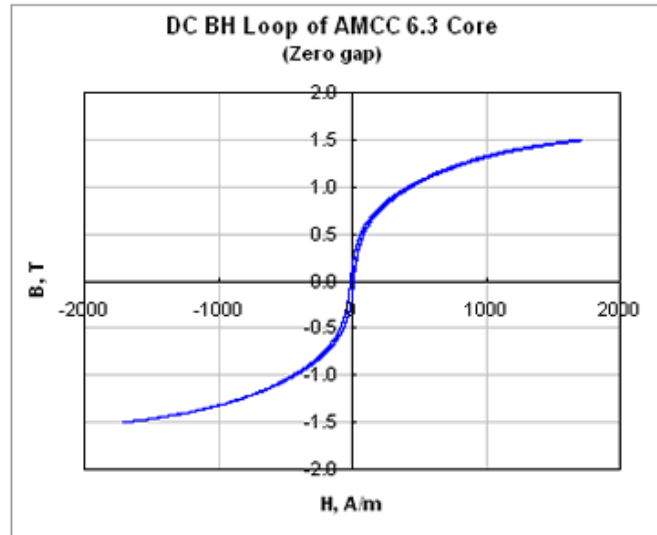


POWERLITE[®] C-Cores are manufactured with iron based Metglas[®] amorphous Alloy 2605SA1. Their unique combination of low loss and high saturation flux density take advanced power conditioning applications to higher performance levels than previously possible with conventional ferromagnetic Materials.



Applications

For a wide range of high frequencies and hot-spot temperatures (up to Class F), POWERLITE C-Cores are used in a growing list of advanced power conditioning applications including:

- UPS and SMPS Power Factor Correction Chokes
- UPS Harmonic Filter Inductors
- High-Power Outdoor Industrial Ballasts
- Welding Power Supplies
- High-Speed Rail Power Systems

Benefits

Manufactured in a variety of ultra-efficient core configurations, POWERLITE C-Cores provide significant cost, design and performance benefits over ordinary Si-Fe, ferrite and MPP cores such as:

- High Saturation Flux Density (1.56 T)
- Low Profile – enables weight and volume reductions of up to 50%
- Low Temperature Rise – enabling smaller compact designs
- Low Loss – resulting from micro-thin Metglas ribbon (25 μm)

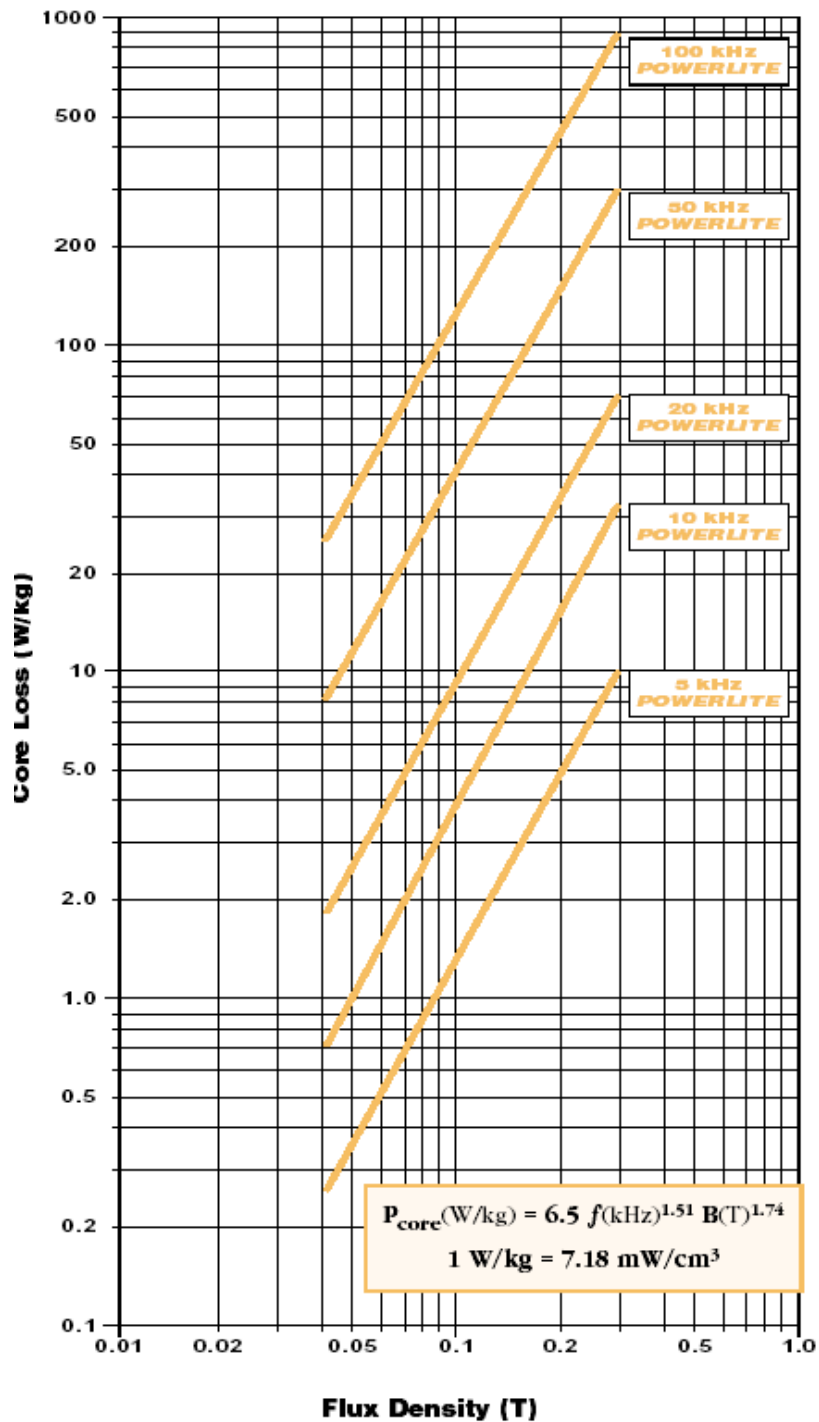
Physical Properties METGLAS Alloy 2605SA1

Ribbon Thickness (μm) . . . . .	.23
Density (g/cm ³) . . . . .	.718
Thermal Expansion (ppm/°C) . . . . .	.76
Crystallization Temperature (°C) . . . . .	.508
Curie Temperature (°C) . . . . .	.399
Continuous Service Temperature (°C) . . . . .	.150
Tensile Strength (MN/m ²) . . . . .	.1k-1.7k
Elastic Modulus (GN/m ²) . . . . .	.100-110
Vicker’s Hardness (50g load) . . . . .	.900

Magnetic Properties METGLAS Powerlite Cores

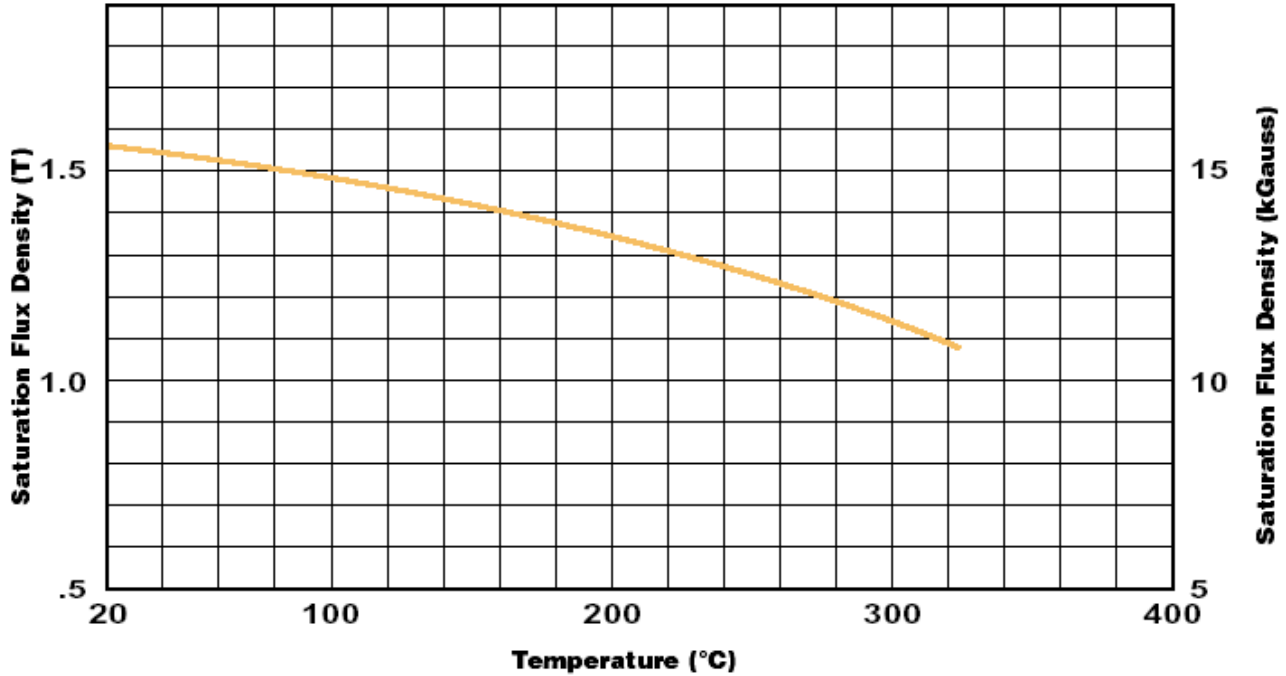
Saturation Flux Density (T).	1.56
Permeability (depending on gap size)	VARIABLE
Saturation Magnetostriction (ppm) . . . . .	.27
Electrical Resistivity (μΩ.cm) . . . . .	.130

Core Loss vs. Flux Density† @ 25°C

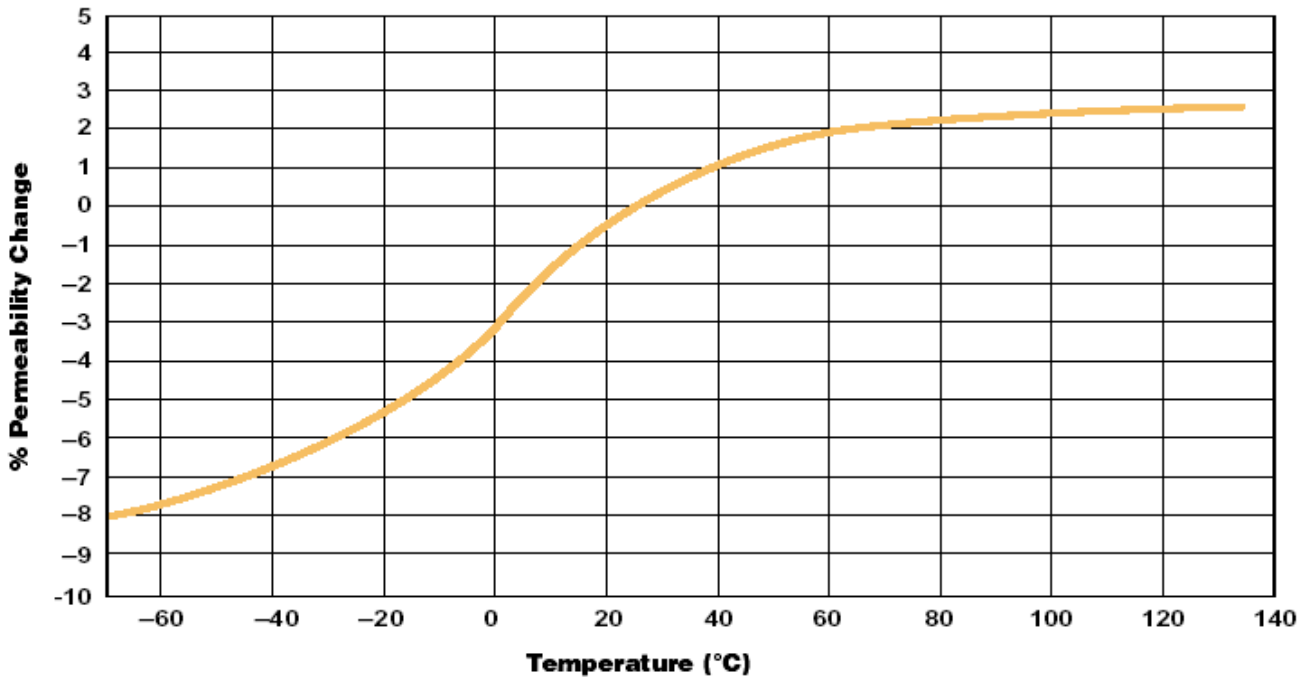


† These curves were determined from ac data; use 1/2 the actual .B to determine core loss for unidirectional applications.

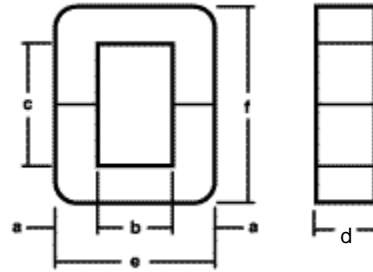
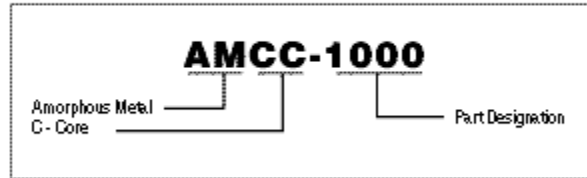
**Saturation Induction vs. Temperature
POWERLITE® C-Cores**



**Permeability vs. Temperature
POWERLITE® C-Cores**



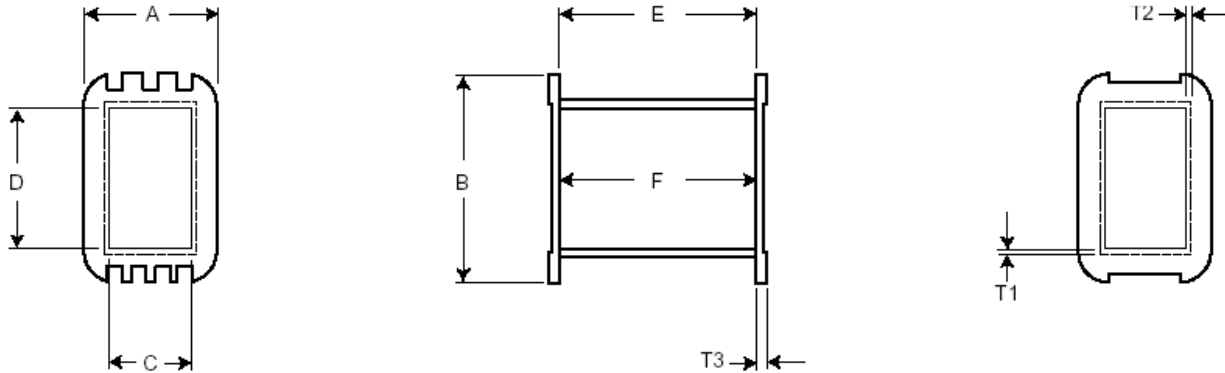
Product Code Designation



POWERLITE® C - Cores															
Core No.	CORE DIMENSION										PERFORMANCE PARAMETERS				
	a (mm)	±	b (mm) ref *	c (mm) ref *	d (mm)	±	e (mm)	±	f (mm)	±	Im (cm)	Ac (cm ²)	Wa (cm ²)	Ap (cm ⁴)	Mass (g)
AMCC 4	9.0	0.50	10.0	32.80	15.0	0.50	28.00	1.50	50.8	1.25	12.20	1.11	3.30	3.60	99
AMCC 6.3	10.0	0.50	11.0	33.00	20.0	0.50	31.00	1.00	53.0	2.00	12.80	1.60	3.60	6.0	154
AMCC 8	11.0	0.80	13.0	30.00	20.0	0.50	35.00	1.00	52.0	2.00	13.00	1.80	3.90	7.00	172
AMCC 10	11.0	0.80	13.0	40.00	20.0	0.50	35.00	1.00	62.0	2.00	15.40	1.80	5.20	9.40	198
AMCC 16A	11.0	0.80	13.0	40.00	25.0	0.50	35.00	1.00	62.0	2.00	15.10	2.30	5.20	11.70	248
AMCC 16B	11.0	0.80	13.0	50.00	25.0	0.50	35.00	1.00	72.0	2.00	17.00	2.30	6.50	14.70	281
AMCC 20	11.0	0.80	13.0	50.00	30.0	0.50	35.00	1.00	72.0	2.00	17.50	2.70	6.50	17.60	337
AMCC 25	13.0	0.80	15.0	56.00	25.0	0.50	41.00	1.00	82.0	2.00	19.60	2.70	8.40	22.40	379
AMCC 32	13.0	0.80	15.0	56.00	30.0	0.50	41.00	1.00	82.0	2.00	20.00	3.20	8.40	26.90	454
AMCC 40	13.0	0.80	15.0	56.00	35.0	0.50	41.00	1.00	82.0	2.00	19.90	3.70	8.40	31.30	530
AMCC 50	16.0	1.00	20.0	70.00	25.0	0.50	52.00	1.00	102.0	3.00	24.90	3.30	14.00	45.90	586
AMCC 63	16.0	1.00	20.0	70.00	30.0	0.50	52.00	1.00	102.0	3.00	25.30	3.90	14.00	55.10	703
AMCC 80	16.0	1.00	20.0	70.00	40.0	1.00	52.00	1.00	102.0	3.00	25.40	5.20	14.00	73.50	938
AMCC 100	16.0	1.00	20.0	70.00	45.0	1.00	52.00	1.00	102.0	3.00	25.00	5.90	14.00	82.7	1,055
AMCC 168S	20.4	0.50	30.0	154.20	20.0	0.50	70.50	1.25	195.0	3.00	45.40	3.35	45.80	153.2	1,101
AMCC 125	19.0	1.00	25.0	83.00	35.0	1.00	63.00	1.00	121.0	3.00	30.20	5.50	20.80	113.1	1,166
AMCC 160	19.0	1.00	25.0	83.00	40.0	1.00	63.00	1.00	121.0	3.00	28.50	6.20	20.80	129.3	1,333
AMCC 200	19.0	1.00	25.0	83.00	50.0	1.00	63.00	1.00	121.0	3.00	29.80	7.80	20.80	161.6	1,666
AMCC 367S	25.8	1.00	67.0	97.80	25.0	0.70	117.60	1.50	149.4	1.50	43.78	5.29	63.81	340.1	1,668
AMCC 250	19.0	1.00	25.0	90.00	60.0	1.00	63.00	1.00	128.0	3.00	31.40	9.30	22.50	210.3	2,095
AMCC 320	22.0	1.00	35.0	85.00	50.0	1.00	79.00	1.00	129.0	4.00	32.50	9.00	29.80	268.3	2,167
AMCC 400	22.0	1.00	35.0	85.00	65.0	1.00	79.00	1.00	129.0	4.00	33.60	11.70	29.80	348.8	2,817
AMCC 500	25.0	1.00	40.0	85.00	55.0	1.00	90.00	1.00	135.0	4.00	35.60	11.30	34.00	383.4	2,890
AMCC 630	25.0	1.00	40.0	85.00	70.0	1.00	90.00	1.00	135.0	4.00	35.60	14.30	34.00	487.9	3,678
AMCC 800A	25.0	1.00	40.0	85.00	85.0	1.50	90.00	1.00	135.0	4.00	35.60	17.40	34.00	592.5	4,466
AMCC 800B	30.0	1.00	40.0	95.00	85.0	1.50	100.00	1.00	155.0	4.00	39.30	21.00	38.00	794.6	5,972
AMCC 1000	33.0	1.00	40.0	105.00	85.0	1.50	106.00	1.00	171.0	5.00	42.70	23.00	42.00	966.0	7,109

* Products generally do not fully comply with material characteristics – deviations may occur due to shape and size.

POWERLITE® C-Cores - Bobbins



BOBBIN NUMBER	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	T1 (mm)	T2 (mm)	T3 (mm)
AMCC-6.3BOB	21	31.5	11.5	21.5	30	32	1.0	1.0	2.0
AMCC-8BOB	24.5	34	13	21.5	27.5	29.5	1.0	1.0	2.0
AMCC-10BOB	25	34	12	20.5	38	40	1.0	1.0	2.0
AMCC-16ABOB	25	39	12	25.5	38	40	1.0	1.2	2.0
AMCC-16BBOB	25	39	12	25.5	48	50	1.0	1.2	2.0
AMCC-20BOB	25	44	12	30.5	48	50	1.0	1.2	2.0
AMCC-25BOB	27.5	42.5	15.5	26.5	52.5	55	1.0	1.2	2.2
AMCC-32BOB	28	49	14	30.5	53	56	1.2	1.5	2.2
AMCC-40BOB	27.5	55	15.5	38.5	52	54.5	1.0	1.2	2.2
AMCC-50BOB	36	48	17	25.5	67	70	1.5	1.8	2.4
AMCC-63BOB	35	56	18	31.5	66	68	1.2	1.8	2.4
AMCC-80BOB	36	63	17	41	67	70	1.2	1.8	2.4
AMCC-100BOB	35.5	70	18	47	66.5	69.5	1.2	1.8	2.4

POWERLITE® C-Core Bobbins - Material Properties

MATERIAL: Arnite

FLAMMABILITY RATING: UL94V0

TEMPERATURE RATING: Vical Softening Point = 200°C

Contact Information:

AMERICAS

Hitachi Metals America Ltd.

2101 S. Arlington Hts. Rd., Ste. 116
Arlington Heights, IL
60005-4142

Tel: (847) 364-7200 ext. 8219

Fax: (847) 364-7279 Fax

Metglas-hma@metglas.com

ASIA

Hitachi Metals Hong Kong

Units 2212-14, 22/F.
Miramar Tower, 132 Nathan Road,
Tsimshatsui, Kowloon
Hong Kong

Tel: 852-27244183

Fax: 852-27227660

metglas-asia@metglas.com

EUROPE

Hitachi Metals Europe

Immermannstrasse 14-16
D- 40210 Düsseldorf
Germany

Tel: 49(0)211-16009-23

Fax: 49(0)211-16009-30

metglas-europe@metglas.com