PROTERIAL

Proterial (India) Private Limited
Plot No. 94 & 95, Sector 8, IMT Manesar, Gurugram-122050, Haryana, India
Tel: +91-124-4124800

Email:	Mob:	Tel:
anuj.sharma@india.proterial.com	+91-9818563744	+91-124-4124840
hemant.sharma@india.proterial.com	+91-9816028716	+91-124-4124834
tarun.sharma@india.proterial.com	+91-9971676541	+91-124-4124879

www.proterial.com
www.india.proterial.com

Proterial, Ltd.
Global Headquarters
Toyosu Prime Square, 5-6-36 Toyosu,
Koto-ku, Tokyo 135-0061, Japan

Proterial America, Ltd.
85 W. Algonquin Rd., Suite 400 Arlington Heights,
IL 60005-4142, U.S.A.
Tel: +1-847-364-7200

Proterial Europe GmbH
Europe Head Office
Immermannstrasse 14-16,
40210 Dusseldorf, Germany
Tel: +49-211-16009-0

Proterial Taiwan, Ltd.
No.7 & 7-1, WuCyuan 8Th Road, Wugu District,
New Taipei City 24891, Taiwan
Tel: +886-2-2299-3555

⚠ 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 lighting 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.

6. The products and their specifications are subject to change without notice Please check the latest catalogue, technical documents or specifications before your final design, procurement or use of the products.

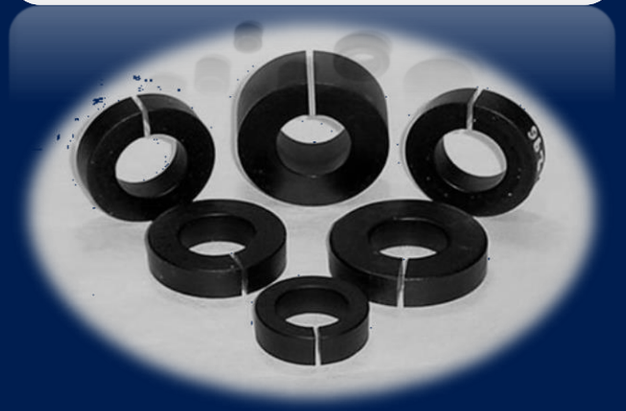
7. No warranty, right or license in connection with any patent, trademark, copyright, or any other intellectual property right shall be, expressly or impliedly, given or granted to any party by Proterial under this catalogue.

8. Please contact Proterial (India) Private Limited for any inquiry.

January, 2023

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

Metglas® is a registered mark of Metglas, Inc.

Proterial (India) Private Limited

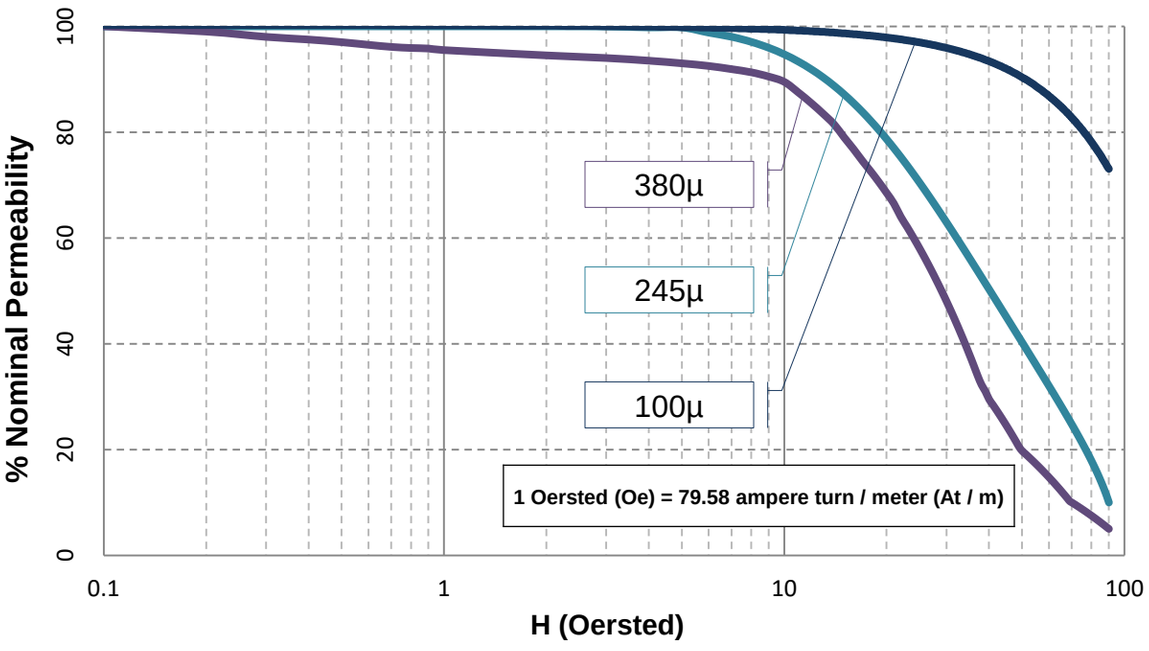
1. Features & Applications

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		Magnetic Properties	
Ribbon Thickness (µm)	23	Saturation Flux Density (Tesla)	1.56
Density (g/cm³)	7.18	Available Permeability's	100, 245, 380
Crystallization Temperature (ºC)	508		
Curie Temperature (ºC)	395	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 Input Inductors
- Hall Effect Sensor (gaped cores)
- DMC for DC-DC converter
- 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

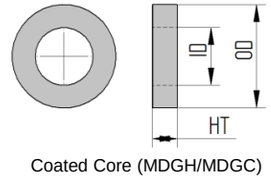
2. Standard specifications

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

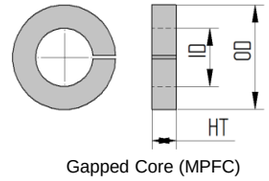
Lm: Mean magnetic path length
Ac: Net cross sectional area

Table1: Standard specifications for MicroLite Coated / Boxed Cores

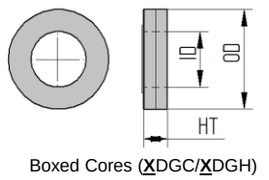
MicroLite Coated / Boxed	Coated / Boxed Core Dimensions			Performance parameters					
Part Name	OD (mm)	ID (mm)	HT (mm)	L_m	A_c	Mass	Initial Perm 100 (MPFC)	Initial Perm 245 (XDGC)	Initial Perm 380 (XDGH)
	mm	mm	mm	cm	cm^2	g	Al (nH / N^2)	Al (nH / N^2)	Al (nH / N^2)
	Max.	Min.	Max.	Nom.	Nom.	Nom.	±15%	±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 120º C (max.)
"L" type box (Boxed Core) with Continuous operating temperature 130º C (max.)
"V" type box (Boxed Core) with Continuous operating temperature 150º C (max.)
“M” type (Powder Coated Cores) with Continuous operating temperature 150º C (max.)

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

For Safety and the proper usages, you are requested to approve our product specifications or to transact the approval sheet for product specifications before ordering. This catalogue and its contents are subject to change without notice.