

# DATA SHEET

**ER23/3.6/13**

**Planar ER cores and accessories**

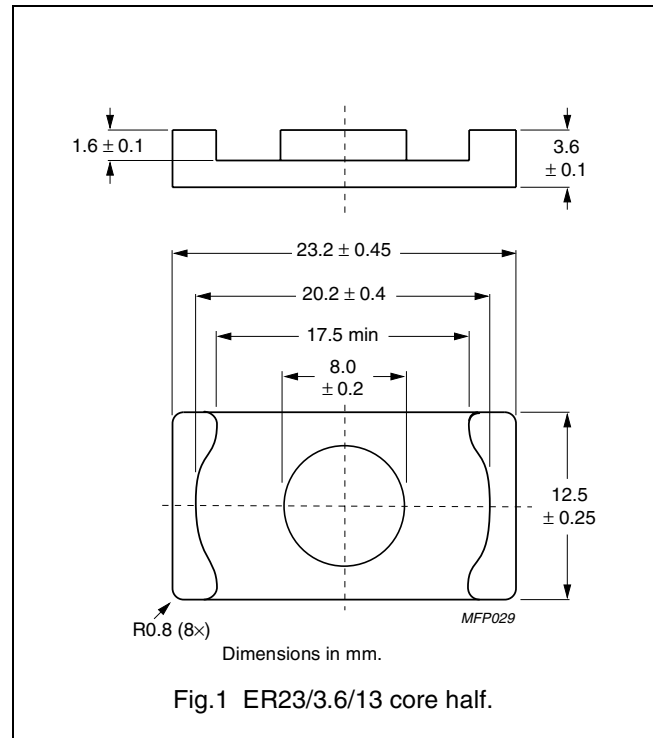
Supersedes data of September 2004

2008 Sep 01

**CORE SETS**

**Effective core parameters**

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



**Core sets for general purpose transformers and power applications**

Clamping force for  $A_L$  measurements,  $20 \pm 10$  N.

GRADE	$A_L$ (nH)	$\mu_e$	AIR GAP ( $\mu$ m)	TYPE NUMBER
3C92 <span style="background-color: black; color: white; padding: 2px;">des</span>	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 <span style="background-color: black; color: white; padding: 2px;">des</span>	3200 ± 25 %	≈ 1350	≈ 0	ER23/3.6/13-3C93-S
3C95 <span style="background-color: black; color: white; padding: 2px;">des</span>	4460 ± 25 %	≈ 1880	≈ 0	ER23/3.6/13-3C95-S
3C96 <span style="background-color: black; color: white; padding: 2px;">des</span>	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 <span style="background-color: black; color: white; padding: 2px;">des</span>	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 <span style="background-color: black; color: white; padding: 2px;">des</span>	1850 ± 25 %	≈ 840	≈ 0	ER23/3.6/13-3F4-S
3F45 <span style="background-color: black; color: white; padding: 2px;">prot</span>	1850 ± 25 %	≈ 840	≈ 0	ER23/3.6/13-3F45-S

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	f̂ = 100 kHz; B̂ = 100 mT; T = 100 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 25 °C	f̂ = 100 kHz; B̂ = 200 mT; T = 100 °C	f̂ = 400 kHz; B̂ = 50 mT; T = 100 °C	f̂ = 500 kHz; B̂ = 50 mT; T = 100 °C	f̂ = 500 kHz; B̂ = 100 mT; T = 100 °C
3C92	≥ 370	≤ 0.11	–	≤ 0.70	–	–	–
3C93	≥ 320	≤ 0.11 <sup>(1)</sup>	–	≤ 0.70 <sup>(1)</sup>	–	–	–
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	f̂ = 1 MHz; B̂ = 30 mT; T = 100 °C	f̂ = 1 MHz; B̂ = 50 mT; T = 100 °C	f̂ = 3 MHz; B̂ = 10 mT; T = 100 °C
3F4	≥ 250	≤ 0.4	–	≤ 0.64
3F45	≥ 250	≤ 0.31	≤ 1.15	≤ 0.53

MOUNTING INFORMATION

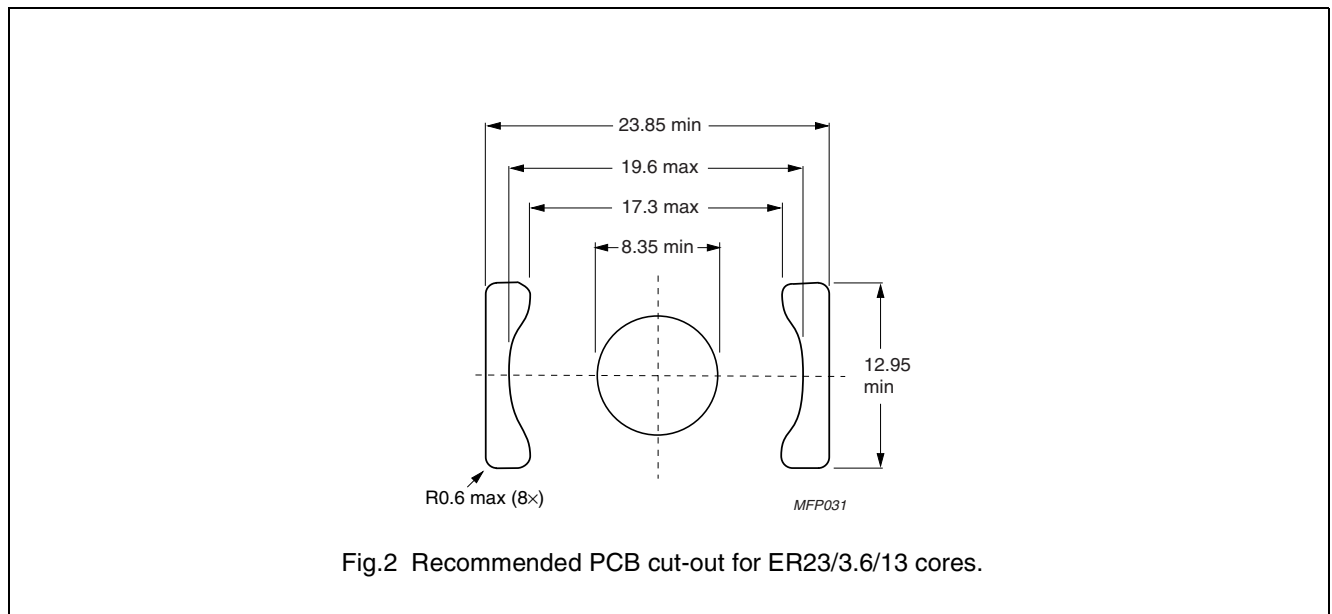


Fig.2 Recommended PCB cut-out for ER23/3.6/13 cores.

Winding data for ER23/3.6/13 planar core

WINDING AREA (mm <sup>2</sup> )	AVERAGE TRACK LENGTH (mm)	FOOTPRINT AREA (mm <sup>2</sup> )
19.5	44.3	375




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DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS
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