

SOFT FERRITES

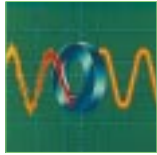
Selection Guide





EMI suppression

For small signal application like EMI suppression, all kind of filters or broadband transformers, Thomson-CSF Passive Components proposes a wide range of toroids as well as a range of E- and U- cores. These are available in material grades especially developed for that purpose with initial permeabilities from 2500 up to 10000.



FILTERING APPLICATION

Toroids

See fig.	P / N	a mm	h mm	c mm	A2 *	Ferrinox® material ($A_L nH \pm 25\%$)					
						A4		A6		A9	
A	T-0400A	4 ± 0.2	2.4 ± 0.1	1.6 ± 0.15	1650	960	840	650	570	410	360
A	T-0630A	6.3 ± 0.2	3.8 ± 0.15	2.5 ± 0.15	2500	1500	1300	1000	880	560	495
A	T-1000A	10 ± 0.3	6 ± 0.2	4 ± 0.15	4100	2450	2150	1600	1400	900	790
A	T-1400A	14 ± 0.4	9 ± 0.4	5 ± 0.3		2400	2100	1750	1550	1100	970
A	T-1600A	16 ± 0.5	9.6 ± 0.3	6.3 ± 0.2		3800	3350	2500	2200	1600	1400
A	T-2000B	20 ± 0.5	10 ± 0.35	7 ± 0.4		5400	4750	3900	3400	2400	2150
A	T-2500A	25 ± 0.75	15 ± 0.45	10 ± 0.3		6000	5300	4000	3500	2500	2200
A	T-2800A	27.6 ± 0.85	17.6 ± 0.55	19 ± 0.7		10000	9000	6800	6200	4300	3800
A	T-3150A	31.5 ± 1	19 ± 0.6	12.5 ± 0.4		7500	6600	5000	4400	3150	2650
A	T-3600A	36 ± 0.8	23 ± 0.5	15 ± 0.5		7700	6800	5400	4750	3350	2950
A	T-4000A	40 ± 1.2	24 ± 0.7	16 ± 0.5		9600	8400	6300	5500	4000	3580
A	T-5000A	50 ± 1.5	15 ± 0.5	10 ± 0.5		14400	12500	9600	8500	6000	5300
A	T-6300A	63 ± 2	38 ± 1.2	25 ± 0.8		15100	13500	10000	8800	6300	5600

960 : A_L value for non-coated toroids.

US size toroids

See fig.	P / N	a mm (in)	h mm (in)	c mm (in)	A2 *	Ferrinox® material ($A_L nH \pm 25\%$)							
						A4		A5		A6		A9	
A	T-0480A	4.84 ± 0.12 (.190 ± .004)	2.28 ± 0.07 (.089 ± .002)	1.28 ± 0.07 (.050 ± .002)	1900	1150	1000	960	850	770	680	480	425
A	T-0950A	9.52 ± 0.25 (.374 ± .009)	4.75 ± 0.13 (.187 ± .005)	3.17 ± 0.25 (.124 ± .009)	4400	2650	2300	2135	1950	1750	1550	1100	970
A	T-1270A	12.7 ± 0.25 (.5 ± .009)	7.14 ± 0.18 (.281 ± .007)	4.7 ± 0.13 (.185 ± .005)	5400	3100	2800	2750	2550	2150	1900	1475	1350
A	T-1270B	12.7 ± 0.4 (.5 ± .009)	7.14 ± 0.25 (.281 ± .007)	6.35 ± 0.25 (.25 ± .007)	7300	4400	3850	3650	3200	2900	2550	1820	1600
A	T-1270C	12.7 ± 0.25 (.5 ± .009)	7.92 ± 0.25 (.311 ± .009)	6.35 ± 0.25 (.25 ± .009)	6000	3500	3100	3000	2800	2400	2100	1490	1310
A	T-2210A	22.1 ± 0.38 (.870 ± 0.14)	13.72 ± 0.25 (.540 ± .008)	12.7 ± 0.25 (.5 ± .009)		7300	6000	6040	5500	4850	4250	3020	2500
A	T-2210B	22.1 ± 0.43 (.870 ± .014)	13.72 ± 0.28 (.540 ± .008)	6.35 ± 0.25		3650	3100	3055	2700	2400	2150	1510	1330
A	T-2540A	25.4 ± 0.5 (1 ± 0.19)	15.5 ± 0.38 (.610 ± 0.14)	7.93 ± 0.25 (.312 ± .009)		4700	4150	3900	3450	3150	2750	1950	1720
A	T-3800A	38.1 ± 0.76 (1.5 ± .029)	19.05 ± 0.38 (.75 ± .014)	12.7 ± 0.25 (.5 ± .009)		10500	9300	8500	7700	7000	6200	4400	3870
A	T-3800B	38.1 ± 0.76 (1.5 ± .029)	19.05 ± 0.38 (.75 ± .014)	6.4 ± 0.25 (.25 ± .006)		5300	4650	4400	3850	3100	3100	2200	1930

* : $A_L nH \pm 30\%$. All mechanical dimensions are given for non-coated toroids.

Coating : ☉ Polyamide ☉ Thickness : < 0.4 mm (to be added on mechanical dimensions). ☉ Breakdown voltage > 2000 VDC

E cores

See fig.	P / N	a mm	b mm	c mm	d mm	f mm	g mm	h mm	Ferrinox® material ($A_L nH \pm 25\%$)		
									A4	A6	A8
B	E-1605A	16 ± 0.5	7.15 ± 0.2	4.9 ± 0.2	5.1 ± 0.2	3.8 mini	4 ± 0.15	12 ± 0.25	2560	2400	1400
B	E-1905A	19.15 ± 0.75	7.9 ± 0.25	4.8 ± 0.2	5.6 ± 0.15	4.82 mini	4.65 ± 0.15	14.75 ± 0.3	2600	2100	1400
B	E-2006A	20 ± 0.4	9.95 ± 0.15	5.7 ± 0.2	7.15 ± 0.15	4.1 mini	5.75 ± 0.15	14.4 ± 0.30	3000	2500	2000
B	E-2506A	25.3 ± 0.5	9.5 ± 0.25	6.35 ± 0.25	6.35 ± 0.25	6.1 mini	6.32 ± 0.125	19.02 ± 0.38	4000	3500	2500
B	E-2506C	25.4 ± 0.5	16 ± 0.25	6.35 ± 0.25	12.83 ± 0.25	6 mini	6.35 ± 0.15	19.04 ± 0.4	2750	2150	1750
B	E-3007B	30.1 ± 0.7	15 ± 0.2	7.05 ± 0.25	10 ± 0.3	6.15 mini	6.95 ± 0.25	19.9 ± 0.4	4600	3800	3200
B	E-3509A	34.9 ± 0.7	14.4 ± 0.25	9.15 ± 0.25	9.9 ± 0.25	8 mini	9.2 ± 0.25	26 ± 0.5	5300	4700	4000

U cores

See fig.	P / N	a mm	b mm	c mm	d mm	e mm	h mm	Ferrinox® material ($A_L nH \pm 25\%$)		
								A4	A6	A8
C	U-1105A	10.5 ± 0.4	7.8 ± 0.2	5 ± 0.15	5.25 ± 0.25	2.5 ± 0.2	5 mini	1600	1300	1100
C	U-1204A	12 ± 0.55	9.2 ± 0.3	3.95 ± 0.15	5.05 ± 0.15	3.85 ± 0.15	3.45 mini	1850	1600	1250
C	U-1506A	15.2 ± 0.7	11.2 ± 0.5	6.45 ± 0.25	6.05 ± 0.35	5 ± 0.2	5.2 ± 0.3	3000	2400	2150
C	U-1606A	15.7 ± 0.5	9.9 ± 0.2	6 ± 0.2	6.2 ± 0.25	4.5 ± 0.2	6.5 mini	2400	2000	1700
C	U-1706B	17 ± 0.7	16.6 ± 0.2	5.95 ± 0.2	12.15 ± 0.4	4.5 ± 0.15	7 mini	1920	1600	1300
C	U-2007A	21 ± 0.6	15.3 ± 0.5	7.5 ± 0.3	8.25 ± 0.25	7.3 ± 0.2	6.3 ± 0.3	4220	3100	2800

Fig. A

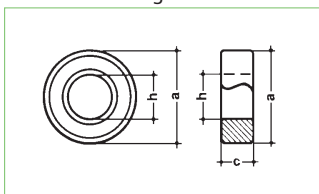


Fig. B

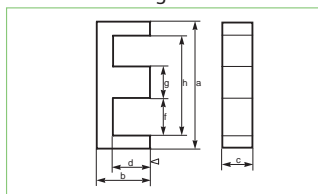
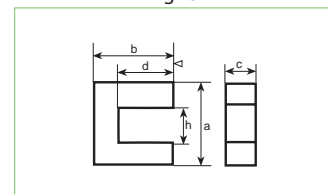
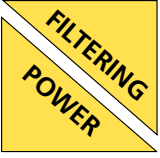


Fig. C



Materials



In our soft ferrite publications, symbols will guide you to recognize the preferred material and design for key-applications. Thomson-CSF Passive Components experience in soft ferrite offers you design and application support. Thomson-CSF Passive Components can also work with you on your specific design requirements, through its professional technical team and production department specialized in custom design products. This Soft Ferrite material classification refers to the standard IEC 1332 (soft ferrite material classification).

Power application

Symbols	Units	Test conditions	Material grade							
			B1	B2	B3	B5	B6	F1	F2	F4
			PW1a / PW1b	PW3b	PW1b	Class PW2a / PW2b		PW2b	PW3b	PW4b
μ_i		25°C	2500 ± 25%	1900 ± 25%	1900 ± 25%	1800 ± 25%	2200 ± 25%	2300 ± 25%	1900 ± 25%	1100 ± 25%
\hat{B} at \hat{H} (nominal values)	mT	400 A/m 25°C	450	460	470	470	440	450	420	390
		100°C	340	360	380	380	330	340	320	310
		1600 A/m 25°C	480	490	500	500	460		450	420
		100°C	370	380	400	400	350		350	330
Hc	A/m	25°C	12	16	16	16	16		15	15
		100°C	10	10	10	10	10	10	10	10
θ_c	°C		> 200	> 250	> 250	> 250	> 200	> 230	> 200	> 200
P _L	mW/cm ³	16kHz - 100°C 200mT	< 100		< 80					
		25kHz - 100°C 200mT	< 180		< 150		< 100*			
		32kHz - 100°C 200mT	< 250		< 200	< 140				
		60kHz - 100°C 200mT		< 340		< 350		< 280		
		100kHz - 100°C 100mT		< 150				< 580		
		100kHz - 100°C 200mT			< 120					
		300kHz - 100°C 50mT							< 100	< 80
		1000kHz - 100°C 25mT							< 130	< 100
ρ	Ω m	25°C	1	6	6	6	6	6	6	
Density	g / cm ³	25°C	4.8	4.8	4.8	4.8	4.7	4.8	4.6	4.8

Values measured on □ 35 X □ 12 x 18 reference toroid * Values measured at 70°C

Filtering application

Symbols	Units	Test conditions	Material grade					
			A2	A4	A5	A6	A8	A9
			Class					
			CL11	CL9	CL9	CL9	CL8	CL7
μ_i		25°C	10000 ± 30%	6000 ± 25%	5000 ± 25%	4000 ± 25%	3500 ± 25%	2500 ± 25%
\hat{B} at \hat{H} (nominal values)	mT	25°C	330	350	350	410	450	480
		100°C	200	250	250	310	340	370
Hc	A / m	25°C	800	800	800	800	400	1600
		100°C	6.2	6.4	6.4	12	12	12
θ_c	°C	25°C	3.1	4.8	4.8	8	10	10
		100°C	> 120	> 140	> 140	> 160	> 200	> 200
tgδ / μ at f	x10 ⁻⁶ kHz	25°C	< 7	< 9	< 6	< 9		< 8
			10	10	10	10		100
ρ	Ω m	25°C	0.3	0.5	0.5	0.5	2	1
Density	g / cm ³	25°C	4.9	4.8	4.8	4.7	4.8	4.8

Values measured on ○ 21 X ○ 14 x 10 reference toroid

- μ_i : initial permeability
- \hat{B} : flux density (peak value)
- 1 A/m = 10⁻² A/cm = 1.26 x 10⁻² Oe (oersted).
- H : AC magnetic field strength
- \hat{H}_c : coercive field (Peak value)
- f_c : cut-off frequency
- P_L : power losses
- ρ : Resistivity
- 1 mT (millitesla) = 10 G (Gauss)

"Specifications mentioned in this publication are subject to change without notice"



UPS / High power

For your particular needs in high power applications (UPS, welding, induction heating and drives), Thomson-CSF Passive Components provides with a wide range of large cores in E, U or toroidal shapes. We recommend B1 grade for standard and B2 grade for low power loss requirements.



P O W E R
A P P L I C A T I O N

U cores

See fig.	P / N	*	a mm	b mm	c mm	d mm	h mm	Ferrinox® material ($A_L nH \pm 25\%$)	
								B1	B2
1	U-9316A	*	93 ± 1.8	76 ± 0.5	16 ± 0.5	48 ± 0.9	34.6 mini	3710	2900
1	U-9320A	*	93 ± 1.8	76 ± 0.5	20 ± 0.5	48 ± 0.9	34.6 mini	4640	3600
1	U-9330B	*	93 ± 1.8	76 ± 0.5	30 ± 0.6	48 ± 0.9	34.6 mini	7000	5400
1	U-102A	*	101.6 ± 2	57.1 ± 0.4	25.4 ± 0.8	31.7 ± 0.75	50.8 ± 3.6	6010	4700
1	U-126A	*	126 ± 4	91 ± 1	20 ± 0.6	63 ± 2	70 ± 2	3480	2700
2	U-141A		141 ± 5	78.5 ± 1	15 ± 1	33.5 ± 1	50 mini	5270	
2	U-141B		141 ± 5	78.5 ± 1	30 ± 1	33.5 ± 1	51 mini	10500	

* This symbol indicates that the equivalent IU is also available.

E cores

See fig.	P / N	a mm	b mm	c mm	d mm	f min. mm	g mm	h mm	Ferrinox® material ($A_L nH \pm 25\%$)		Bobbin available
									B1	B2	
3	E-5521A	55.15 ± 1.05	27.5 ± 0.3	20.7 ± 0.3	18.8 ± 0.3	10.15	16.95 ± 0.25	38.1 ± 0.6	7200	6000	•
3	E-5525A	55.15 ± 1.05	27.5 ± 0.3	24.7 ± 0.3	18.8 ± 0.3	10.15	16.95 ± 0.25	38.1 ± 0.6	9100	6880	•
3	E-6527A	65.15 ± 1.35	32.5 ± 0.3	27.1 ± 0.3	22.6 ± 0.4	12.1	19.65 ± 0.35	44.95 ± 0.75	10000	7700	•
3	E-7032A	70.5 ± 1	32.95 ± 0.25	31.6 ± 0.4	22.25 ± 0.35	13	21.65 ± 0.35	48.75 ± 0.75	11500	9800	
3	E-8020A	80 ± 1.8	38.1 ± 0.4	19.8 ± 0.4	28.3 ± 0.4	19.35	19.8 ± 0.4	60.2 ± 1.3	5300	4600	

Toroids

See fig.	P / N	a mm	h mm	c mm	Ferrinox® material ($A_L nH \pm 25\%$)		
					B1	B2	
4	T-5000A	50 ± 1.5	15 ± 0.5	10 ± 0.5		6000	4550
4	T-5600A	55.4 ± 1.95	32.35 ± 0.8	18 ± 0.7		4850	3650
4	T-6300A	63 ± 2	38 ± 1.2	25 ± 0.8		6300	4300
4	T-6300B	63 ± 2	23 ± 0.6	20 ± 0.6		11500	6700
4	T-6700A	67 ± 2	15 ± 0.5	20 ± 0.6		12500	9600
4	T-7500A	75 ± 2	23 ± 0.5	20 ± 0.7		11000	7900
4	T-8000A	80 ± 2.5	40 ± 1.2	15 ± 0.5		5000	3600
4	T--100A	100 ± 3.5	55 ± 1.95	20 ± 0.8		5000	
4	T--100B	100 ± 3.5	55 ± 1.95	20 ± 0.8		5000	
4	T--124A	124.5 ± 3.5	42 ± 1.5	16 ± 1		8600	
4	T--152A	152 ± 5	68.5 ± 2	19 ± 0.5		6600	
4	T--152B	152 ± 5	68.5 ± 2	18.5 ± 0.5		6400	

Fig. 1

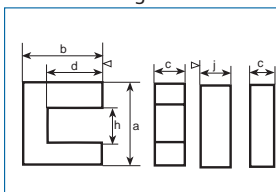


Fig. 2

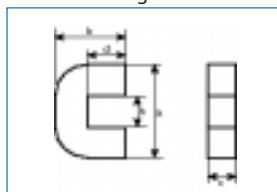


Fig. 3

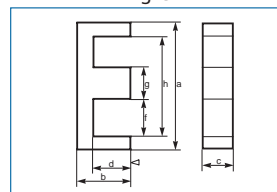
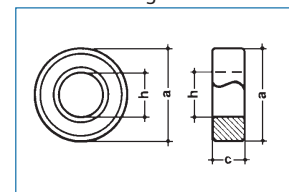


Fig. 4





Switch Mode Power Supply

Thomson-CSF Passive Components proposes a wide range of E and RM cores for your SMPS transformers and/or chokes; they are available in B1, B2 and F1 grade for your low and medium frequency applications. To satisfy your high frequency requirements, several shapes are available in F2 and F4 grade upon request.

SMPS
POWER APPLICATION

E cores

See fig.	P / N	a mm	b mm	c mm	d mm	f min mm	g mm	h mm	Ferrinox® material (A ₁ nH ± 25%)				Bobbin available
									B1	B2	F1	F2	
ETD cores													
5	ET2910A	29.8 ± 0.8	15.8 ± 0.2	9.5 ± 0.3	11 ± 0.3		9.5 ± 0.3	22.7 ± 0.7		1950	2400	1950	•
5	ET3411A	34.2 ± 0.8	17.3 ± 0.2	10.8 ± 0.3	12.1 ± 0.3		10.8 ± 0.3	26.3 ± 0.7		2250	2850	2250	•
5	ET3913A	39.1 ± 0.9	19.8 ± 0.2	12.5 ± 0.3	14.6 ± 0.4		12.5 ± 0.3	30.1 ± 0.8		2470	3200	2470	•
5	ET4415A	44 ± 1	22.3 ± 0.2	14.8 ± 0.4	16.5 ± 0.4		14.8 ± 0.4	33.3 ± 0.8		3100	4050		•
5	ET4916A	48.7 ± 1.1	24.7 ± 0.2	16.3 ± 0.4	18.1 ± 0.4		16.3 ± 0.4	37 ± 0.9		3525	4550		•
5	ET5419A	54.5 ± 1.3	27.6 ± 0.2	18.9 ± 0.4	20.2 ± 0.4		18.9 ± 0.4	41.2 ± 1.1		4400	5500		•
See fig.	P / N	a	b	c	d	f min	g	h	B1	B2	F2	F4	
EFD cores													
6	EF1505A	15 ± 0.4	7.5 ± 0.15	4.65 ± 0.15	5.5 ± 0.25		5.3 ± 0.15	11 ± 0.35		700	700	435	•
6	EF2007A	20 ± 0.55	10 ± 0.15	6.65 ± 0.15	7.7 ± 0.25		8.9 ± 0.2	15.4 ± 0.5		1150	1150	670	•
6	EF2509A	25 ± 0.65	12.5 ± 0.15	9.1 ± 0.2	9.3 ± 0.25		11.4 ± 0.2	18.7 ± 0.6		1800	1800	1100	•
6	EF3009A	30 ± 0.8	15 ± 0.15	9.1 ± 0.2	11.2 ± 0.3		14.6 ± 0.25	22.4 ± 0.75		1900	1900	1150	•
See fig.	P / N	a	b	c	d	f min	g	h	B1	B2	F1		
E cores													
7	E-1905A	19.15 ± 0.75	7.9 ± 0.25	4.8 ± 0.2	5.6 ± 0.15	4.82	4.65 ± 0.15	14.75 ± 0.3	1140	1000	1050		•
7	E-2006A	20 ± 0.4	9.95 ± 0.15	5.7 ± 0.2	7.15 ± 0.15	4.1	5.75 ± 0.15	14.4 ± 0.3	1450	1160	1400		•
7	E-2506A	25.3 ± 0.5	9.5 ± 0.25	6.35 ± 0.25	6.35 ± 0.25	6.1	6.32 ± 0.125	19.2 ± 0.38	1950	1540	1650		•
7	E-2507A	25.4 ± 0.4	12.6 ± 0.2	7.28 ± 0.22	8.9 ± 0.2	4.87	7.5 ± 0.15	17.65 ± 0.25	2200	1760	2050		•
7	E-3007B	30.1 ± 0.7	15 ± 0.2	7.05 ± 0.25	10 ± 0.3	6.15	6.95 ± 0.25	19.9 ± 0.4	2000	1600	2000		•
7	E-3109B	30.5 ± 0.6	13.4 ± 0.15	9.1 ± 0.3	9.05 ± 0.15	6.20	9.1 ± 0.3	22.2 ± 0.4	2900	2600	2600		•
7	E-3509A	34.9 ± 0.7	14.4 ± 0.25	9.15 ± 0.25	9.9 ± 0.25	8	9.2 ± 0.25	26 ± 0.5	3000	2400	2600		•
7	E-4112A	40.7 ± 0.8	16.4 ± 0.25	12.45 ± 0.25	10.5 ± 0.25	7.95	12.45 ± 0.25	29.1 ± 0.5	4700	4000	4400		•
7	E-4215A	42.15 ± 0.85	21 ± 0.2	14.95 ± 0.25	15.15 ± 0.35	8.65	11.95 ± 0.25	30.10 ± 0.6	5000	3700			•
7	E-4220A	42.15 ± 0.85	21 ± 0.2	19.5 ± 0.5	15.15 ± 0.35	8.65	11.95 ± 0.25	30.10 ± 0.6	6500	4875			•
7	E-4916A	48.85 ± 0.75	20.6 ± 0.2	15.6 ± 0.4	12.11 ± 0.2	7.95	15.6 ± 0.25	32.4 ± 0.65	7000	5600			•
See fig.	P / N	a	b	c	d	j	g	h	B1	B2			
EI cores													
7	EI2206A	22 ± 0.45	15 ± 0.2	5.75 ± 0.25	11 ± 0.25	4 ± 0.2	5.75 ± 0.25	16.3 ± 0.35	1760	1400			
7	EI2506C	25.4 ± 0.5	16 ± 0.26	6.35 ± 0.25	12.83 ± 0.25	3.18 ± 0.2	6.35 ± 0.15	19.4 ± 0.4	1900	1450			
7	EI2811A	28 ± 0.55	17 ± 0.2	10.75 ± 0.2	12.5 ± 0.3	3.5 ± 0.2	7.25 ± 0.25	18.85 ± 0.25	3960	3200			
7	EI3011B	30.25 ± 0.6	21.3 ± 0.2	10.65 ± 0.35	16.3 ± 0.3	5.5 ± 0.2	10.65 ± 0.25	20.35 ± 0.35	4230	3600			
7	EI3313A	33 ± 0.65	23.3 ± 0.3	12.7 ± 0.3	19.05 ± 0.4	5 ± 0.2	9.55 ± 0.2	23.5 ± 0.58	4200	3190			
7	EI3510B	34.9 ± 0.7	23.8 ± 0.25	9.52 ± 0.4	19.05 ± 0.4	4.75 ± 0.2	9.52 ± 0.2	25.43 ± 0.5	3150	2500			
7	EI3512C	35.15 ± 0.65	23.45 ± 0.35	11.7 ± 0.3	18.3 ± 0.3	5.5 ± 0.2	10 ± 0.3	24.6 mini	3400				
7	EI4012D	40 ± 0.5	27.25 ± 0.25	11.65 ± 0.35	20.25 ± 0.25	7.5 ± 0.3	11.65 ± 0.35	29 ± 0.5	5000	3600			
7	EI4215B	42.8 ± 0.85	21.1 ± 0.2	15.47 ± 0.25	15.11 ± 0.35	5.97 ± 0.2	11.9 ± 0.25	30.97 ± 0.6	7100	5200			
See fig.	P / N	a	b	c	d	j	g	h	B1	B2			
ER cores													
5	ER2811A	28.55 ± 0.55	16.9 ± 0.25	11.4 ± 0.25	12.53 ± 0.28		9.9 ± 0.25	21.6 ± 0.4	2700	1650			
5	ER3411A	34.2 ± 0.8	13 ± 0.2	10.8 ± 0.3	7.8 ± 0.3		10.8 ± 0.3	26.3 ± 0.7	3200	2900			
5	ER3511A	35 ± 0.9	20.3 ± 0.2	11.3 ± 0.4	14.8 ± 0.4		11.3 ± 0.35	26.4 ± 0.9	3900	2600			
5	ER3913D	39.1 ± 0.9	22.2 ± 0.2	12.5 ± 0.3	17 ± 0.35		12.5 ± 0.3	30.1 ± 0.8	3000	2500			
5	ER4013A	40 ± 0.9	22.4 ± 0.2	13.3 ± 0.25	15.45 ± 0.3		13.3 ± 0.25	29.7 ± 0.7	4200	2700			
5	ER4215A	42 ± 0.6	21.6 ± 0.2	14.7 ± 0.3	15.9 ± 0.3		14.7 ± 0.3	31 ± 0.5	4400	3500			

RM cores

See fig.	P / N	a mm	d2 mm	d3 mm	b mm	h1 mm	h2 mm	e mm	Ferrinox® material (A ₁ nH ± 25%)			Bobbin available
									B2	F2		
8	RM0500B	12.05 ± 0.25	10.4 ± 0.2	4.8 ± 0.1	14.3 ± 0.3	10.4 ± 0.1	6.5 ± 0.2	6.8 max	1600	1600		•
8	RM0600B	14.4 ± 0.3	12.65 ± 0.25	6.3 ± 0.1	17.3 ± 0.3	12.4 ± 0.1	8.2 ± 0.2	8.2 max	2000	2000		•
8	RM0800B	19.25 ± 0.45	17.3 ± 0.3	8.4 ± 0.15	22.75 ± 0.45	16.3 ± 0.2	11.2 ± 0.4	15.7 max	3100	3100		•
8	RM1000B	24.15 ± 0.55	21.65 ± 0.45	10.7 ± 0.2	27.85 ± 0.65	18.6 ± 0.1	12.7 ± 0.3	13.5 max	3800	3800		•
8	RM1400B	34.1 ± 0.6	29.6 ± 0.6	14.7 ± 0.3	41.5 ± 0.7	28.9 ± 0.1	21.1 ± 0.3	19 max	5200	5200		•

Fig. 5

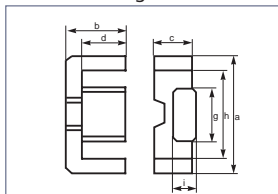


Fig. 6

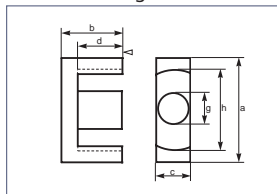


Fig. 7

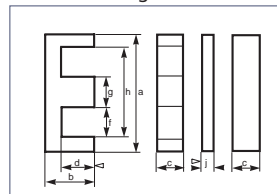
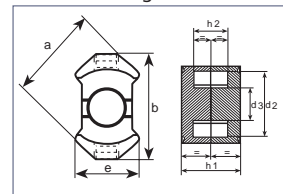


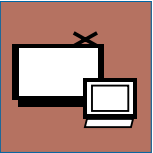
Fig. 8





Consumer TV & monitors

For your TV and monitor flyback transformers, Thomson-CSF Passive Components provides with a consistent series of UR cores for a wide range of tube sizes. With B1, B3 and B5 grades optimized for operating at 100°C, we can cover your requirements from TV-sets up to high definition monitors. Concerning the associated SMT transformers, Thomson-CSF proposes 3 types of E cores in B1, B2, B3 and F1 material grades with airgaps according to your specifications.



POWER APPLICATION

UR cores are available in Ferrinox® Materials B1, B3 and B5

See fig.	P / N	a mm	b mm	c mm	d mm	g mm	h mm	i mm	Effective core parameters		
									le mm	Ae mm ²	c nH
9	UR2810A	28 ± 0.6	15.75 ± 0.25	10 ± 0.3	11 ± 0.3	10 ± 0.3	13 ± 0.3	5 ± 0.1	85	50	0.74
10	UR2814A	28.8 maxi	20.25 ± 0.25	13.5 ± 0.3	13.25 ± 0.25	11.2 ± 0.3	9 ± 0.5	7.5 ± 0.3	97	98	1.27
10	UR2820A	28.45 ± 0.6	16.2 ± 0.2	19.6 ± 0.4	11 ± 0.4	12.5 ± 0.3	10.6 ± 0.4	5.35 ± 0.15	87	109	1.57
10	UR3012C	30 ± 0.8	21.7 ± 0.2	12 ± 0.4	15.6 mini	10 ± 0.3	15 ± 0.7	5 ± 0.2	113	68	0.75
10	UR3012D	30 ± 0.8	25.9 ± 0.2	12 ± 0.4	20.2 ± 0.45	10 ± 0.3	15 ± 0.7	5 ± 0.2	130	68	0.65
9	UR3110B	31.5 nomi	22.5 ± 0.3	10 ± 0.3	14 ± 0.25	10 ± 0.3	13.5 ± 0.5	8 nomi	109	78	0.90
9	UR3110D	31.5 ± 0.8	20.2 ± 0.25	10 ± 0.3	11.7 ± 0.25	10 ± 0.3	13.5 ± 0.5	8 nomi	101	81	1.01
10	UR3513A	35.4 ± 1	27.5 ± 0.3	13.1 ± 0.4	17.5 ± 0.3	13 ± 0.3	12 mini	10 ± 0.3	127	129	1.30
10	UR3513B	35.15 ± 1	30.8 ± 0.3	12.8 ± 0.3	20.5 ± 0.5	12.7 ± 0.3	13.05 mini	9.3 ± 0.3	141	121	1.11
10	UR3513D	35.15 ± 1	34.3 ± 0.5	12.8 ± 0.3	24 ± 0.5	12.7 ± 0.3	13.05 mini	9.3 ± 0.3	156	124	1.00
10	UR3713A	37.2 ± 1	29.4 ± 0.3	13.1 ± 0.4	18.9 ± 0.3	13 ± 0.3	13.2 mini	10.5 ± 0.2	136	133	1.23
10	UR3718B	36.9 ± 0.8	25.5 ± 0.4	18 ± 0.4	16.8 mini	14.7 ± 0.3	14.9 ± 1	7.3 ± 0.2	127	149	1.47
10	UR3718C	36.9 ± 0.8	28.8 ± 0.2	18 ± 0.4	20.3 ± 0.4	14.7 ± 0.3	14.9 ± 1	7.3 ± 0.2	140	149	1.33
10	UR3814A	37.5 ± 0.8	31.8 ± 0.3	14.1 ± 0.3	21.3 ± 0.4	14 ± 0.3	13 ± 0.5	10.5 ± 0.3	145	145	1.26
10	UR3915A	38.7 ± 1	35.2 ± 0.5	15.1 ± 0.4	24.8 ± 0.5	15 ± 0.4	15 ± 1	9.1 ± 0.3	162	147	1.15
10	UR4014A	40 ± 0.8	30.2 ± 0.3	14.1 ± 0.3	18.4 ± 0.4	14 ± 0.3	14.5 ± 0.4	11.5 ± 0.3	140	156	1.43
10	UR4022A	40.1 maxi	31.9 ± 0.2	22 ± 0.5	23.9 ± 0.4	15.05 ± 0.25	15.6 ± 1	8 ± 0.2	158	177	1.40
10	UR4115A	40.8 ± 0.8	33.7 ± 0.3	14.6 ± 0.4	21.8 ± 0.4	14.5 ± 0.3	13.8 mini	12 ± 0.25	154	165	1.35
10	UR4215A	42.2 ± 0.85	36.3 ± 0.3	15.1 ± 0.3	24 mini	15 ± 0.3	14.5 mini	12 ± 0.25	168	178	1.35
10	UR4216B	43.2 maxi	34 ± 0.2	15.9 ± 0.4	24 ± 0.4	15.8 ± 0.25	16.35 ± 0.65	9.6 ± 0.3	163	166	1.30
10	UR4618A	46 ± 1	38.8 ± 0.3	17.9 ± 0.4	25.8 ± 0.3	17.8 ± 0.3	14.65 mini	13 ± 0.3	177	238	1.69
10	UR4916A	48.5 ± 1	39 ± 0.3	16.1 ± 0.4	25.9 ± 0.5	16 ± 0.3	18.9 mini	13 ± 0.25	184	199	1.35
10	UR5536A	54.9 ± 1.1	37.5 ± 0.25	36 ± 0.7	25.5 ± 0.4	23.5 ± 0.45	20 ± 0.4	12 ± 0.25	189	418	2.80

UR cores with grooves are available, contact your local representative for detailed specifications.

E cores

See fig.	P / N	a mm	b mm	c mm	d mm	g mm	h mm	Ferrinox® material (A _l nH ± 25%)				Bobbin available
								B1	B2	B3	F1	
ETD cores												
5	ET2910A	29.8 ± 0.8	15.8 ± 0.2	9.5 ± 0.3	11 ± 0.3	9.5 ± 0.3	22.7 ± 0.7	2350	1950	1950	2400	•
5	ET3411A	34.2 ± 0.8	17.3 ± 0.2	10.8 ± 0.3	12.1 ± 0.3	10.8 ± 0.3	26.3 ± 0.7	2850	2250	2250	2850	•
5	ET3913A	39.1 ± 0.9	19.8 ± 0.2	12.5 ± 0.3	14.6 ± 0.4	12.5 ± 0.3	30.1 ± 0.8	3150	2470	2470	3200	•
5	ET4415A	44 ± 1	22.3 ± 0.2	14.8 ± 0.4	16.5 ± 0.4	14.8 ± 0.4	33.3 ± 0.8	3900	3100	3100		•
5	ET4916A	48.7 ± 1.1	24.7 ± 0.2	16.3 ± 0.4	18.1 ± 0.4	16.3 ± 0.4	37 ± 0.9	4500	3525	3525		•
5	ET5419A	54.5 ± 1.3	27.6 ± 0.2	18.9 ± 0.4	20.2 ± 0.4	18.9 ± 0.4	41.2 ± 1.1	5900	4400	4400		
ER cores												
5	ER2811A	28.55 ± 0.55	16.9 ± 0.25	11.4 ± 0.25	12.53 ± 0.28	9.9 ± 0.25	21.6 ± 0.4	2700		1650	1950	
5	ER3411A	34.2 ± 0.8	13 ± 0.2	10.8 ± 0.3	7.8 ± 0.3	10.8 ± 0.3	26.3 ± 0.7	3200		2900	3400	
5	ER3511A	35 ± 0.9	20.3 ± 0.2	11.3 ± 0.4	14.8 ± 0.4	11.3 ± 0.35	26.4 ± 0.9	3900		2600	3650	
5	ER3913D	39.1 ± 0.9	22.2 ± 0.2	12.5 ± 0.3	17 ± 0.35	12.5 ± 0.3	30.1 ± 0.8	3000		2500	2950	
5	ER4013A	40 ± 0.9	22.4 ± 0.2	13.3 ± 0.25	15.45 ± 0.3	13.3 ± 0.25	29.7 ± 0.7	4200		2700	3200	
5	ER4215A	42 ± 0.6	21.6 ± 0.2	14.7 ± 0.3	15.9 ± 0.3	14.7 ± 0.3	31 ± 0.5	4400		3500	3350	
ED cores												
11	ED2912B	29.3 ± 0.8	14.6 ± 0.25	11.9 ± 0.25	11 ± 0.20	8.4 ± 0.2	22 ± 0.4		2200	2200	2750	
11	ED2912C	29.3 ± 0.8	10.2 ± 0.25	11.9 ± 0.25	6.6 ± 0.2	8.4 ± 0.2	22 ± 0.4		2900	2900	3400	
11	ED2912D	29.3 ± 0.8	12.2 ± 0.25	11.9 ± 0.25	8.6 ± 0.2	8.4 ± 0.2	22 ± 0.4		2500	2500	3100	

Fig. 9

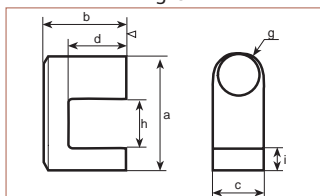


Fig. 10

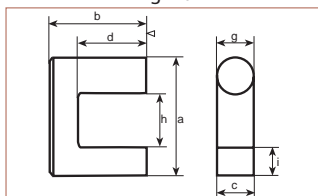
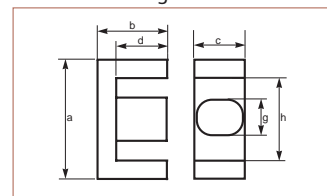


Fig. 11





Electronic ballast

Thomson-CSF Passive Components proposes a complete range of E cores and toroids for your electronic ballast applications. These are available in our standard B1 and B2 grade, but can also be supplied in B6, F1 grade designed for the electronic ballast requirements.



P O W E R
A P P L I C A T I O N

E cores

P / N	a mm	b mm	c mm	d mm	f min mm	g mm	h mm	Ferrinox® material (A _L nH ± 25%)				Bobbin available
								B1	B2	B6	F1	
E-1304A	12.8 ± 0.2	6.4 ± 0.1	3.55 ± 0.15	4.65 ± 0.15	2.6	3.55 ± 0.15	9.2 ± 0.3	840	720		860	
E-1306A	13 ± 0.45	6 ± 0.2	6.15 ± 0.2	4.65 ± 0.15	3.64	2.78 ± 0.18	10.48 ± 0.25	1040	850			
E-1605A	16 ± 0.5	7.15 ± 0.2	4.9 ± 0.2	5.1 ± 0.2	3.8	4 ± 0.15	12 ± 0.25	1150	1000		1050	
E-1605B	16 ± 0.5	12.25 ± 0.2	4.85 ± 0.2	10.25 ± 0.25	3.75	4 ± 0.2	12 ± 0.3	700	640			
E-1605C	16.1 ± 0.6	8.05 ± 0.15	4.5 ± 0.2	5.9 ± 0.2	3.3	4.55 ± 0.15	11.6 ± 0.3	1240	870			
E-1905A	19.15 ± 0.75	7.9 ± 0.25	4.8 ± 0.2	5.6 ± 0.15	4.82	4.65 ± 0.15	14.75 ± 0.3	1140	1000	1000	1050	•
E-1907A	19.15 ± 0.75	7.9 ± 0.25	6.65 ± 0.25	5.6 ± 0.15	4.82	4.65 ± 0.15	14.75 ± 0.3	1600	1300			•
E-2005B	19.5 ± 0.4	13.55 ± 0.2	5 ± 0.25	11.15 ± 0.2	4.5	4.55 ± 0.15	14 ± 0.3	920	750			
E-2006A	20 ± 0.4	9.95 ± 0.15	5.7 ± 0.2	7.15 ± 0.15	4.1	5.75 ± 0.15	14.4 ± 0.3	1450	1160		1400	•
E-2206A	22 ± 0.45	15 ± 0.2	5.75 ± 0.25	11 ± 0.25	4.98	5.75 ± 0.25	16.3 ± 0.35	1250	1050			
E-2506A	25.3 ± 0.5	9.5 ± 0.25	6.35 ± 0.25	6.35 ± 0.25	6.1	6.32 ± 0.125	19.02 ± 0.38	1950	1540	1650	1650	•
E-2506B	25.3 ± 0.5	9.9 ± 0.25	6.35 ± 0.25	6.75 ± 0.25	6.1	6.32 ± 0.125	19.02 ± 0.38	2000	1600			
E-2506C	25.4 ± 0.5	16 ± 0.25	6.35 ± 0.25	12.83 ± 0.25	6.07	6.35 ± 0.15	19.04 ± 0.4	1350	1150		1250	
E-2507A	25.4 ± 0.4	12.6 ± 0.2	7.28 ± 0.22	8.9 ± 0.2	4.87	7.5 ± 0.15	17.65 ± 0.25	2200	1760	1950	2050	•
E-2507B	25.4 ± 0.5	16 ± 0.26	6.5 ± 0.25	12.83 ± 0.25	6.07	6.35 ± 0.15	19.04 ± 0.4	1300	1100			
E-2811A	28 ± 0.55	17 ± 0.2	10.75 ± 0.2	12.5 ± 0.3	5.55	7.25 ± 0.25	18.85 ± 0.25	2700	2400			
E-3007B	30.1 ± 0.7	15 ± 0.2	7.05 ± 0.25	10 ± 0.3	6.15	6.95 ± 0.25	19.9 ± 0.4	2000	1600			
E-3011A	30 ± 0.6	13.15 ± 0.2	10.7 ± 0.3	8.15 ± 0.15	4.38	10.7 ± 0.25	20 ± 0.3	4700	3500			
E-3109B	30.5 ± 0.6	13.4 ± 0.15	9.1 ± 0.3	9.05 ± 0.15	6.2	9.1 ± 0.3	22.2 ± 0.4	2900	2600		2600	
E-3213A	31.9 ± 1	14 ± 0.4	12.7 ± 0.3	9.65 ± 0.25	6.4	8.9 ± 0.25	22.77 ± 0.77	4000	3250			•
E-3509A	34.9 ± 0.7	14.4 ± 0.25	9.15 ± 0.25	9.9 ± 0.25	8	9.2 ± 0.25	26 ± 0.5	3000	2400	2550	2600	•
E-3509B	34.9 ± 0.7	14.4 ± 0.25	9.15 ± 0.25	9.8 ± 0.25	7.9	9.2 ± 0.25	25.75 ± 0.5	3000	2500			
E-3510A	34.9 ± 0.7	14.4 ± 0.25	9.7 ± 0.2	9.9 ± 0.25	8.03	9.2 ± 0.25	26 ± 0.5	3000	2500			
E-3510B	34.9 ± 0.7	23.8 ± 0.25	9.52 ± 0.4	19.05 ± 0.4	7.61	9.52 ± 0.2	25.43 ± 0.5	2100	1750			
E-3512A	34.9 ± 0.7	14.4 ± 0.25	12 ± 0.25	9.8 ± 0.25	7.9	9.2 ± 0.25	25.75 ± 0.5	3750	3000			
E-3512B	34.9 ± 0.7	23.8 ± 0.25	12 ± 0.4	19.05 ± 0.4	7.61	9.52 ± 0.2	25.43 ± 0.5	2100				
E-4012B	40.5 ± 0.4	27.25 ± 0.25	11.65 ± 0.35	20.25 ± 0.4	7.78	11.65 ± 0.25	28 ± 0.55	3250	2550			
E-4012C	39.9 ± 0.8	17.3 ± 0.15	11.87 ± 0.2	10.20 ± 0.2	7.8	11.65 ± 0.25	28.05 ± 0.55	4900	3750			
E-4112A	40.7 ± 0.8	16.4 ± 0.25	12.45 ± 0.25	10.5 ± 0.25	7.95	12.45 ± 0.25	29.1 ± 0.5	4700	4000	4250	4400	
E-4215A	42.15 ± 0.85	21 ± 0.2	14.95 ± 0.25	15.15 ± 0.35	8.65	11.95 ± 0.25	30.1 ± 0.6	5000	3700	4200		•
E-4215H	42.3 ± 0.85	21.4 ± 0.2	15 ± 0.25	15.4 ± 0.35	8.73	12 ± 0.25	30.3 ± 0.6	4875	3700			
E-4220A	42.15 ± 0.85	21 ± 0.2	19.5 ± 0.5	15.15 ± 0.35	8.65	11.95 ± 0.25	30.1 ± 0.6	6500	4875	5500		•
E-4220H	42.3 ± 0.85	21.4 ± 0.2	19.6 ± 0.4	15.4 ± 0.35	8.73	12 ± 0.25	30.3 ± 0.6	6475	4850			

Toroids

P / N	a mm	h mm	c mm	Ferrinox® material (A _L nH for coated toroids).	
				B1	B2
TR1270A	12.7 ± 0.25	7.14 ± 0.18	4.7 ± 0.13		> 650
TR2000B	20 ± 0.6	10 ± 0.3	7 ± 0.25		> 1200
TR2000D	20 ± 0.6	10.5 ± 0.35	15 ± 0.55		> 2310
TR2210A	22.1 ± 0.6	13.72 ± 0.4	12.7 ± 0.4		> 1500
TR2500A	25 ± 0.75	15 ± 0.45	10 ± 0.35		> 1300
TR2500B	25 ± 0.75	15 ± 0.45	15 ± 0.55		> 1900
TR2800B	27.6 ± 0.6	17.6 ± 0.4	15.4 ± 0.3		> 1550
TR2800C	27.6 ± 0.6	17.6 ± 0.4	7 ± 0.2		> 750
TR3150C	31.5 ± 0.95	19 ± 0.6	20 ± 0.7	> 3200	> 1350
TR3600A	36 ± 0.8	23 ± 0.5	15 ± 0.5	> 2200	> 1650
TR4000A	40 ± 1.2	24 ± 0.75	16 ± 0.6	> 2650	> 2000

All mechanical dimensions are given for non-coated toroids.

Coating :
 Ⓞ Polyamide
 Ⓞ Thickness : < 0.4 mm (to be added on mechanical dimensions).
 Ⓞ Breakdown voltage > 2000 VDC

Fig. 12

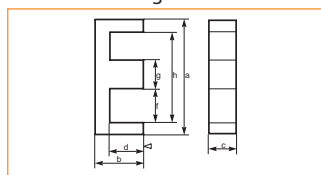
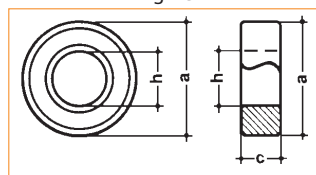


Fig. 13



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C-311 blue cross chambers
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9 Deakin Street
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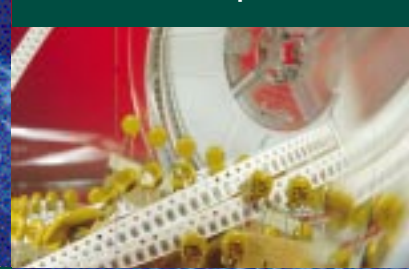
Power capacitors



Film capacitors



Ceramic capacitors



Non linear resistors



 **THOMSON-CSF**
PASSIVE COMPONENTS