within .50" of the DB9 connector.
4. It is recommended that the center tap (CT) of transformer(s), cable side, be connected earth/chassis (cable shield) ground either directly or via a transient voltage suppressor (TVS) type component and earth/chassis ground should be "AC-coupled" to signal (digital) ground through a .027uF, 500V capacitor.

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	225	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 lead
2. Maximum number of reflow cycles not to exceed

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