

# T1/E1 Isolation Modules

SMD Dual Port or Quad Channel T1/E1 Transformers



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:

- T1/E1/CEPT/ISDN-PR
- UL/EN60950/DEMKO Recognized
- 100% Electrical Testing
- 1500Vrms Hi-Pot
- Patented Open Frame Construction

| Part Number    | Circuit | Turns Ratio<br>PRI:SEC | PRI OCL<br>(mH typ) | Temp.<br>Range | Primary Pins             | RoHS <sup>1</sup> |
|----------------|---------|------------------------|---------------------|----------------|--------------------------|-------------------|
| TG05-1205NM5LF | A       | 1:2                    | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | Pb-Free           |
| TG05-1205NM5RL | A       | 1:2                    | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | RoHS (7a)         |
| TG07-1205NM5LF | B       | 1:2CT & 1:2CT          | 1.2                 | 0 to 70°C      | 20-19, 15-14 & 4-5, 9-10 | Pb-Free           |
| TG07-1205NM5RL | B       | 1:2CT & 1:2CT          | 1.2                 | 0 to 70°C      | 20-19, 15-14 & 4-5, 9-10 | RoHS (7a)         |
| TG23-1205NM5LF | A       | 1:2.42                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | Pb-Free           |
| TG23-1205NM5RL | A       | 1:2.42                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | RoHS (7a)         |
| TG25-1205NM5LF | A       | 1:1.26                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | Pb-Free           |
| TG25-1205NM5RL | A       | 1:1.26                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | RoHS (7a)         |
| TG27-S003NM5LF | B       | 1:2CT & 1:1.36CT       | 1.2                 | 0 to 70°C      | 20-19, 15-14 & 4-5, 9-10 | Pb-Free           |
| TG27-S003NM5RL | B       | 1:2CT & 1:1.36CT       | 1.2                 | 0 to 70°C      | 20-19, 15-14 & 4-5, 9-10 | RoHS (7a)         |
| TG36-1205NM5LF | A       | 1:1.15 & 1:1           | 1.2                 | 0 to 70°C      | 1-2, 6-7 & 18-17, 13-12  | Pb-Free           |
| TG36-1205NM5RL | A       | 1:1.15 & 1:1           | 1.2                 | 0 to 70°C      | 1-2, 6-7 & 18-17, 13-12  | RoHS (7a)         |
| TG37-1205NM5LF | B       | 1:1.14CT               | 1.2                 | 0 to 70°C      | 20-19, 4-5, 15-14, 9-10  | Pb-Free           |
| TG37-1205NM5RL | B       | 1:1.14CT               | 1.2                 | 0 to 70°C      | 20-19, 4-5, 15-14, 9-10  | RoHS (7a)         |
| TG39-1205NM5LF | A       | 1:1.15                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | Pb-Free           |
| TG39-1205NM5RL | A       | 1:1.15                 | 1.2                 | 0 to 70°C      | 1-2, 3-4, 6-7, 8-9       | RoHS (7a)         |
| TG42-1205NM5LF | A       | 1:√2                   | 1.2                 | 0 to 70°C      | 1-2, 18-17, 6-7, 8-9     | Pb-Free           |
| TG42-1205NM5RL | A       | 1:√2                   | 1.2                 | 0 to 70°C      | 1-2, 18-17, 6-7, 8-9     | RoHS (7a)         |
| TG49-1205NM5LF | B       | 1CT:2 & 1:2CT          | 1.2                 | 0 to 70°C      | 1-3, 6-8 & 4-5, 9-10     | Pb-Free           |
| TG49-1205NM5RL | B       | 1CT:2 & 1:2CT          | 1.2                 | 0 to 70°C      | 1-3, 6-8 & 4-5, 9-10     | RoHS (7a)         |
| TG83-1205NM5LF | A       | 1:2 & 1:1              | 1.2                 | 0 to 70°C      | 1-2, 6-7 & 18-17, 13-12  | Pb-Free           |
| TG83-1205NM5RL | A       | 1:2 & 1:1              | 1.2                 | 0 to 70°C      | 1-2, 6-7 & 18-17, 13-12  | RoHS (7a)         |
| TGSP-S125NM5LF | A       | 1:2.4 & 1:1            | 1.2                 | 0 to 70°C      | 1-2, 8-9 & 3-4, 6-7      | Pb-Free           |
| TGSP-S125NM5RL | A       | 1:2.4 & 1:1            | 1.2                 | 0 to 70°C      | 1-2, 8-9 & 3-4, 6-7      | RoHS (7a)         |

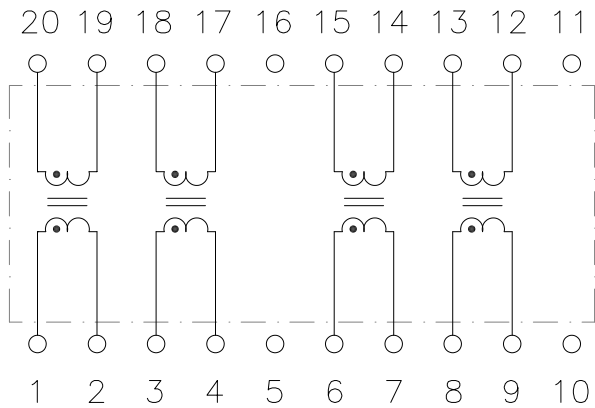
### Notes:

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.
2. Parts with RL suffix are not recommended for new designs.
3. Please contact the factory or representative for individual datasheets or additional information.

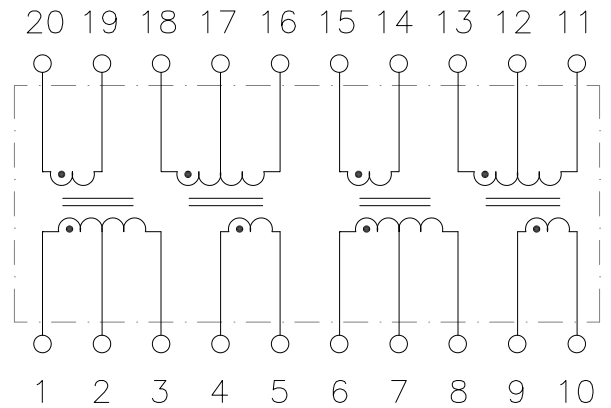
For additional information contact your [local representative](#), or HALO's support staff at (650) 903-3800 or [info@haloelectronics.com](mailto:info@haloelectronics.com)

# HALO Gigabit Family of Ethernet Transformers

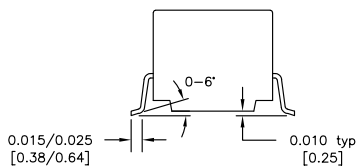
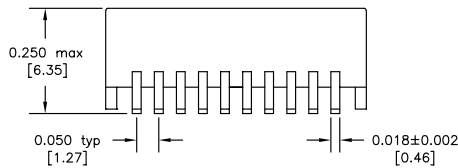
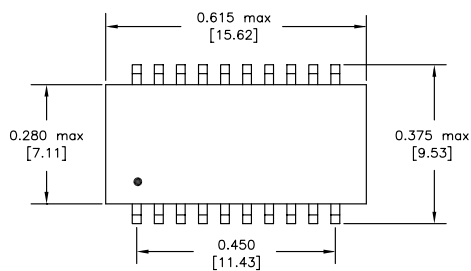
Circuit A



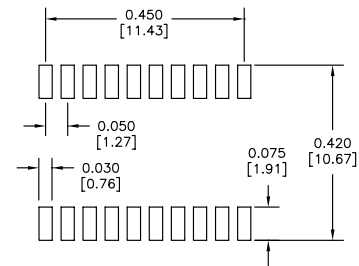
Circuit B



## NM5 Package



Dimensions: inch [mm]  
Co-Planarity: 0.004 [0.10]



Recommended Solder Pad Layout



2880 Lakeside Drive #116  
Santa Clara, CA 95054  
(650) 903-3800  
[www.haloelectronics.com](http://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 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.