

# Quatra™ 10BASE-T Transformer

SMD Quad Port 10BASE-T Transformer



## Product Features:

- Four Port 10BASE-T
- IEEE802.3i Compliant
- UL/EN60950 Recognized
- 100% Compliance Testing
- 1500Vrms Hi-Pot
- Patented Open Frame Construction

| Part Number   | Turns Ratio ±3%<br>TX | RX  | PRI OCL<br>TX/RX<br>(μH typ) | Cw/w<br>TX/RX<br>(pF max) | PRI LL<br>TX/RX<br>(μH max) | PRI DCR<br>TX/RX<br>(Ω max) | Optional CMR<br>Choke | RoHS <sup>1</sup> |
|---------------|-----------------------|-----|------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------|-------------------|
| TG44-1406NXLF | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | Pb-Free           |
| TG44-1406NXRL | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | RoHS (7a)         |
| TG45-1406NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | Pb-Free           |
| TG45-1406NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | RoHS (7a)         |
| TG46-1406NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | Pb-Free           |
| TG46-1406NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | RoHS (7a)         |
| TG57-1006NXLF | 1CT:1                 | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | Pb-Free           |
| TG57-1006NXRL | 1CT:1                 | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | RoHS (7a)         |
| TG58-1006NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | Pb-Free           |
| TG58-1006NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | RoHS (7a)         |
| TG59-1006NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | Pb-Free           |
| TG59-1006NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | RoHS (7a)         |
| TG62-1006NXLF | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | Pb-Free           |
| TG62-1006NXRL | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | RoHS (7a)         |
| TG66-1006NXLF | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX                    | Pb-Free           |
| TG66-1006NXRL | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX                    | RoHS (7a)         |
| TG87-2006NXLF | 1CT:2                 | 1:1 | 50 / 200                     | 10 / 15                   | 0.15 / 0.2                  | 0.35 / 0.5                  | N/A                   | Pb-Free           |
| TG87-2006NXRL | 1CT:2                 | 1:1 | 50 / 200                     | 10 / 15                   | 0.15 / 0.2                  | 0.35 / 0.5                  | N/A                   | RoHS (7a)         |
| TG88-2006NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | Pb-Free           |
| TG88-2006NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | RoHS (7a)         |
| TG89-2006NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.3                   | 0.35 / 0.5                  | TX/RX                 | Pb-Free           |
| TG89-2006NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.3                   | 0.35 / 0.5                  | TX/RX                 | 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 July 2016.
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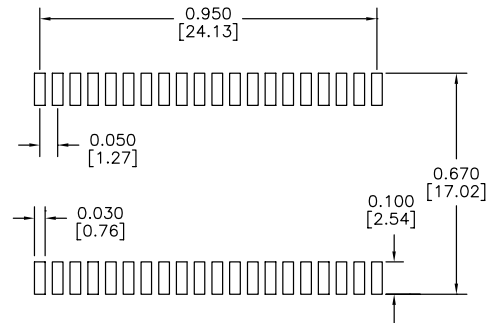
For additional information contact your [local representative](#), or HALO's support staff at (650) 903-3800 or [info@haloelectronics.com](mailto:info@haloelectronics.com)

# HALO Quatra 10BASE-T Transformers

## Circuit Diagram



## Mechanical



Recommended Solder Pad Layout  
 Dimensions: inch [mm]  
 Co-Planarity: 0.004 [0.10]

US Patent Numbers:  
 5,656,985 6,297,721 B1  
 6,297,720 B1 6,320,489 B1  
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|---------------|-----------------------|-----|------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------|-------------------|
| TG41-S010NXLF | 1CT:2.5CT             | 1:1 | 35 / 200                     | 15                        | 0.1 / 0.4                   | 0.3 / 0.5                   | TX/RX                 | Pb-Free           |
| TG41-S010NXRL | 1CT:2.5CT             | 1:1 | 35 / 200                     | 15                        | 0.1 / 0.4                   | 0.3 / 0.5                   | TX/RX                 | RoHS (7a)         |
| TG44-S010NXLF | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | Pb-Free           |
| TG44-S010NXRL | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | RoHS (7a)         |
| TG45-S010NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | Pb-Free           |
| TG45-S010NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | RoHS (7a)         |
| TG46-S010NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | Pb-Free           |
| TG46-S010NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | RoHS (7a)         |
| TG57-S010NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | Pb-Free           |
| TG57-S010NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | RoHS (7a)         |
| TG58-S010NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | Pb-Free           |
| TG58-S010NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | RoHS (7a)         |
| TG59-S010NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | Pb-Free           |
| TG59-S010NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | RoHS (7a)         |
| TG62-S010NXLF | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | Pb-Free           |
| TG62-S010NXRL | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | RoHS (7a)         |
| TG66-S010NXLF | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX/RX                 | Pb-Free           |
| TG66-S010NXRL | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX/RX                 | RoHS (7a)         |
| TG87-S010NXLF | 1CT:2                 | 1:1 | 50 / 200                     | 9 / 11                    | 0.75 / 0.15                 | 0.35 / 0.5                  | N/A                   | Pb-Free           |
| TG87-S010NXRL | 1CT:2                 | 1:1 | 50 / 200                     | 9 / 11                    | 0.75 / 0.15                 | 0.35 / 0.5                  | N/A                   | RoHS (7a)         |
| TG88-S010NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | Pb-Free           |
| TG88-S010NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | RoHS (7a)         |
| TG89-S010NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 14                    | 0.2 / 0.3                   | 0.2 / 0.3                   | TX/RX                 | Pb-Free           |
| TG89-S010NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 14                    | 0.2 / 0.3                   | 0.2 / 0.3                   | TX/RX                 | RoHS (7a)         |

### Notes:

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|---------------|-----------------------|-----|------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------|-------------------|
| TG44-S020NXLF | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | Pb-Free           |
| TG44-S020NXRL | 1CT:1.41              | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | N/A                   | RoHS (7a)         |
| TG45-S020NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | Pb-Free           |
| TG45-S020NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX                    | RoHS (7a)         |
| TG46-S020NXLF | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | Pb-Free           |
| TG46-S020NXRL | 1CT:1.41CT            | 1:1 | 140                          | 12                        | 0.4                         | 0.4                         | TX/RX                 | RoHS (7a)         |
| TG57-S020NXLF | 1CT:1                 | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | Pb-Free           |
| TG57-S020NXRL | 1CT:1                 | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | N/A                   | RoHS (7a)         |
| TG58-S020NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | Pb-Free           |
| TG58-S020NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX                    | RoHS (7a)         |
| TG59-S020NXLF | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | Pb-Free           |
| TG59-S020NXRL | 1CT:1CT               | 1:1 | 100                          | 12                        | 0.3                         | 0.3                         | TX/RX                 | RoHS (7a)         |
| TG62-S020NXLF | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | Pb-Free           |
| TG62-S020NXRL | 2CT:1                 | 1:1 | 150                          | 10                        | 0.6 / 0.3                   | 0.35                        | N/A                   | RoHS (7a)         |
| TG66-S020NXLF | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX/RX                 | Pb-Free           |
| TG66-S020NXRL | 2CT:1CT               | 1:1 | 150                          | 10                        | 0.9 / 0.3                   | 0.35                        | TX/RX                 | RoHS (7a)         |
| TG87-S020NXLF | 1CT:2                 | 1:1 | 50 / 200                     | 9 / 11                    | 0.075 / 0.15                | 0.35 / 0.5                  | N/A                   | Pb-Free           |
| TG87-S020NXRL | 1CT:2                 | 1:1 | 50 / 200                     | 9 / 11                    | 0.075 / 0.15                | 0.35 / 0.5                  | N/A                   | RoHS (7a)         |
| TG88-S020NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | Pb-Free           |
| TG88-S020NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.15                  | 0.35 / 0.5                  | TX                    | RoHS (7a)         |
| TG89-S020NXLF | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.3                   | 0.35 / 0.5                  | TX/RX                 | Pb-Free           |
| TG89-S020NXRL | 1CT:2CT               | 1:1 | 50 / 200                     | 9 / 11                    | 0.2 / 0.3                   | 0.35 / 0.5                  | TX/RX                 | RoHS (7a)         |

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2880 Lakeside Drive #116  
Santa Clara, CA 95054  
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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.

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)