

Fair-Rite Products Corp. PO Box J,One Commercial Row, Wallkill, NY 12589-0288 Phone: (888) 324-7748 www.fair-rite.com

Fair-Rite Product's Catalog Part Data Sheet, 9598343502 Printed: 2012-03-05





Part Number:	9598343502
Frequency Range:	Dimensions
Description:	98 ETD CORE
Application:	Inductive Components
Where Used:	Closed Magnetic Circuit
Part Type:	ETD Cores
Genaric Name:	ETD34

Mechanical Specifications

Weight: 40.000 (g)

Part Type Information

ETD29, ETD34, ETD39, ETD44, ETD49, ETD54, ETD59

ETD cores have been designed to make optimum use of a given volume of ferrite material for maximum throughput power, specifically for forward converter transformers. The structure, which includes a round center post, approaches a nearly uniform cross-sectional area throughout the core and provides a winding area that minimizes winding losses. ETD cores are used mainly in switched-mode power supplies and permit off-line designs where IEC and VDE isolation requirements must be met.

-ETD cores can be supplied with the centerpost gapped to a mechanical dimension. -ETD cores can also be supplied to an AL value, these would be supplied in sets. Fair-Rite Products Corp. Your Signal Solution®

Ferrite Components for the Electronics Industry

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Mechanical Specifications

Dim	mm	mm	nominal	inch
		tol	inch	misc.
А	34.20	± 0.65	1.346	-
В	17.30	± 0.2	0.681	-
С	10.80	± 0.3	0.425	-
D	12.10	± 0.2	0.476	-
Е	25.60	min	1.008	min
F	10.80	± 0.3	0.425	-
G	-	-	-	-
Н	-	-	-	-
J	-	-	-	-
K	-	-	-	-

Electrical Specifications

Typical Impedance (Ω)		
Electrical Properties		
A _L (nH)	2600 ±25%	
Ae(cm ²)	0.97200	
Σ I/A(cm ⁻¹)	8.20	
l _e (cm)	7.90	
V _e (cm ³)	7.68000	
A _{min} (cm ²)	.916	

Land Patterns

\vee	W	Х	Υ	Ζ
	ref			
-	-	-	-	-
-	-	-	-	-

Winding Information

Turns	Wire	1st Wire	2nd Wire
Tested	Size	Length	Length
-	-	-	-

Reel Information

Tape Width	Pitch	Parts 7 "	Parts 13 "	Parts 14 "
mm	mm	Reel	Reel	Reel
-	-	-	-	-

Package Size

Pkg Size
-
(-)

Connector Plate

# Holes	# Rows
-	-

Legend

+ Test frequency

Preferred parts, the suggested choice for new designs, have shorter lead times and are more readily available.

The column H(Oe) gives for each bead the calculated dc bias field in oersted for 1 turn and 1 ampere direct current. The actual dc H field in the application is this value of H times the actual NI (ampere-turn) product. For the effect of the dc bias on the impedance of the bead material, see figures 18-23 in the application note How to choose Ferrite Components for EMI Suppression.

A ½ turn is defined as a single pass through a hole.

I/A - Core Constant

Ae: Effective Cross-Sectional Area

 A_{I} - Inductance Factor $\left(\frac{L}{N^{2}}\right)$

N/AWG - Number of Turns/Wire Size for Test Coil

I e: Effective Path Length

Ve: Effective Core Volume

NI - Value of dc Ampere-turns



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Ferrite Material Constants

Specific Heat	0.25 cal/g/⁰C
Thermal Conductivity	10x10 ⁻³ cal/sec/cm/°C
Coefficient of Linear Expansion	8 - 10x10 ⁻⁶ /°C
Tensile Strength	4.9 kgf/mm ²
Compressive Strength	42 kgf/mm ²
Young's Modulus	15x10 ³ kgf/mm ²
Hardness (Knoop)	650
Specific Gravity	\approx 4.7 g/cm ³
The above quoted properties are typical for Fair-Rite	e MnZn and NiZn ferrites.

See next page for further material specifications.



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A low loss MnZn ferrite material for power applications up to 200kHz. New type 98 Material is an improved version of Fair-Rite's 78 Material, this material supplies lower power loss at 100°C at moderate flux densities for operation below 200kHz.

Shapes available in 98 material are Toroids, U Cores, E&I Cores, Pot Cores, RM, PQ, ETD, EFD, EP, EER.

Property	Unit	Symbol	Value
Initial Permeability		μ_{i}	2400
@ B < 10gauss			
Flux Density	gauss	В	5000
@ Field Strength	oersted	Н	5
Residual Flux Density	gauss	Br	1800
Coercive Force	oersted	Hc	0.17
Loss Factor	10 ⁻⁶	tanδ/μ _i	3.5
@ Frequency	MHz		0.1
Temperature Factor of	10 ⁻⁸ / ºC		58
Initial Permeability (25 - 60°C)	10 7 0		0.0
Curie Temperature	°C	Tc	> 215
Resistivity	ohm-cm	ρ	200

98 Material Characteristics







Measured on an 18/10/6mm toroid at 10kHz.



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A low loss MnZn ferrite material for power applications up to 200kHz.



Measured on an 18/10/6mm toroid at 10kHz.



Measured on an 18/10/6mm toroid using the Clarke Hess 258 VAW.



Measured on an 18/10/6mm toroid using the Clarke Hess 258 VAW at 100°C.



Measured on an 18/10/6mm toroid at 10kHz and H=5 oersted.