

DATA SHEET

ER11/2.5/6

Planar ER cores and accessories

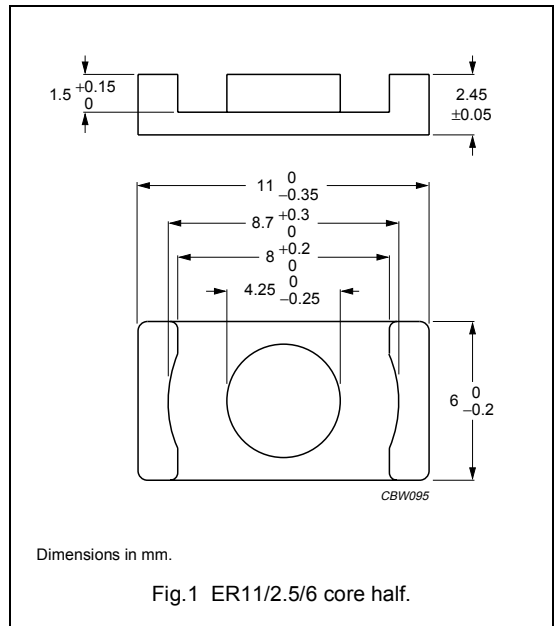
Supersedes data of September 2004

2014 Jul. 16

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	1.23	mm ⁻¹
V_e	effective volume	174	mm ³
l_e	effective length	14.7	mm
A_e	effective area	11.9	mm ²
A_{min}	minimum area	10.3	mm ²
m	mass of core half	≈ 0.5	g



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 15 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C92 <small>des</small>	1050 ±25%	≈ 1030	≈ 0	ER11/2.5/6-3C92-S
3C93 <small>des</small>	1200 ±25%	≈ 1170	≈ 0	ER11/2.5/6-3C93-S
3C94	100 ±3%	≈ 98	≈ 170	ER11/2.5/6-3C94-A100-S
	160 ±5%	≈ 157	≈ 100	ER11/2.5/6-3C94-A160-S
	250 ±8%	≈ 246	≈ 60	ER11/2.5/6-3C94-A250-S
	1400 ±25%	≈ 1370	≈ 0	ER11/2.5/6-3C94-S
3C95 <small>des</small>	1620 ±25%	≈ 1600	≈ 0	ER11/2.5/6-3C95-S
3C96 <small>des</small>	1250 ±25%	≈ 1220	≈ 0	ER11/2.5/6-3C96-S
3F3	100 ±3%	≈ 98	≈ 170	ER11/2.5/6-3F3-A100-S
	160 ±5%	≈ 157	≈ 100	ER11/2.5/6-3F3-A160-S
	250 ±8%	≈ 246	≈ 60	ER11/2.5/6-3F3-A250-S
	1200 ±25%	≈ 1170	≈ 0	ER11/2.5/6-3F3-S
3F35 <small>des</small>	1000 ±25%	≈ 980	≈ 0	ER11/2.5/6-3F35-S
3F4 <small>des</small>	63 ±3%	≈ 62	≈ 280	ER11/2.5/6-3F4-A63-S
	100 ±5%	≈ 98	≈ 160	ER11/2.5/6-3F4-A100-S
	160 ±8%	≈ 157	≈ 85	ER11/2.5/6-3F4-A160-S
	725 ±25%	≈ 710	≈ 0	ER11/2.5/6-3F4-S
3F45 <small>prot</small>	725 ±25%	≈ 710	≈ 0	ER11/2.5/6-3F45-S

Planar ER cores and accessories

ER11/2.5/6

Core sets of high permeability gradesClamping force for A_L measurements, 15 ± 5 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3E5	5000 +40/-30%	≈ 4920	≈ 0	ER11/2.5/6-3E5-S
3E6	6700 +40/-30%	≈ 6590	≈ 0	ER11/2.5/6-3E6-S

Properties of core sets under power conditions

GRADE	B (mT) at	CORE LOSS (W) at				
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 100 kHz; $\hat{B} = 100$ mT; T = 100 °C	f = 100 kHz; $\hat{B} = 200$ mT; T = 25 °C	f = 100 kHz; $\hat{B} = 200$ mT; T = 100 °C	f = 400 kHz; $\hat{B} = 50$ mT; T = 100 °C	f = 500 kHz; $\hat{B} = 50$ mT; T = 100 °C
3C92	≥ 370	≤ 0.018	–	≤ 0.1	–	–
3C93	≥ 320	$\leq 0.018^{(1)}$	–	$\leq 0.1^{(1)}$	–	–
3C94	≥ 320	≤ 0.018	–	≤ 0.1	–	–
3C95	≥ 320	–	≤ 0.11	≤ 0.1	–	–
3C96	≥ 340	≤ 0.014	–	≤ 0.08	≤ 0.033	≤ 0.065
3F3	≥ 300	≤ 0.025	–	–	≤ 0.04	–
3F35	≥ 300	–	–	–	≤ 0.016	≤ 0.023
3F4	≥ 250	–	–	–	–	–

1. Measured at 140 °C.

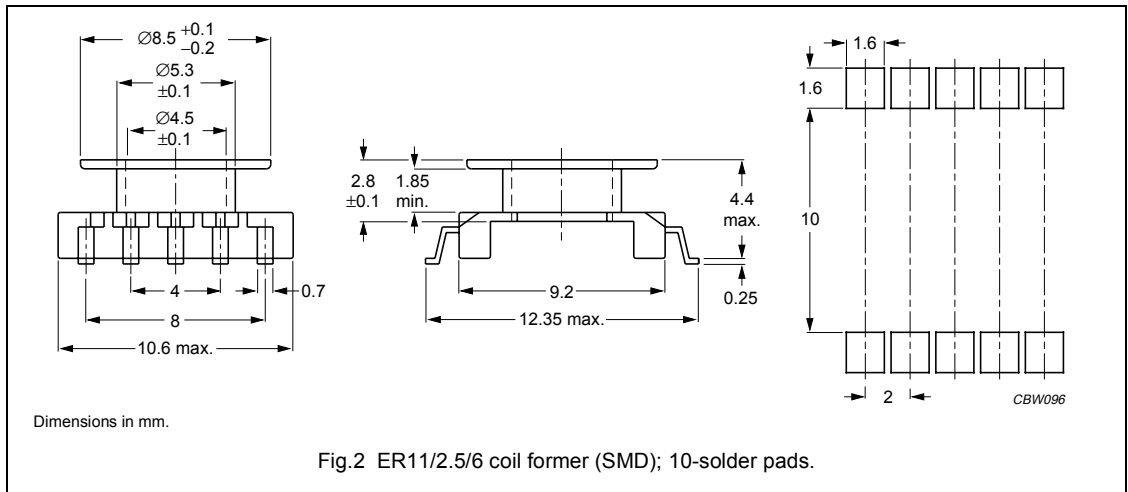
Properties of core sets under power conditions (continued)

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 500 kHz; $\hat{B} = 100$ mT; T = 100 °C	f = 1 MHz; $\hat{B} = 30$ mT; T = 100 °C	f = 1 MHz; $\hat{B} = 50$ mT; T = 100 °C	f = 3 MHz; $\hat{B} = 10$ mT; T = 100 °C
3F35	≥ 300	≤ 0.18	–	–	–
3F4	≥ 250	–	≤ 0.052	–	≤ 0.084
3F45	≥ 250	–	≤ 0.04	≤ 0.15	≤ 0.07

COIL FORMERS

General data

PARAMETER	SPECIFICATION
Coil former material	liquid crystal polymer (LCP), glass reinforced, flame retardant in accordance with "UL 94V-0"; UL file number E54705(M)
Pin material	copper-tin alloy (CuSn), tin (Sn) plated
Maximum operating temperature	155 °C, "IEC 60085", class F
Resistance to soldering heat	"IEC 60068-2-20", Part 2, Test Tb, method 1B: 350 °C, 3.5 s
Solderability	"IEC 60068-2-20", Part 2, Test Ta, method 1: 235 °C, 2 s

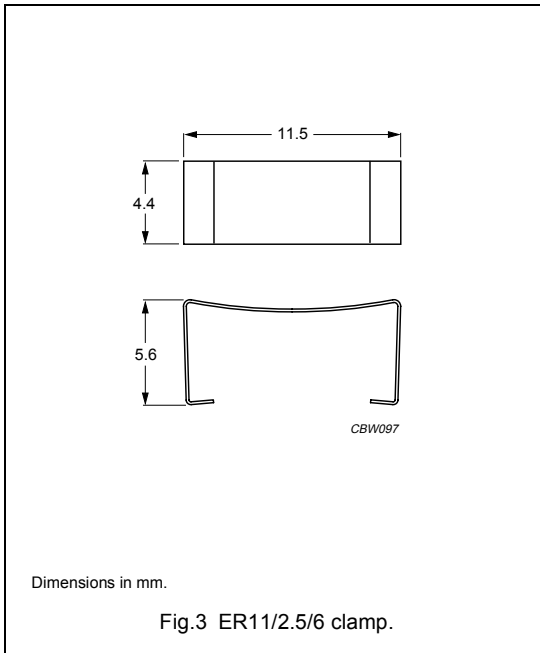


Winding data and area product for ER11/2.5/6 coil former (SMD)

NUMBER OF SECTIONS	WINDING AREA (mm ²)	MINIMUM WINDING WIDTH (mm)	AVERAGE LENGTH OF TURN (mm)	AREA PRODUCT Ae x Aw (mm ⁴)	TYPE NUMBER
1	2.8	1.85	21.6	33.3	CPVS-ER11-1S-12P
1	2.8	1.85	21.6	33.3	CPVS-ER11-1S-10P

MOUNTING PARTS**General data and ordering information**

ITEM	REMARKS	FIGURE	TYPE NUMBER
Clamp	stainless steel (CrNi); clamping force ≈ 25 N	3	CLM-ER11






DATA SHEET STATUS DEFINITIONS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
Preliminary specification	Development	This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
Prototype		These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change.
Design-in		These products are recommended for new designs.
Preferred		These products are recommended for use in current designs and are available via our sales channels.
Support		These products are not recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability.