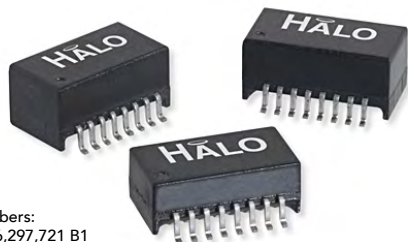


ULTRA™ Family of Transformers

SMD Single Port 10/100BASE-TX Isolation Modules

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/EN62368 Recognized
- 100% Electrical Testing
- 1500Vrms Hi-Pot
- Patented Open Frame Construction

ULTRA™ Part Number	Circuit Package		Temp. Range	Turns Ratio ±3% (1-3:16-14) (6-8:11-9)		Cw/w (pF)	PRI LL (μH max)	PRI DCR (Ω max)	RoHS¹
TG110-S050N2LF	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	35 max	0.4	0.9	RoHS (7a)
TG110-S055N2LF	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	35 max	0.4	0.9	RoHS (7a)
TG110-S120N2LF	B	N2	0 to 70°C	2CT:1CT	1CT:1CT	30 max	0.9	0.9	Pb-Free
TG110-S120N2RL	B	N2	0 to 70°C	2CT:1CT	1CT:1CT	30 max	0.9	0.9	RoHS (7a)
TG110-S125N2LF	B	N2	0 to 70°C	1CT:1CT	2CT:1CT	30 max	0.4	0.9	Pb-Free
TG110-S125N2RL	B	N2	0 to 70°C	1CT:1CT	2CT:1CT	35 max	0.4	0.9	RoHS (7a)
TG110-S131N2LF	B	N2	0 to 70°C	1.41CT:1CT	1CT:1CT	35 max	0.4	1.5	Pb-Free
TG110-S131N2RL	B	N2	0 to 70°C	1.41CT:1CT	1CT:1CT	35 max	0.4	1.5	RoHS (7a)
TG110-S139N2LF	B	N2	0 to 70°C	1.25CT:1CT	1CT:1CT	15 typ	0.9	0.9	Pb-Free
TG110-S139N2RL	B	N2	0 to 70°C	1.25CT:1CT	1CT:1CT	15 typ	0.9	0.9	RoHS (7a)
TG110-S141N5LF	B	N5	0 to 70°C	1CT:1.41CT	1CT:1CT	35 typ	0.4	0.9	Pb-Free
TG110-S141N5RL	B	N5	0 to 70°C	1CT:1.41CT	1CT:1CT	35 typ	0.4	0.9	RoHS (7a)
TG110-S177N2LF	B	N2	0 to 70°C	1.41CT:1CT	1.41CT:1CT	30 max	0.6	0.9	Pb-Free
TG110-S177N2RL	B	N2	0 to 70°C	1.41CT:1CT	1.41CT:1CT	30 max	0.6	0.9	RoHS (7a)

ULTRA-II™									
TG110-3506N6LF²	C	N6	0 to 70°C	1CT:1CT	1CT:1CT	20 typ	0.4	1.3	Pb-Free
TG110-3506N6RL²	C	N6	0 to 70°C	1CT:1CT	1CT:1CT	20 typ	0.4	1.3	RoHS (7a)
TG110-S101N6LF²	D	N6	0 to 70°C	1CT:1CT	1CT:1CT	20 typ	0.4	1.3	Pb-Free
TG110-S101N6RL²	D	N6	0 to 70°C	1CT:1CT	1CT:1CT	20 typ	0.4	1.3	RoHS (7a)

Notes:

1. Pb-Free parts are RoHS 6/6 compliant. RoHS (7a) parts contain lead per exemption 7a which is set to expire in the future.
2. Not for use in Auto-MDIX circuits/auto-transformer must be on the TX channel.
3. Parts with RL suffix are not recommended for new designs.
4. Contact the factory or your local representative for individual datasheet or additional information.

For additional information contact your [local representative](#), or HALO's support staff at (650) 903-3800 or info@haloelectronics.com

ULTRA™ Family of Transformers

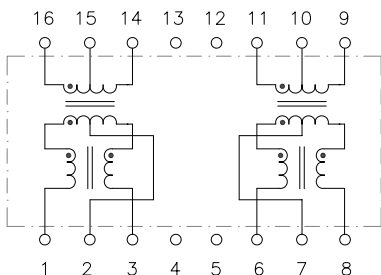


E-ULTRA™ Part Number	Circuit	Package	Temp. Range	Turns Ratio $\pm 3\%$		Cw/w (pF)	PRI/SEC		RoHS¹
				(1-3:16-14)	(6-8:11-9)		LL (μ H max)	PRI DCR (Ω max)	
TG110-E050N5LF	A	N5	-40 to +85°C	1CT:1CT	1CT:1CT	35 max	0.4	1.0	Pb-Free
TG110-E050N5RL	A	N5	-40 to +85°C	1CT:1CT	1CT:1CT	40 max	0.4	1.0	RoHS (7a)
TG110-E055N5LF	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	40 max	0.4	1.0	RoHS (7a)
TG110-E120N5LF	B	N5	-40 to +85°C	2CT:1CT	1CT:1CT	40 max	0.9	1.3	Pb-Free
TG110-E120N5RL	B	N5	-40 to +85°C	2CT:1CT	1CT:1CT	40 max	0.9	1.3	RoHS (7a)
TG110-E125N5LF	B	N5	-40 to +85°C	1CT:1CT	2CT:1CT	40 max	0.9	1.1	Pb-Free
TG110-E125N5RL	B	N5	-40 to +85°C	1CT:1CT	2CT:1CT	40 max	0.9	1.1	RoHS (7a)
TG110-E139N5LF	B	N5	-40 to +85°C	1.25CT:1CT	1CT:1CT	30 typ	0.4	1.3	Pb-Free
TG110-E139N5RL	B	N5	-40 to +85°C	1.25CT:1CT	1CT:1CT	30 typ	0.4	1.3	RoHS (7a)

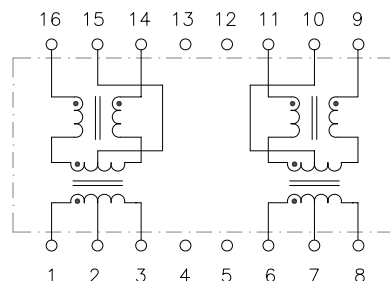
Notes:

1. Pb-Free parts are RoHS 6/6 compliant. RoHS (7a) parts contain lead per exemption 7a which is set to expire in the future.
2. Parts with RL suffix are not recommended for new designs.
3. Contact the factory or your local representative for individual datasheet or additional information.

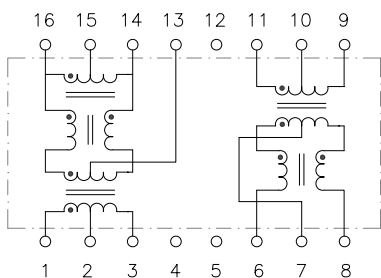
Circuit A



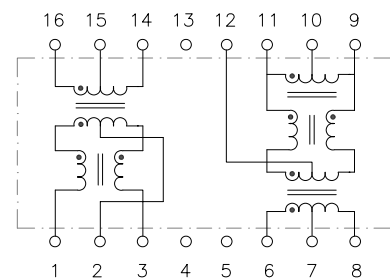
Circuit B



Circuit C

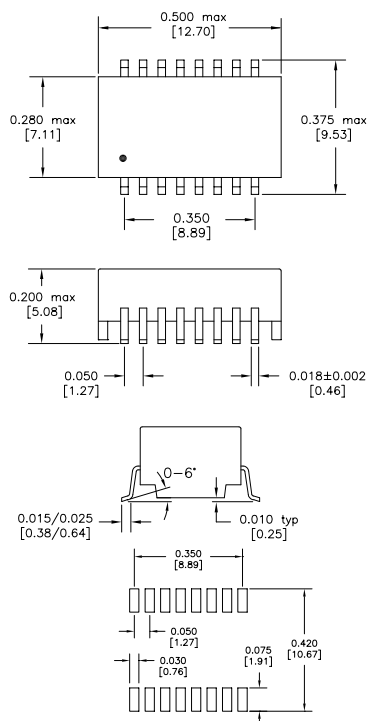


Circuit D



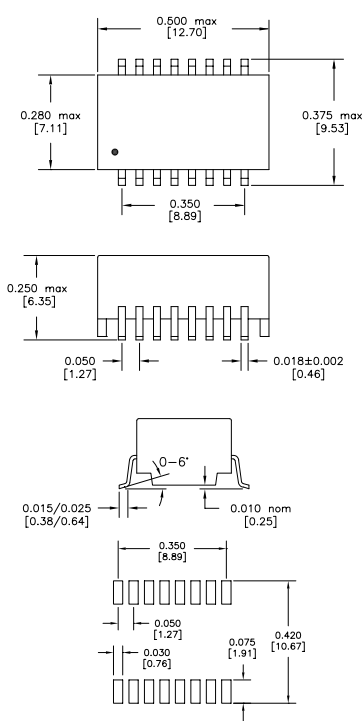
HALO ULTRA 10/100BASE-TX Ethernet Transformers

N2 Package



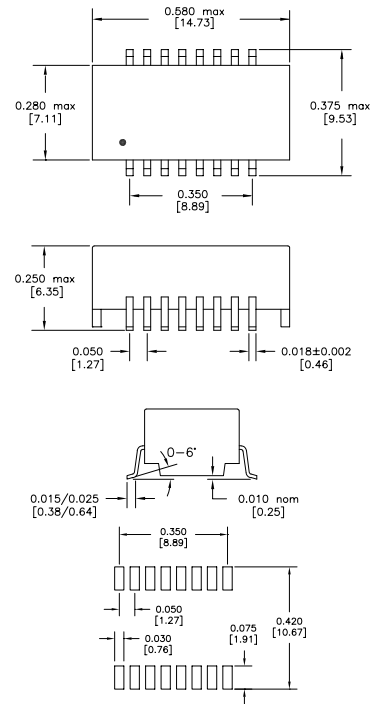
Recommended Solder Pad Dimensions

N5 Package



Recommended Solder Pad Dimensions

N6 Package



Recommended Solder Pad Dimensions

Dimensions: inch [mm]

Co-Planarity: 0.004 [0.10]

HALO
ELECTRONICS, INC.

Santa Clara, CA 95054

(650) 903-3800

info@haloelectronics.com

www.haloelectronics.com

HALO® Electronics is a leading supplier of high quality communication magnetics including signal transformers, filters, CMR chokes, PoE power transformers, DC/DC isolation modules, and integrated Ethernet connectors. HALO's high quality and competitively priced leading edge technology solutions are manufactured in ISO9001 and ISO14001 factories.

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