

DATA SHEET

ER23/3.6/13

Planar ER cores and accessories

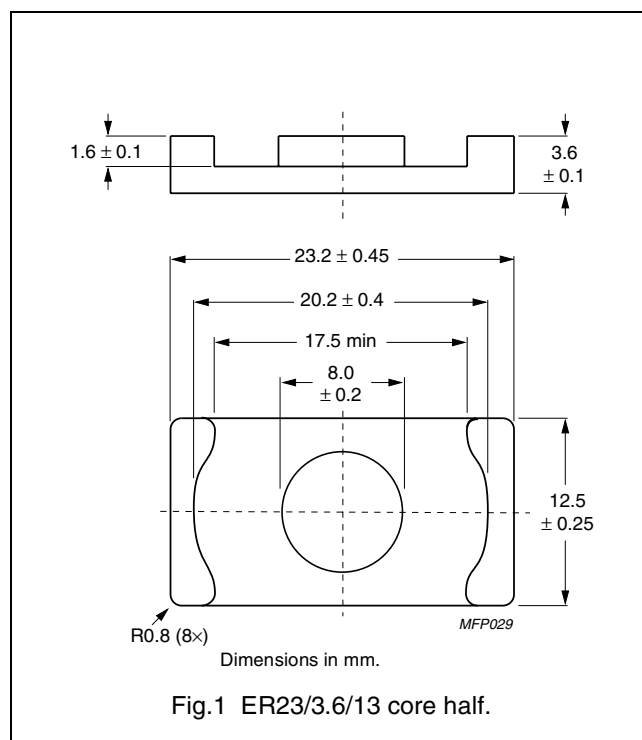
Supersedes data of September 2004

2008 Sep 01

CORE SETS

Effective core parameters

SYMBOL	PARAMETER	VALUE	UNIT
$\Sigma(l/A)$	core factor (C1)	0.530	mm ⁻¹
V_e	effective volume	1340	mm ³
l_e	effective length	26.6	mm
A_e	effective area	50.2	mm ²
A_{min}	minimum area	50.0	mm ²
m	mass of core half	≈ 3.2	g



Core sets for general purpose transformers and power applications

Clamping force for A_L measurements, 20 ± 10 N.

GRADE	A_L (nH)	μ_e	AIR GAP (μ m)	TYPE NUMBER
3C92	250 ± 3 %	≈ 105	≈ 260	ER23/3.6/13-3C92-A250-S
	400 ± 5 %	≈ 169	≈ 150	ER23/3.6/13-3C92-A400-S
	630 ± 8 %	≈ 266	≈ 85	ER23/3.6/13-3C92-A630-S
	2800 ± 25 %	≈ 1180	≈ 0	ER23/3.6/13-3C92-S
3C93	3200 ± 25 %	≈ 1350	≈ 0	ER23/3.6/13-3C93-S
3C95	4460 ± 25 %	≈ 1880	≈ 0	ER23/3.6/13-3C95-S
3C96	250 ± 3 %	≈ 105	≈ 270	ER23/3.6/13-3C96-A250-S
	400 ± 5 %	≈ 169	≈ 155	ER23/3.6/13-3C96-A400-S
	630 ± 8 %	≈ 266	≈ 90	ER23/3.6/13-3C96-A630-S
	3400 ± 25 %	≈ 1180	≈ 0	ER23/3.6/13-3C96-S
3F3	3400 ± 25 %	≈ 1180	≈ 0	ER23/3.6/13-3F3-S
3F35	250 ± 3 %	≈ 105	≈ 260	ER23/3.6/13-3F35-A250-S
	400 ± 5 %	≈ 169	≈ 150	ER23/3.6/13-3F35-A400-S
	630 ± 8 %	≈ 266	≈ 85	ER23/3.6/13-3F35-A630-S
	2600 ± 25 %	≈ 1180	≈ 0	ER23/3.6/13-3F35-S
3F4	1850 ± 25 %	≈ 840	≈ 0	ER23/3.6/13-3F4-S
3F45	1850 ± 25 %	≈ 840	≈ 0	ER23/3.6/13-3F45-S

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Properties of core sets under power condition

GRADE	B (mT) at	CORE LOSS (W) at					
	H = 250 A/m; f = 25 kHz; T = 100 °C	f = 100 kHz; B̂ = 100 mT; T = 100 °C	f = 100 kHz; B̂ = 200 mT; T = 25 °C	f = 100 kHz; B̂ = 200 mT; T = 100 °C	f = 400 kHz; B̂ = 50 mT; T = 100 °C	f = 500 kHz; B̂ = 50 mT; T = 100 °C	f = 500 kHz; B̂ = 100 mT; T = 100 °C
3C92	≥ 370	≤ 0.11	–	≤ 0.70	–	–	–
3C93	≥ 320	≤ 0.11 ⁽¹⁾	–	≤ 0.70 ⁽¹⁾	–	–	–
3C95	≥ 320	–	≤ 0.87	≤ 0.82	–	–	–
3C96	≥ 340	≤ 0.070	–	≤ 0.52	–	≤ 0.44	–
3F3	≥ 300	≤ 0.15	–	–	≤ 0.31	–	–
3F35	≥ 300	–	–	–	–	≤ 0.16	≤ 1.2

1. Measured at 140 °C.

Properties of core sets under power condition (continued)

GRADE	B (mT) at	CORE LOSS (W) at		
	H = 1200 A/m; f = 25 kHz; T = 100 °C	f = 1 MHz; B̂ = 30 mT; T = 100 °C	f = 1 MHz; B̂ = 50 mT; T = 100 °C	f = 3 MHz; B̂ = 10 mT; T = 100 °C
3F4	≥ 250	≤ 0.4	–	≤ 0.64
3F45	≥ 250	≤ 0.31	≤ 1.15	≤ 0.53

MOUNTING INFORMATION

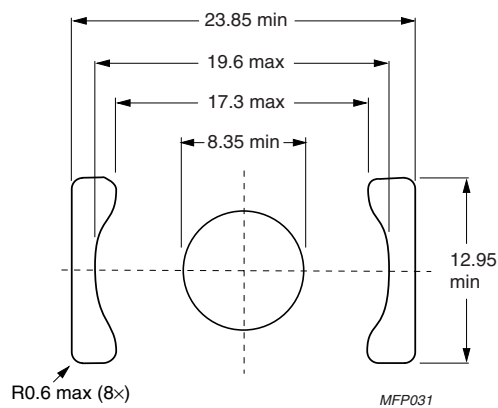


Fig.2 Recommended PCB cut-out for ER23/3.6/13 cores.

Winding data for ER23/3.6/13 planar core

WINDING AREA (mm ²)	AVERAGE TRACK LENGTH (mm)	FOOTPRINT AREA (mm ²)
19.5	44.3	375

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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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