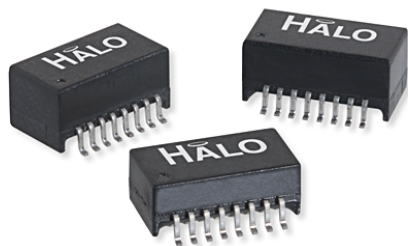


# ULTRA™ Family of Transformers

SMD Single Port 10/100BASE-TX Transformer

**HALO**  
ELECTRONICS, INC.



US Patent Numbers:  
5,656,985 6,297,721 B1  
6,297,720 B1 6,320,489 B1  
6,344,785 B1 6,662,431 B1

## Product Features:

- ULTRA™, E-ULTRA™, and ULTRA-II™
- IEEE802.3u Compliant
- UL/EN60950 Recognized
- 100% Compliance Testing
- 1500Vrms Hi-Pot
- Patented Open Frame Construction

Part Number	Circuit	Package	Temp. Range	Turns Ratio ±3%		Cw/w (pF typ)	PRI/SEC		Compliance
				(1-3:16-14)	(6-8:11-9)		LL (μH max)	PRI DCR (Ω max)	
TG110-S050N2LF <sup>1</sup>	A	N2	0 to 70°C	1CT:1CT	1CT:1CT	35 (max)	0.4	0.9	Pb-Free
TG110-S050N2RL	A	N2	0 to 70°C	1CT:1CT	1CT:1CT	15	0.4	0.9	RoHS (7a)
TG110-S055N2LF <sup>1</sup>	B	N2	0 to 70°C	1CT:1CT	1CT:1CT	35 (max)	0.4	0.9	Pb-Free
TG110-S055N2RL	B	N2	0 to 70°C	1CT:1CT	1CT:1CT	15	0.4	0.9	RoHS (7a)
TG110-S120N2RL	B	N2	0 to 70°C	2CT:1CT	1CT:1CT	15	1.2	0.9	RoHS (7a)
TG110-S125N2RL	B	N2	0 to 70°C	1CT:1CT	2CT:1CT	15	1.2	0.9	RoHS (7a)
TG110-S131N2RL	B	N2	0 to 70°C	1.41CT:1CT	1CT:1CT	15	0.9	0.9	RoHS (7a)
TG110-S139N2RL	B	N2	0 to 70°C	1.25CT:1CT	1CT:1CT	15	0.9	0.9	RoHS (7a)
TG110-S177N2RL	B	N2	0 to 70°C	1.41CT:1CT	1.41CT:1CT	20	0.6	0.9	RoHS (7a)
TG110-E050N5LF <sup>1</sup>	A	N5	-40 to +85°C	1CT:1CT	1CT:1CT	35 (max)	0.4	1.0	Pb-Free
TG110-E050N5RL	A	N5	-40 to +85°C	1CT:1CT	1CT:1CT	25	0.4	1.0	RoHS (7a)
TG110-E055N5LF <sup>1</sup>	B	N5	-40 to +85°C	1CT:1CT	1CT:1CT	35 (max)	0.4	1.0	Pb-Free
TG110-E055N5RL	B	N5	-40 to +85°C	1CT:1CT	1CT:1CT	25	0.4	1.0	RoHS (7a)
TG110-E120N5RL	B	N5	-40 to +85°C	2CT:1CT	1CT:1CT	25	0.9	1.3	RoHS (7a)
TG110-E125N5RL	B	N5	-40 to +85°C	1CT:1CT	2CT:1CT	25	0.9	1.3	RoHS (7a)
TG110-E139N5RL	B	N5	-40 to +85°C	1.25CT:1CT	1CT:1CT	25	0.4	1.3	RoHS (7a)
TG110-S141N5RL	B	N5	0 to 70°C	1CT:1.41CT	1CT:1CT	35	0.4	0.9	RoHS (7a)
TG110-3506N6RL <sup>2</sup>	C	N6	0 to 70°C	1CT:1CT	1CT:1CT	30	0.4	1.0	RoHS (7a)
TG110-S101N6RL <sup>2</sup>	D	N6	0 to 70°C	1CT:1CT	1CT:1CT	30	0.4	1.0	RoHS (7a)

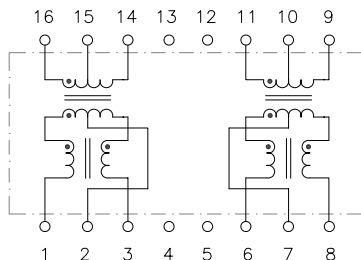
<sup>1</sup> Recommended for new designs using 1CT:1CT turns ratios

<sup>2</sup> Not for use in Auto-MDIX circuits/auto-transformer must be on the TX channel

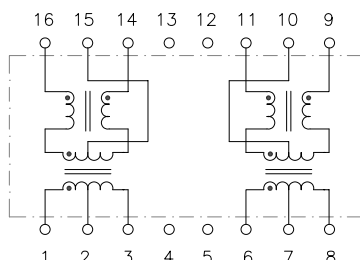
\* Contact your local representative or factory for part specific datasheets

# HALO ULTRA 10/100BASE-TX Ethernet Transformers

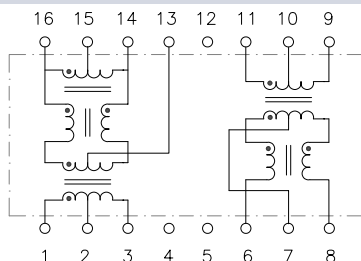
## Circuit A



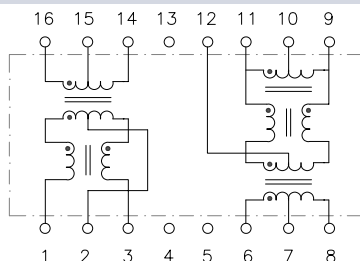
## Circuit B



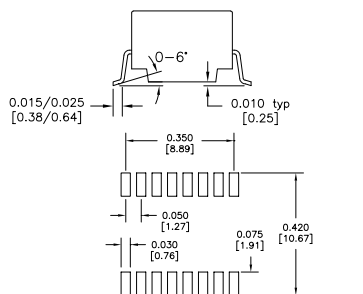
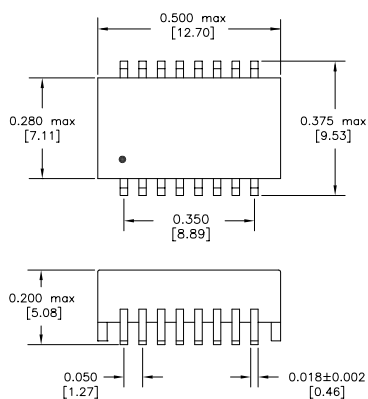
## Circuit C



## Circuit D

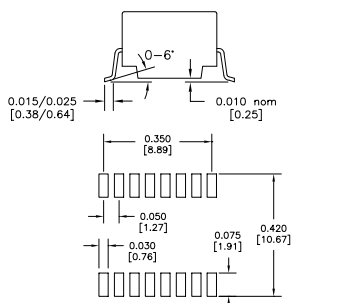
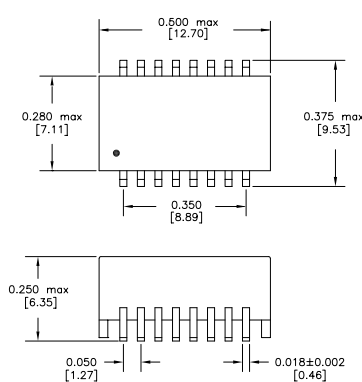


## N2 Package



Recommended Solder Pad Dimensions

## N5 Package

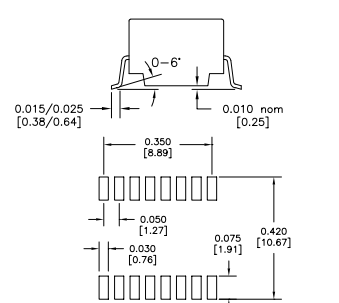
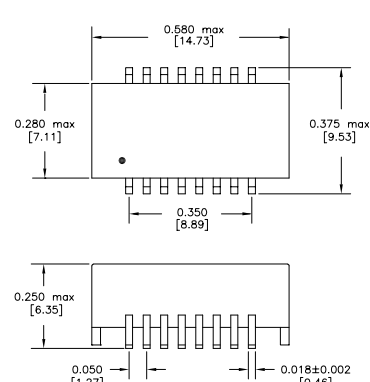


Recommended Solder Pad Dimensions

Dimensions: inch [mm]

Co-Planarity: 0.004 [0.10]

## N6 Package



Recommended Solder Pad Dimensions

**HALO**  
ELECTRONICS, INC.

2880 Lakeside Drive #116  
Santa Clara, CA 95054  
(650) 903-3800

[www.halo-electronics.com](http://www.halo-electronics.com)

HALO® Electronics is a leading supplier of high quality communication magnetics including signal transformers, filters, CMR chokes, PoE power transformers, DC/DC converters, and integrated Ethernet connectors. HALO's leading edge technology solutions are manufactured in ISO9001 and ISO14001 factories offering high quality products at a competitive price.

© Copyright 2014 HALO Electronics, Inc. All rights reserved.

Revised 3/2014. Download the latest version at [www.halo-electronics.com/pdf/discrete-ultra-100baset.pdf](http://www.halo-electronics.com/pdf/discrete-ultra-100baset.pdf)