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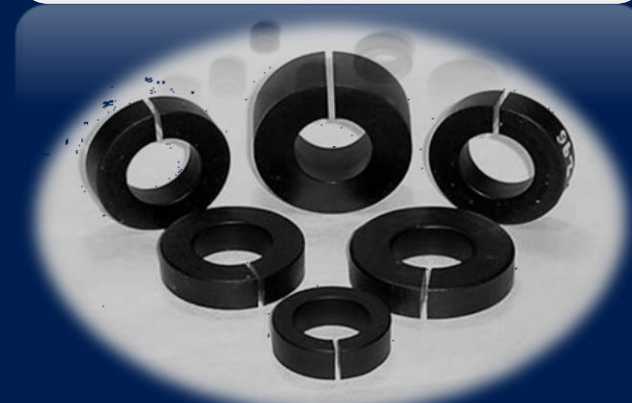
### NOTICES

1. When designing a component using this product and applying the designed components in any system, use this product only in the guaranteed range specified by Proterial. Do not use the product beyond guaranteed values specified by Proterial. Proterial will not be responsible for any damage or accident when this product is used beyond guaranteed values specified by Proterial. Even when the product is used within the specification given by Proterial, take appropriate measures for system, such as failsafe, to avoid any accident resulting in any bodily injury and/ or property damage. It is the responsibility of a user to take such measures.
2. These products are designed to be used for general electronic devices (e.g. office machinery, communication devices, measurement devices, household appliances, etc.) Performance and safety of this product for applications in the special fields which require particularly high reliability and quality, and whose application is potentially life threatening or could lead to physical harm in the event of malfunction is not confirmed. Such field may include: space science, aviation, nuclear energy, combustion control, transportation, safety devices and medical equipment. Be sure to examine the performance and safety when the product is used for these applications, take appropriate measures for system, such as failsafe, to avoid any accident resulting in any bodily injury and / or property damage. It is the responsibility of a user to make such measures.
3. Take appropriate measures, such as using an overvoltage protective device to prevent high voltage surge from being applied to the product if direct lightning surge, inductive lighting surge, switching surge, etc. is likely applied to this product. This product may be deteriorate in function when high-voltage surge is applied. It is the responsibility of the user to take such measures.
4. The user is responsible for checking the fitness of the production in radiation environment.
5. In no event shall Proterial be responsible for any claim, loss or damages caused by defects in design by the user.
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8. Please contact Proterial (India) Private Limited for any inquiry.

## Power Electronics Components (Catalogue)



**Microlite Series Toroidal  
Coated & Boxed Cores  
(XDGC/XDGH)**



**Microlite Series Toroidal  
Gapped Cores (MPFC)  
& Sensor Cores**

## Metglas® Microlite Series Toroidal cores

MICROLITE Series Toroidal cores have High Saturation Flux density, superior DC Bias and wide permeability range which makes them the first choice for various choke coil application enabling the designer to achieve system optimization

January, 2023

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## 1. Features & Applications

MICROLITE Toroidal Cores are manufactured with METGLAS® Amorphous Alloy 2605SA1 ribbon. They offer a unique combination of high saturation flux density(1.56T) and low core loss. These cores are suitable for high frequency energy storage and filter application.

### Microlite Series Toroidal cores

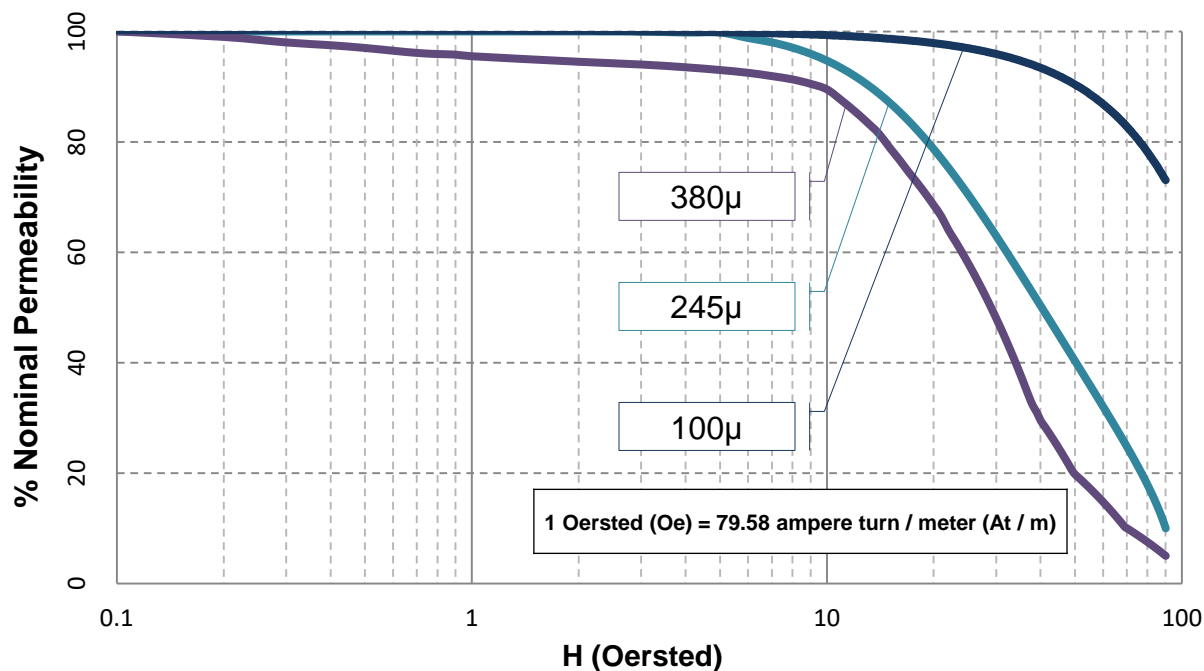
#### Physical Properties

Ribbon Thickness (μm)	23	Saturation Flux Density (Tesla)	1.56
Density (g/cm <sup>3</sup> )	7.18	Available Permeability's	100, 245,
Crystallization Temperature (°C)	508		380
Curie Temperature (°C)	395	Electrical Resistivity (μΩ.cm)	130

#### Magnetic Properties

Saturation Flux Density (Tesla)	1.56
Available Permeability's	100, 245,
	380
Electrical Resistivity (μΩ.cm)	130

Permeability vs. DC Bias Microlite100μ, 245μ & 380μ



#### Benefits:

- High saturation flux density
- Low core loss
- Fewer turns due to higher permeability

- Significant size reduction
- Extended bias capability

#### Applications:

- SMPS Output Inductors
- Choke Coils/Current limiting coils
- Inductor for inverters
- Differential Mode Chokes for xEV Applications, “x” can be battery / mild or full or plugin hybrid), PFC/DMC for On board Charger, conventional automobile electric circuit filters
- Differential Input Inductors
- Hall Effect Sensor (gaped cores)
- DMC for DC-DC converter

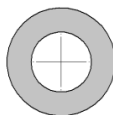
## 2. Standard specifications

Table 1 contains the readily available standard toroidal core sizes.  
Customized size and shape like oval / race-track shape core are available on request

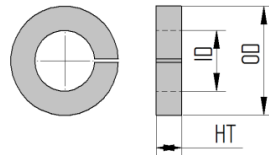
Lm: Mean magnetic path length  
Ac: Net cross sectional area

Table1: Standard specifications for MicroLite Coated / Boxed Cores

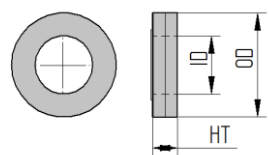
MicroLite Coated / Boxed	Coated / Boxed Core Dimensions			Performance parameters					
	OD (mm)	ID (mm)	HT (mm)	L <sub>m</sub>	A <sub>c</sub>	Mass	Initial Perm 100 (MPFC)	Initial Perm 245 (XDGC)	Initial Perm 380 (XDGH)
	mm	mm	mm	cm	cm <sup>2</sup>	g	Al (nH / N <sup>2</sup> )	Al (nH / N <sup>2</sup> )	Al (nH / N <sup>2</sup> )
	Max.	Min.	Max.	Nom.	Nom.	Nom.	±15%	±15%	±15%
MP1205MPFC / MDGC / MDGH	14.1	7.3	6.3	3.22	0.09	2.1	36.2	97.7	137.5
MP1306MPFC / XDGC / XDGH	16.4	5.6	8.7	3.37	0.15	3.7	56.2	137.8	213.7
MP1603MPFC / XDGC / XDGH	18.8	7.3	5.3	3.98	0.09	2.5	27.4	73.9	104.0
MP1710MPFC / XDGC / XDGH	20.8	10.3	12.0	4.74	0.20	6.7	52.5	128.5	199.3
MP2010MPFC / XDGC / XDGH	23.4	10.3	12.0	5.13	0.30	11.0	73.5	180.1	279.4
MP2310MPFC / XDGC / XDGH	26.5	10.2	12.1	5.60	0.43	17.1	95.4	233.7	362.4
MP2505MPFC / MDGC / MDGH	27.3	18.1	6.3	7.01	0.13	6.8	24.2	59.2	91.8
MP2510MPFC / XDGC / XDGH	28.4	16.7	12.1	7.01	0.27	13.6	48.3	118.4	183.6
MP2610MPFC / XDGC / XDGH	28.9	13.5	12.1	6.61	0.37	17.8	71.3	174.6	270.8
MP2616MPFC / MDGC / MDGH	27.7	13.1	17.1	6.21	0.78	34.8	158.0	387.0	600.2
MP3210MPFC / XDGC / XDGH	35.6	19.3	12.1	8.54	0.41	25.2	60.5	148.3	230.0
MP3310MPFC / XDGC / XDGH	36.7	12.4	12.1	7.49	0.71	38.3	119.6	292.9	454.3
MP3505MPFC / MDGC / MDGH	37.3	21.1	6.3	8.97	0.26	16.9	36.7	90.0	139.5
MP3510MPFC / XDGC / XDGH	38.7	16.1	12.1	8.48	0.66	40.0	97.5	238.9	370.5
MP3710MPFC / MDGC / MDGH	39.5	21.1	11.1	9.29	0.61	40.7	82.4	201.9	313.1
MP4010MPFC / XDGC / XDGH	43.7	19.3	12.1	9.76	0.73	51.3	94.3	231.1	358.4
MP4510MPFC / XDGC / XDGH	48.7	19.3	12.1	10.55	0.94	71.2	112.0	274.4	425.6
MP4520MPFC / MDGC / MDGH	47.9	21.1	20.6	10.55	1.88	145.2	224.0	548.8	851.2
MP5812MPFC / MDGC / MDGH	61.6	24.2	14.2	13.10	1.80	172.8	172.8	423.3	656.5
MP7050MPFC / MDGC / MDGH	13.6	7.3	6.1	3.14	0.08	1.8	31.9	78.2	121.3
MP7089MPFC / MDGC / MDGH	47.7	28.2	15.7	11.65	0.94	78.4	101.1	247.7	384.2
MP7109MPFC / MDGC / MDGH	58.6	36.5	15.3	14.64	1.03	108.6	88.7	217.4	337.2
MP7120MPFC / MDGC / MDGH	17.7	10.2	7.9	4.24	0.14	4.2	41.0	100.3	155.6
MP7195MPFC / MDGC / MDGH	55.6	26.3	16.5	12.49	1.60	143.4	160.9	394.1	611.3
MP7206MPFC / MDGC / MDGH	21.9	13.1	7.9	5.35	0.17	6.4	39.2	96.2	149.1
MP7254MPFC / MDGC / MDGH	40.3	24.2	15.6	9.91	0.75	53.6	95.5	234.1	363.1
MP7310MPFC / MDGC / MDGH	24.1	13.1	7.9	5.66	0.22	9.0	49.2	120.7	187.1
MP7324MPFC / MDGC / MDGH	37.9	22.4	11.1	9.24	0.49	32.3	66.2	162.3	251.7
MP7350MPFC / MDGC / MDGH	24.1	13.9	9.9	5.79	0.27	11.1	58.1	142.3	220.8
MP7380MPFC / MDGC / MDGH	18.7	10.0	7.9	4.35	0.17	5.3	49.2	120.6	187.0
MP7438MPFC / MDGC / MDGH	47.7	24.6	19.0	11.05	1.43	113.4	162.6	398.4	618.0
MP7548MPFC / MDGC / MDGH	34.0	19.2	11.1	8.15	0.47	27.5	72.4	177.4	275.1
MP7585MPFC / MDGC / MDGH	35.7	23.4	9.9	9.08	0.32	21.0	44.6	109.3	169.5
MP7715MPFC / MDGC / MDGH	52.8	31.7	13.9	12.97	0.89	83.1	86.4	211.7	328.4
MP7930MPFC / MDGC / MDGH	27.8	13.1	11.1	6.21	0.48	21.4	96.9	237.3	368.1



Coated Core (MDGH/MDGC)



Gapped Core (MPFC)



Boxed Cores (XDGC/XDGH)

**Note:1- X** can be:

"P" type box (Boxed Core) with Continuous operating temperature 120° C (max.)
"L" type box (Boxed Core) with Continuous operating temperature 130° C (max.)
"V" type box (Boxed Core) with Continuous operating temperature 150° C (max.)
"M" type (Powder Coated Cores) with Continuous operating temperature 150° C (max.)

**Note:2-** MPFC cores are available in powder coated version only