

## Toroid Line Chokes (TLC)

FASTRON's Toroid Line Chokes offer a wide range of inductance values from 10 $\mu$ H to 1mH. Offering seven series, able to carry currents from 0.1A up to 10A. The core material is an iron-powder mixture optimized for high saturation currents. The copper wire current density is approximately 6.5A/mm<sup>2</sup>. FASTRON's TLCs are offered as vertical mounted versions for THT assembly only. Customized lead-forming is available upon request.

**Applications** Switched mode power supplies and control units, EMI/RFI- suppression and filtering, line-filters, and output-chokes.

### Technical Data

|                                   |  |
|-----------------------------------|--|
| L – Value (rated inductance)      | Measured with HP 4194A Impedance / Gain-phase Analyzer or equivalent at frequency $f_L$  |
| DCR (max)                         | Measured at 25 °C  |
| Rated DC Current                  | Isat, based on the Inductance Losses (Lo/L Load) where the Inductance decrease 30% max.  |
| DC Isolation                      | Winding to core 1000Volt   |
| Operating Temperature             | -55°C to 115°C (including component self-heating)  |
| Leads                             | Leadfree tinned, RoHS  |
| Recommended Soldering Method      | Wave   |
| Moisture Sensitivity Levels (MSL) | MSL Level 1, indicating unlimited floor life at $\leq 30^\circ\text{C}$ / 85% relative humidity  |
| Solderability                     | Using lead free solder (Sn 99.9) at $260^\circ\text{C} \pm 5^\circ\text{C}$ for $5 \pm 0.5$ seconds, min 90% solder coverage of metallization<br>Standard: IEC 68-2-20 (Ta)  |
| Resistance to Soldering Heat      | Resistant to $260^\circ\text{C} \pm 5^\circ\text{C}$ for $10 \pm 1$ seconds<br>Standard: IEC 68-2-20 (Tb)  |
| Resistance to Solvent             | Resistant to isopropyl alcohol for $5 \pm 0.5$ minutes at $23^\circ\text{C} \pm 5^\circ\text{C}$<br>Standard: IEC 68-2-45  |
| Climatic Test                     | Defined by the following standards<br>IEC 68-2-1 for cold test: $-55^\circ\text{C}$ for 96 hours<br>IEC 68-2-2 for dry heat test: $+125^\circ\text{C}$ for 96 hours<br>IEC 60068-2-78 for humidity test: $40^\circ\text{C}$ at RH 95% for 4 days |
| Thermal Shock Test                | Temperature cycle: $-55^\circ\text{C}$ to $+125^\circ\text{C}$ to $-55^\circ\text{C}$<br>Max/Min temperature duration: 15 minutes<br>Temperature transition duration: 5 minutes<br>Cycles: 25<br>Standard: MIL-STD-202G                          |

**Ordering Code** Example: TLC/10A-102M-00

**TLC/10A** - **102** - **M** - **00**  
 (Model/Current, I<sub>R</sub>) (Inductance Value) (Tolerance) (Packaging Code)

Core Type - Iron dust  
 Tolerances - M (20%)  
 Packaging Code - 00 (Loose in box)

## FASTRON's Component Key Characteristics



Approved according to AEC-Q200



Approved according to AEC-Q200 with High Temperature



Suitable for High Temperature



Part is RoHS conform and Halogen free



Mechanical Shock and Vibration Proof



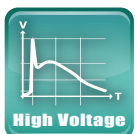
Designed for High Q-values



Exceptionally High Q-values

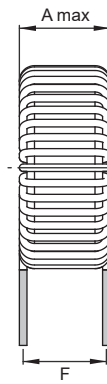
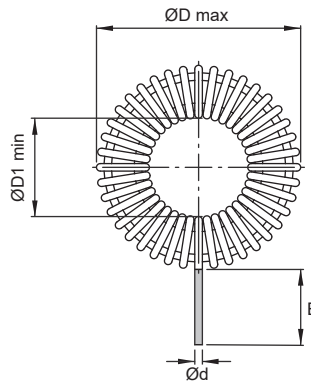
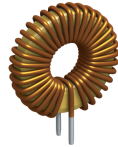


Optimized for High Currents



Optimized for High Voltages

# TLC/0.1A



| Part No          | Inductance (fL = 1 kHz) |                          | Tol<br>± (%) | DCR<br>max<br>(mΩ) | Weight<br>(grams) | Dimensions |     |       |    |      |         |
|------------------|-------------------------|--------------------------|--------------|--------------------|-------------------|------------|-----|-------|----|------|---------|
|                  | At Idc=0A<br>(μH)       | At rated current<br>(μH) |              |                    |                   | ØD max     | F   | A max | E  | Ød   | ØD1 min |
| TLC/0.1A-100M-00 | 10                      | 10                       | 20           | 330                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-150M-00 | 15                      | 15                       | 20           | 420                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-220M-00 | 22                      | 22                       | 20           | 500                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-330M-00 | 33                      | 32.9                     | 20           | 600                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-470M-00 | 47                      | 46.8                     | 20           | 640                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-680M-00 | 68                      | 67.6                     | 20           | 830                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-101M-00 | 100                     | 99.3                     | 20           | 940                | 2                 | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-151M-00 | 150                     | 148.5                    | 20           | 1270               | 2.1               | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-221M-00 | 220                     | 216.7                    | 20           | 1480               | 2.1               | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-331M-00 | 330                     | 324                      | 20           | 1880               | 2.1               | 12         | 4   | 5     | 10 | 0.15 | 4.5     |
| TLC/0.1A-471M-00 | 470                     | 458.7                    | 20           | 2020               | 2.2               | 12.5       | 4.5 | 5.5   | 10 | 0.15 | 4.5     |
| TLC/0.1A-681M-00 | 680                     | 656.2                    | 20           | 2670               | 2.3               | 12.5       | 4.5 | 5.5   | 10 | 0.15 | 4.5     |
| TLC/0.1A-102M-00 | 1000                    | 955                      | 20           | 3100               | 2.4               | 12.5       | 4.5 | 5.5   | 10 | 0.15 | 4.5     |

**Core Material:** Iron dust

Revision date: 08 Aug 2014

**SPQ:** Loose / Box 2000 [-00]

**Remarks:** Customized versions available upon request.

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