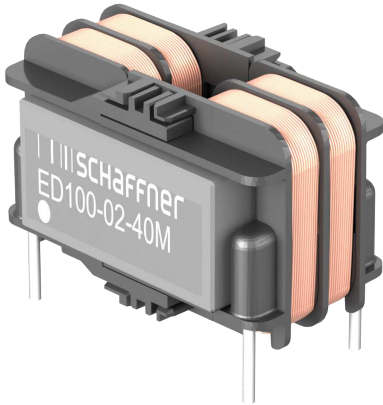


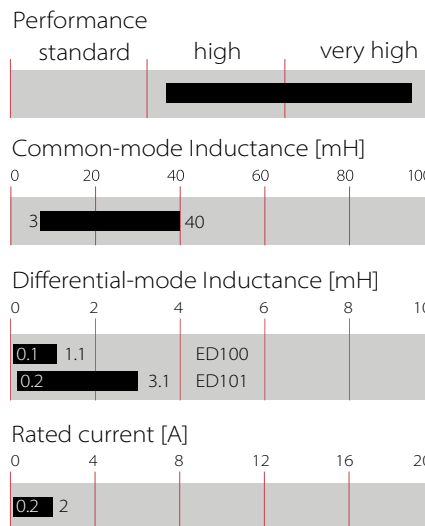
## Current-compensated choke series for lighting applications



- Common and differential mode inductance
- Very high differential-mode inductance
- Rated currents up to 2 A
- Broadband attenuation characteristics



### Performance indicators



### Approvals & Compliances

### RoHS

Lighting LED drivers need to be high in efficiency, low in cost and compliant to EMC regulations. The ED100 / ED101 series increases the efficiency of a LED driver circuit by reducing the need for X-capacitors. Thus, the power factor rises, and less unwanted reactive power is generated. The inductor is a combination of a strong common-mode inductance with a significant differential-mode inductance. It offers two filtering elements in one component. This helps the circuit designer to reduce the number of elements on the PCB, to reduce space requirement as well as lowering costs. Combined with the high MTBF value of the ED100 / ED101 series, a circuit design with reduced number of components profits for its overall reliability and lifetime.

### Features and benefits

- Increases power factor
- Combination of common- and differential-mode inductances
- Rated currents up to 2 A
- Compact and light-weight
- Small PCB footprint

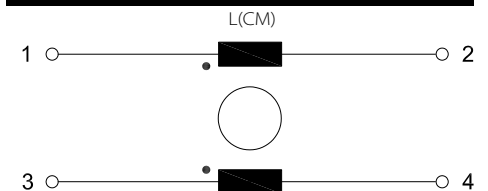
### Typical applications

- Mains operated LED drivers
- Electronic ballasts
- Input filters for switch mode power supplies

### Technical specifications

|                                                       |                                                       |
|-------------------------------------------------------|-------------------------------------------------------|
| Maximum continuous operating voltage                  | 300 VAC, 50/60 Hz                                     |
| Rated currents                                        | 0.2 to 2 A @ 65°C                                     |
| Rated inductance                                      | 3 to 40 mH common-mode                                |
| Stray inductance                                      | 0.1 - 3.1 mH                                          |
| Operating frequency                                   | DC to 60 Hz                                           |
| Temperature range (operation and storage)             | -40°C to 125°C                                        |
| Climatic class                                        | 40/125/56 acc. IEC 60068-1                            |
| High potential test voltage winding-to-winding @ 25°C | 1500 VAC, 2 sec                                       |
| Creepage and clearance distances                      | Creepage > 3 mm / Clearance > 2.5 mm between windings |
| Overvoltage category                                  | II acc. IEC 60664-1                                   |
| Design corresponding to                               | IEC 60938-1/-2                                        |
| Inductance reduction (DC bias with IN)                | Less than 10% at rated current                        |
| Cooling                                               | AN - natural convection                               |
| Flammability corresponding to                         | UL 94 V-0                                             |
| Altitude                                              | Derating above 2,000 m                                |
| Protection category                                   | IP 00                                                 |
| Pollution degree                                      | PD2 acc. IEC 60664-1                                  |
| MTBF                                                  | > 13,000,000 hours acc. MIL-HDBK-217                  |
| Vibration and shock                                   | 3M4 acc. IEC 60721-3-3                                |

### Typical electrical schematic



## Choke selection table - ED100 - High Differential-Mode Inductance

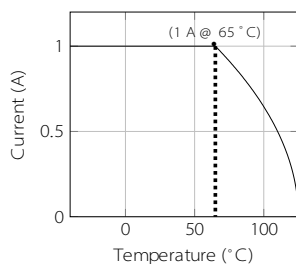
| ED100 choke    | Buy                                                                               | Rated current<br>I<br>(@65°C)<br>[A] | Common-<br>Mode Inductance<br>L (CM)<br>(@10kHz)<br>[mH] | Differential-<br>Mode Inductance<br>L (DM)<br>(@10kHz)<br>[mH] | DC resistance<br>R<br>(@25°C)<br>[Ω] | Weight<br>[g] |
|----------------|-----------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|--------------------------------------|---------------|
| ED100-0.2-40M  |  | 0.2                                  | 40                                                       | 1.1                                                            | 10.0                                 | 10            |
| ED100-0.3-27M  |  | 0.3                                  | 27                                                       | 0.8                                                            | 5.5                                  | 10            |
| ED100-0.4-20M  |  | 0.4                                  | 20                                                       | 0.6                                                            | 3.7                                  | 10            |
| ED100-0.5-15M  |  | 0.5                                  | 15                                                       | 0.4                                                            | 2.0                                  | 10            |
| ED100-0.75-12M |  | 0.75                                 | 12                                                       | 0.3                                                            | 1.2                                  | 11            |
| ED100-1-9M0    |  | 1                                    | 9                                                        | 0.3                                                            | 0.6                                  | 12            |
| ED100-1.25-7M0 |  | 1.25                                 | 7                                                        | 0.2                                                            | 0.4                                  | 13            |
| ED100-1.5-5M0  |  | 1.5                                  | 5                                                        | 0.1                                                            | 0.3                                  | 13            |
| ED100-2-3M0    |  | 2                                    | 3                                                        | 0.1                                                            | 0.2                                  | 13            |

## Choke selection table - ED101 - Very High Differential-Mode Inductance

| ED101 choke    | Buy                                                                                 | Rated current<br>I<br>(@65°C)<br>[A] | Common-<br>Mode Inductance<br>L (CM)<br>(@10kHz)<br>[mH] | Differential-<br>Mode Inductance<br>L (DM)<br>(@10kHz)<br>[mH] | DC resistance<br>R<br>(@25°C)<br>[Ω] | Weight<br>[g] |
|----------------|-------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|--------------------------------------|---------------|
| ED101-0.2-40M  |    | 0.2                                  | 40                                                       | 3.1                                                            | 10.0                                 | 11            |
| ED101-0.3-27M  |   | 0.3                                  | 27                                                       | 2.1                                                            | 5.5                                  | 11            |
| ED101-0.4-20M  |  | 0.4                                  | 20                                                       | 1.5                                                            | 3.7                                  | 11            |
| ED101-0.5-15M  |  | 0.5                                  | 15                                                       | 1.2                                                            | 2.0                                  | 12            |
| ED101-0.75-12M |  | 0.75                                 | 12                                                       | 0.9                                                            | 1.2                                  | 12            |
| ED101-1-9M0    |  | 1                                    | 9                                                        | 0.7                                                            | 0.6                                  | 13            |
| ED101-1.25-7M0 |  | 1.25                                 | 7                                                        | 0.5                                                            | 0.4                                  | 14            |
| ED101-1.5-5M0  |  | 1.5                                  | 5                                                        | 0.4                                                            | 0.3                                  | 14            |
| ED101-2-3M0    |  | 2                                    | 3                                                        | 0.2                                                            | 0.2                                  | 14            |

Test conditions: Measuring frequency: 10 kHz; 50 mV; Inductance tolerance: +50%, -30%; Resistance tolerance: ±15% @ 25°C; Electrical characteristics @ 25°C: ±2°C;  
Differential-mode inductance measurement between pin 1 and 2 (pin 3 and 4 shorted)  
For mechanical tolerances refer to mechanical data section.

## Current derating



Derating curve normalized to 1 A

## Distribution inventory

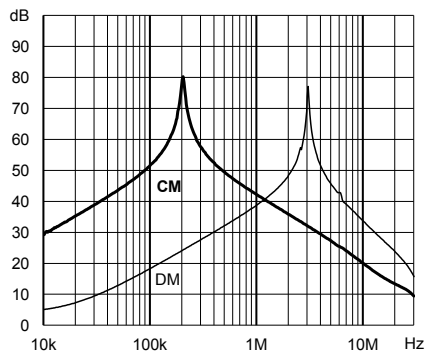
Up-to-date inventory levels for global distributors is available at

<https://products.schaffner.com/stock>

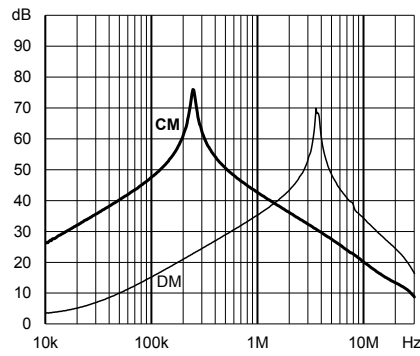


## Typical choke attenuation - ED100 - High Differential-Mode Inductance

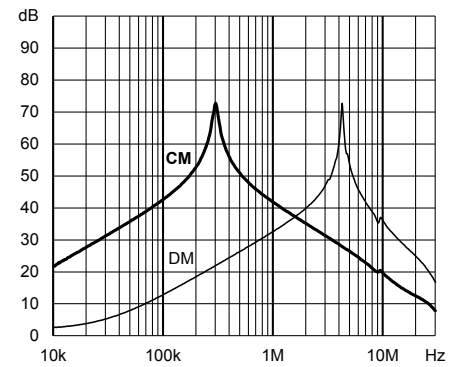
Per CISPR 17; 50  $\Omega$ /50  $\Omega$  asym



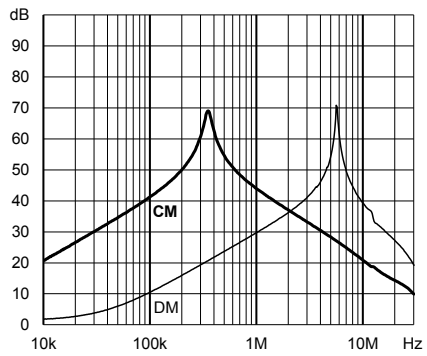
ED100-0.2-40M



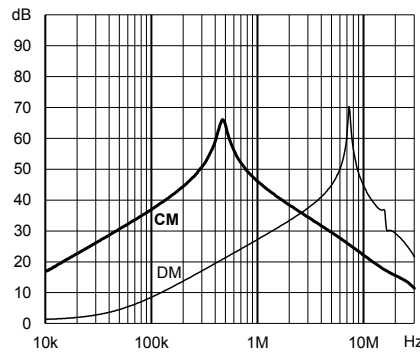
ED100-0.3-27M



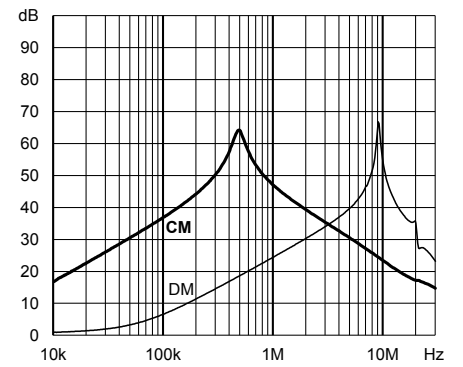
ED100-0.4-20M



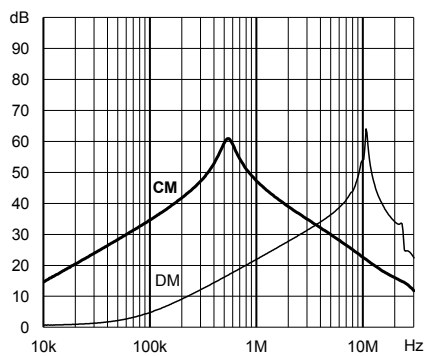
ED100-0.5-15M



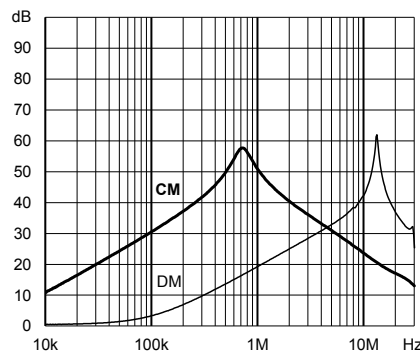
ED100-0.75-12M



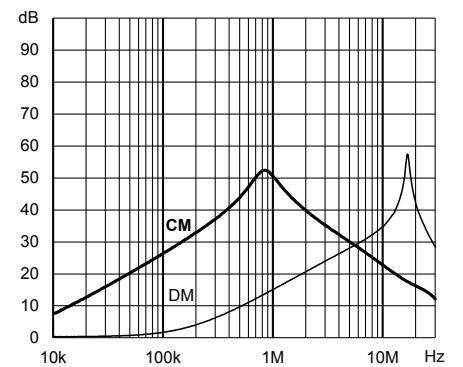
ED100-1-9M0



ED100-1.25-7M0



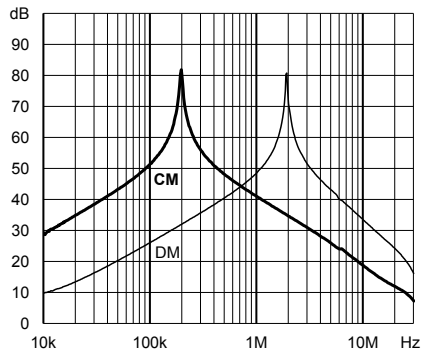
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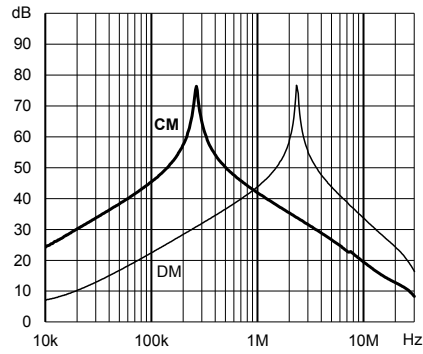
ED100-2-3M0

## Typical choke attenuation - ED101 - Very High Differential-Mode Inductance

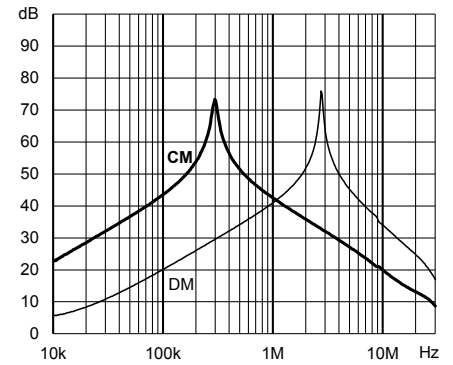
Per CISPR 17; 50  $\Omega$ /50  $\Omega$  asym



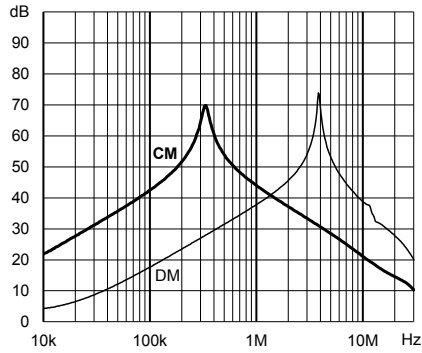
ED101-0.2-40M



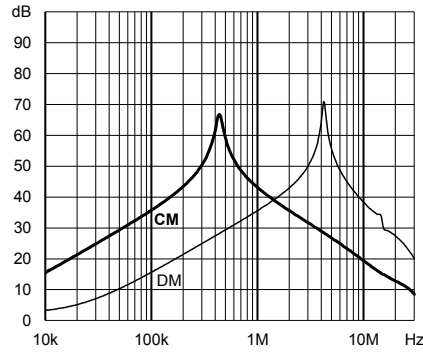
ED101-0.3-27M



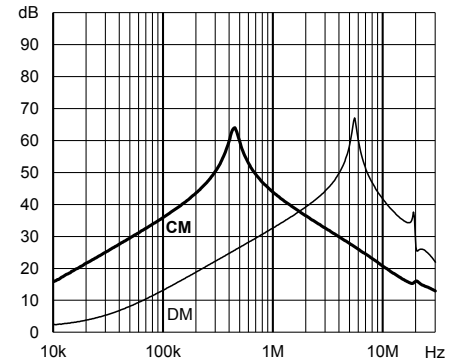
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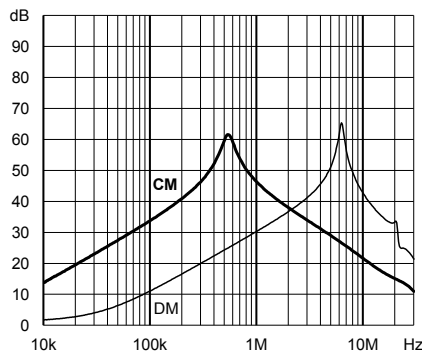
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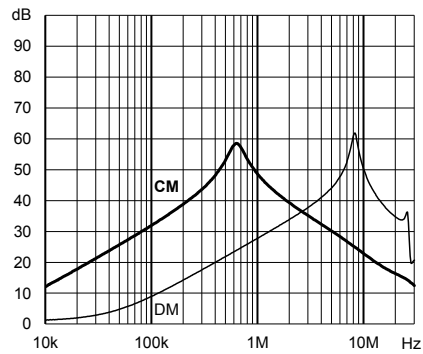
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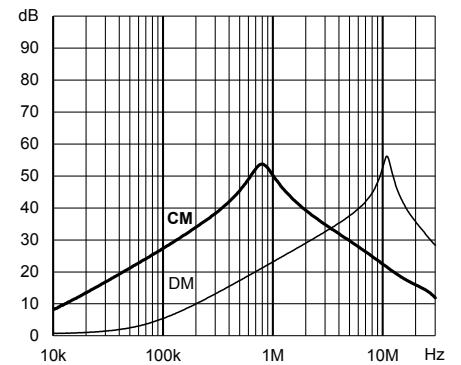
ED101-1-9M0



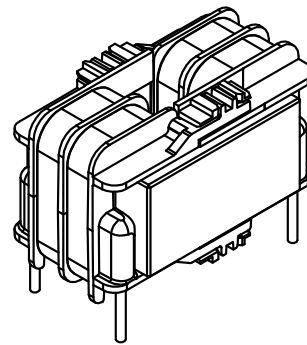
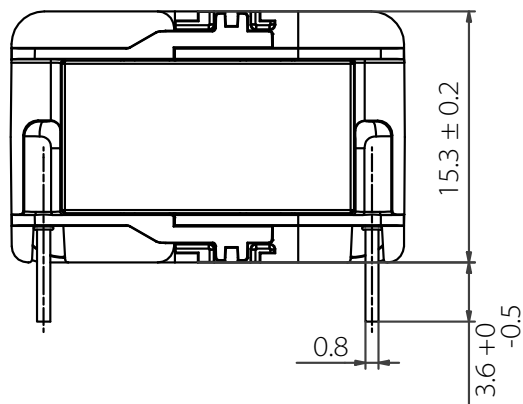
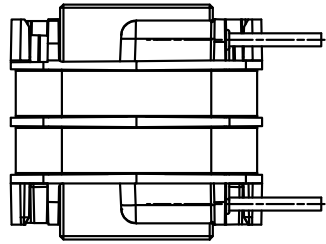
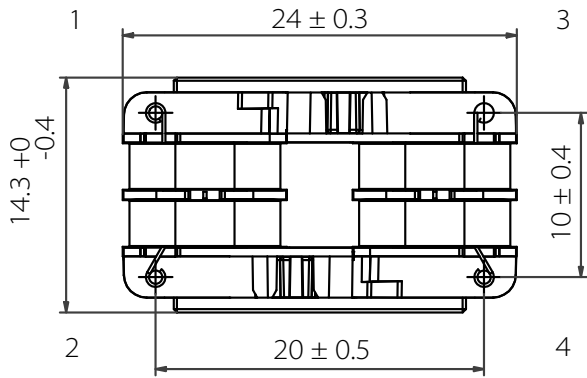
ED101-1.25-7M0



ED101-1.5-5M0



ED101-2-3M0

**Mechanical data - ED100 / ED101**

For dimensions [mm] without tolerances: ISO2768-m/EN22768-m applies

Pin material: Steel (base), Cu (under plating), Sn (final plating 6 $\mu$ m)

Pin 1 marked with "dot" on label



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