

DATA SHEET

E5.3/2.7/2

E cores and accessories

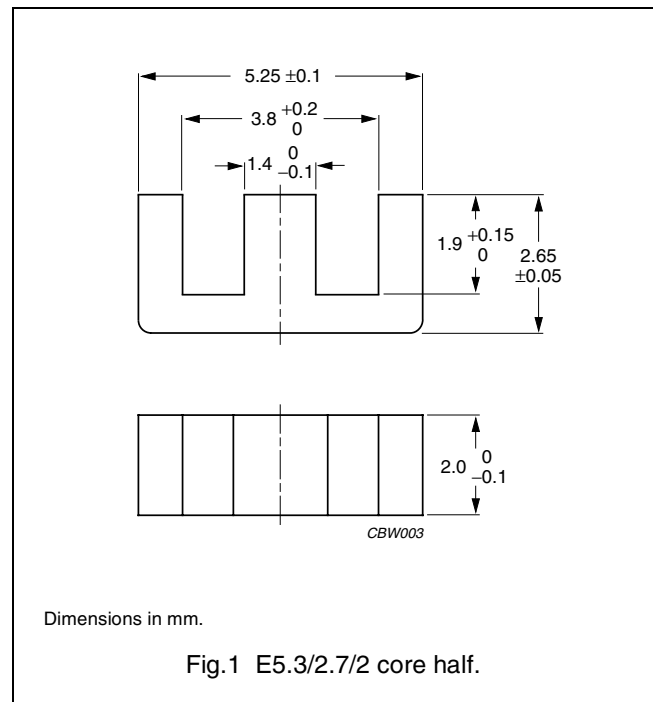
Supersedes data of September 2004

2008 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	4.70	mm ⁻¹
V_e	effective volume	33.3	mm ³
l_e	effective length	12.5	mm
A_e	effective area	2.66	mm ²
A_{min}	minimum area	2.63	mm ²
m	mass of core half	≈ 0.08	g



Core halves for general purpose transformers and power applications

Clamping force for A_L measurements, 5 ± 2 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μm)	TYPE NUMBER
3C96 <small>des</small>	$275 \pm 25\%$	≈ 1030	≈ 0	E5.3/2.7/2-3C96
3F3	$265 \pm 25\%$	≈ 990	≈ 0	E5.3/2.7/2-3F3
3F35 <small>des</small>	$225 \pm 25\%$	≈ 840	≈ 0	E5.3/2.7/2-3F35
3F4 <small>des</small>	$165 \pm 25\%$	≈ 615	≈ 0	E5.3/2.7/2-3F4

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 = 100 °C	f = 400 kHz; $\hat{B} = 50$ mT; T = 100 °C
3C96	≥340	≤ 0.0024	≤ 0.016	≤ 0.007
3F3	≥300	≤ 0.005	–	≤ 0.008
3F35	≥300	–	–	≤ 0.003
3F4	≥250	–	–	–

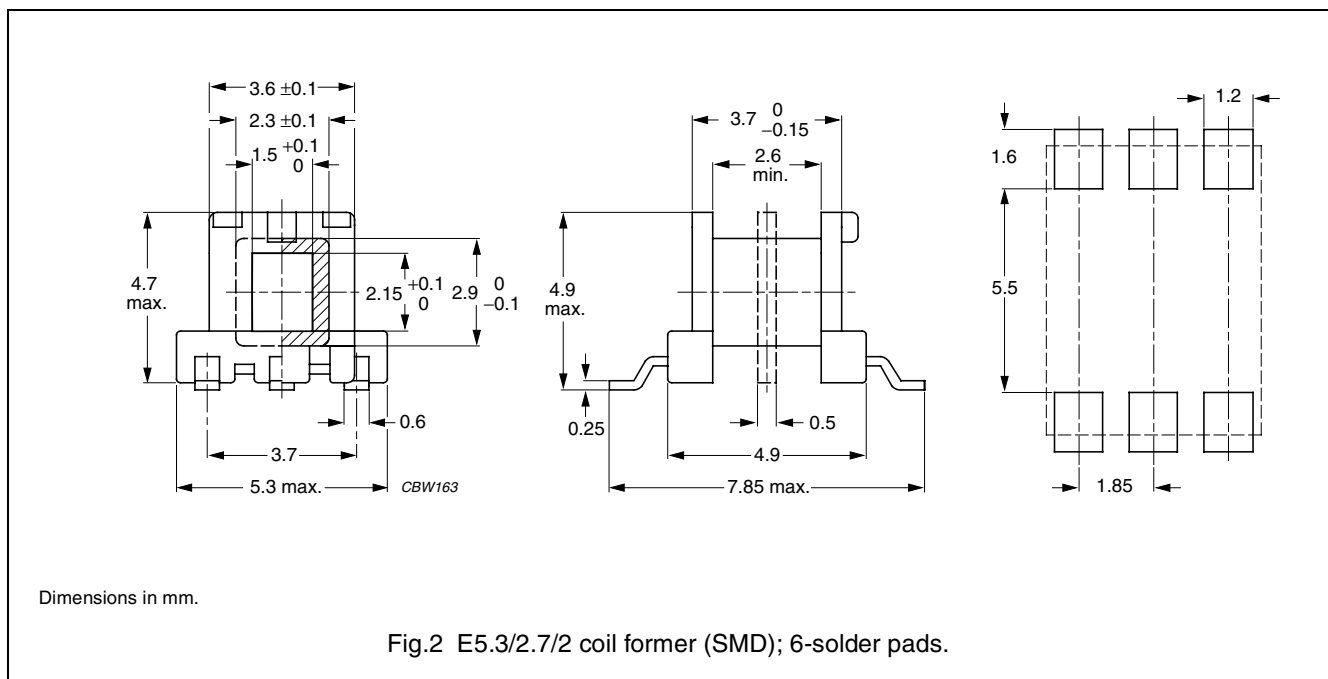
Properties of core sets under power conditions (continued)

GRADE	B (mT) at	CORE LOSS (W) at			
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 500 kHz; \hat{B} = 50 mT; T = 100 °C	f = 500 kHz; \hat{B} = 100 mT; T = 100 °C	f = 1 MHz; \hat{B} = 30 mT; T = 100 °C	f = 3 MHz; \hat{B} = 10 mT; T = 100 °C
3C96	≥340	≤ 0.012	–	–	–
3F3	≥300	–	–	–	–
3F35	≥300	≤ 0.004	≤ 0.035	–	–
3F4	≥250	–	–	≤ 0.01	≤ 0.015

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



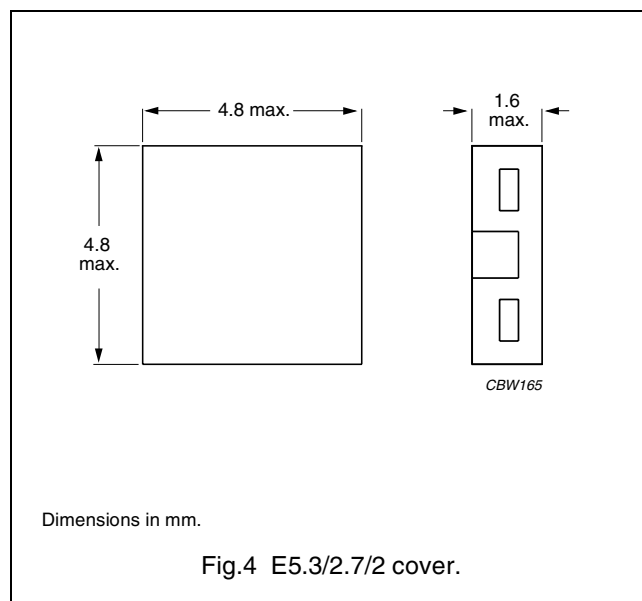
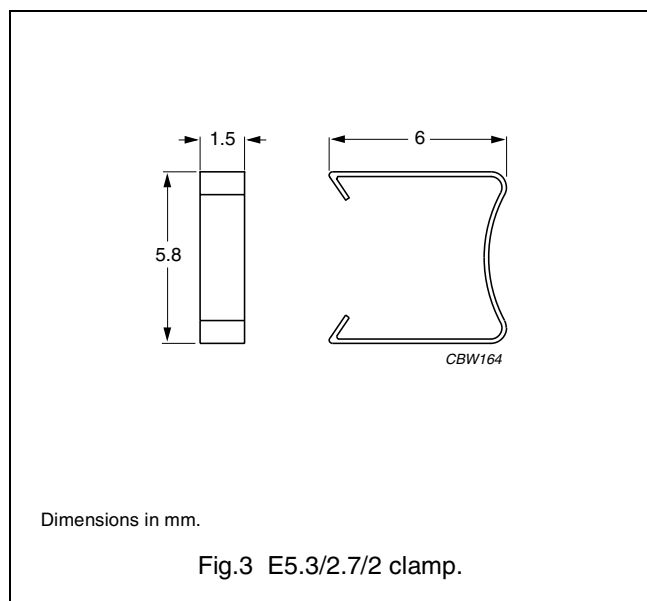
Winding data and area product for E5.3/2.7/2 coil former (SMD) with 6 solder pads

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	1.5	2.6	12.6	3.99	CPHS-E5.3/2-1S-4P-Z
1	1.5	2.6	12.6	3.99	CPHS-E5.3/2-1S-6P-Z
2	2 × 0.6	2 × 1.0	12.6	2 x 1.60	CPHS-E5.3/2-2S-6P-Z

MOUNTING PARTS

General data for mounting parts

ITEM	REMARKS	FIGURE	TYPE NUMBER
Clamp	stainless steel (CrNi); clamping force ≈ 5 N	3	CLM-E5.3/2
Cover	liquid crystal polymer (LCP)	4	COV-E5.3/2



BLISTER TAPE AND REEL DIMENSIONS

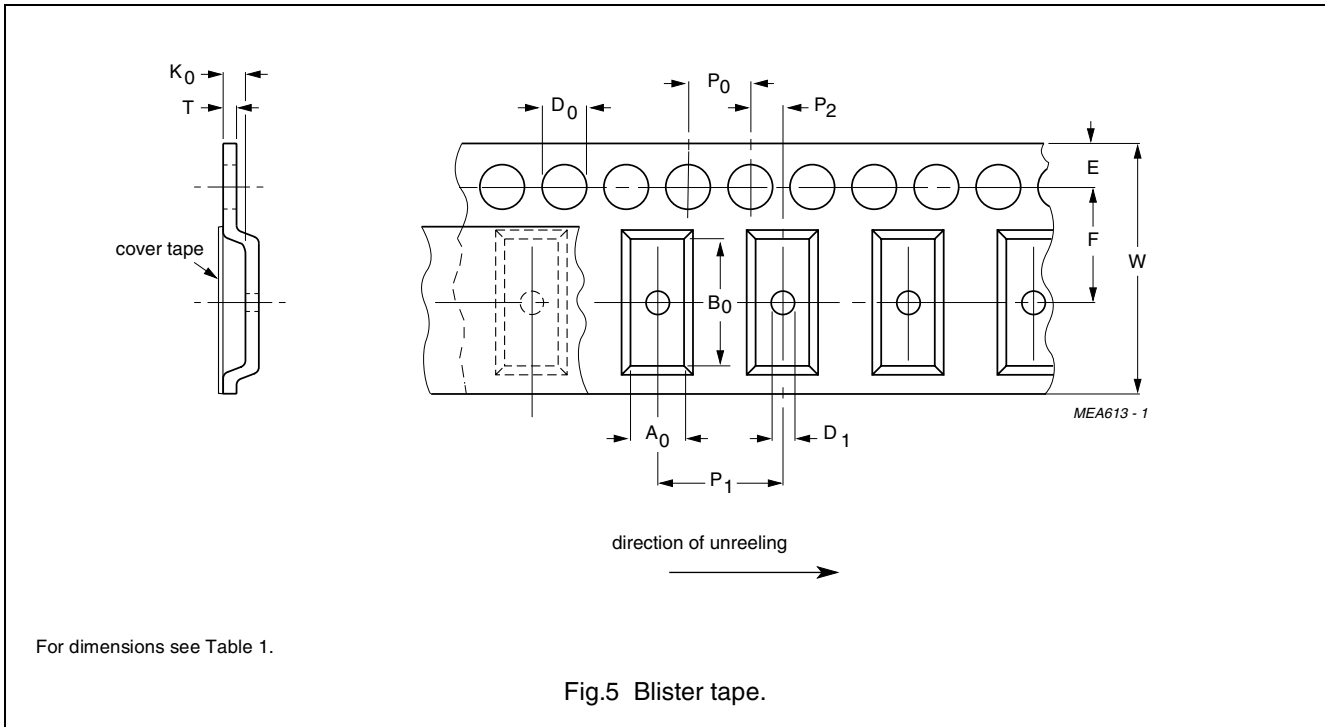


Table 1 Physical dimensions of blister tape; see Fig.5

SIZE	DIMENSIONS (mm)
A ₀	3.0 ±0.1
B ₀	5.7 ±0.1
K ₀	2.2 ±0.1
T	0.25 ±0.05
W	12.0 ±0.3
E	1.75 ±0.1
F	5.5 ±0.05
D ₀	1.5 +0.1
D ₁	≥1.5
P ₀	4.0 ±0.1
P ₁	8.0 ±0.1
P ₂	2.0 ±0.1

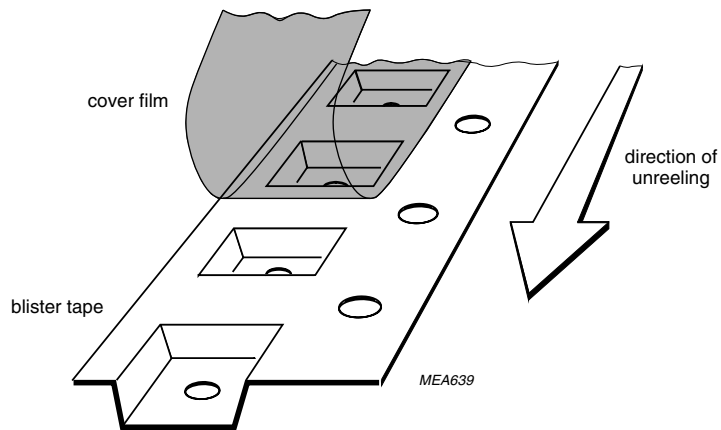
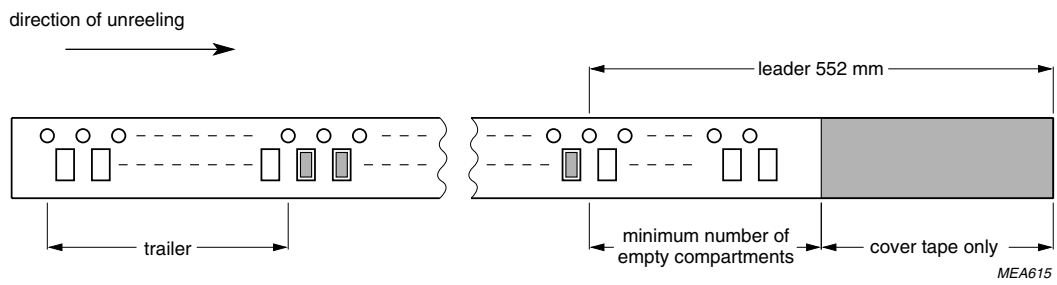


Fig.6 Construction of blister tape.



Leader: length of leader tape is 552 mm minimum covered with cover tape.

Trailer: 160 mm minimum (secured with tape).

Storage temperature range for tape: -25 to +45 °C.

Fig.7 Leader/trailer tape.

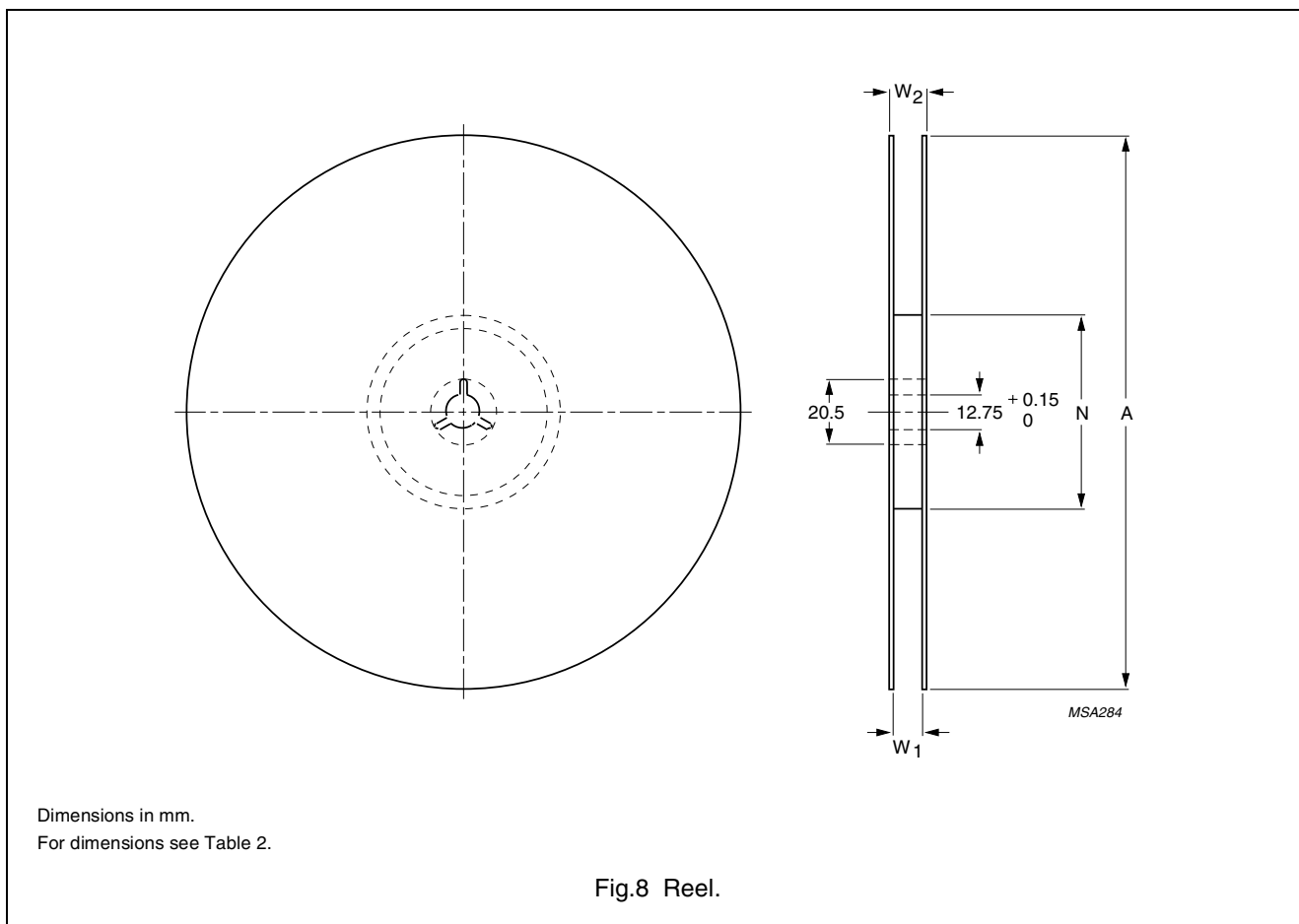


Table 2 Reel dimensions; see Fig.8

SIZE	DIMENSIONS (mm)			
	A	N	W ₁	W ₂
12	330	100 ±5	12.4	≤16.4




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
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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.