



POWERING INNOVATION THAT DRIVES HUMAN ADVANCEMENT

© 2025 ANSYS, Inc. or its affiliated companies
Unauthorized use, distribution, or duplication is prohibited.

Twin Builder® Components: Magnetic



ANSYS, Inc.
Southpointe
2600 Ansys Drive
Canonsburg, PA 15317
ansysinfo@ansys.com
<https://www.ansys.com>
(T) 724-746-3304
(F) 724-514-9494

Release 2025 R2
July 2025

ANSYS, Inc. and
ANSYS Europe,
Ltd. are UL
registered ISO
9001:2015 com-
panies.

Copyright and Trademark Information

© 1986-2025 ANSYS, Inc. Unauthorized use, distribution or duplication is prohibited.

ANSYS, Ansys Workbench, AUTODYN, CFX, FLUENT and any and all ANSYS, Inc. brand, product, service and feature names, logos and slogans are registered trademarks or trademarks of ANSYS, Inc. or its subsidiaries located in the United States or other countries. ICM CFD is a trademark used by ANSYS, Inc. under license. All other brand, product, service and feature names or trademarks are the property of their respective owners. FLEXIm and FLEXnet are trademarks of Flexera Software LLC.

Disclaimer Notice

THIS ANSYS SOFTWARE PRODUCT AND PROGRAM DOCUMENTATION INCLUDE TRADE SECRETS AND ARE CONFIDENTIAL AND PROPRIETARY PRODUCTS OF ANSYS, INC., ITS SUBSIDIARIES, OR LICENSORS. The software products and documentation are furnished by ANSYS, Inc., its subsidiaries, or affiliates under a software license agreement that contains provisions concerning non-disclosure, copying, length and nature of use, compliance with exporting laws, warranties, disclaimers, limitations of liability, and remedies, and other provisions. The software products and documentation may be used, disclosed, transferred, or copied only in accordance with the terms and conditions of that software license agreement.

ANSYS, Inc. and ANSYS Europe, Ltd. are UL registered ISO 9001: 2015 companies.

U.S. Government Rights

For U.S. Government users, except as specifically granted by the ANSYS, Inc. software license agreement, the use, duplication, or disclosure by the United States Government is subject to restrictions stated in the ANSYS, Inc. software license agreement and FAR 12.212 (for non-DOD licenses).

Third-Party Software

See the legal information in the product help files for the complete Legal Notice for Ansys proprietary software and third-party software. If you are unable to access the Legal Notice, please contact ANSYS, Inc.

Table of Contents

Table of Contents	Contents-1
1 - Manufacturers Magnetic Library	1-2
AVX Magnetic Components	1-3
Jiles-Atherton Model for AVX B1	1-4
Jiles-Atherton Model for AVX B2	1-6
Jiles-Atherton Model for AVX B3	1-8
Jiles-Atherton Model for AVX B5	1-10
Jiles-Atherton Model for AVX B7	1-12
Jiles-Atherton Model for AVX F1	1-14
Jiles-Atherton Model for AVX F2	1-16
Jiles-Atherton Model for AVX F4	1-18
Epcos Magnetic Components	1-20
Jiles-Atherton Model for Epcos N27	1-21
Jiles-Atherton Model for Epcos N41	1-23
Jiles-Atherton Model for Epcos N49	1-25
Jiles-Atherton Model for Epcos N72	1-27
Jiles-Atherton Model for Epcos N87	1-29
Jiles-Atherton Model for Epcos N92	1-31
Jiles-Atherton Model for Epcos N97	1-33
Ferroxcube Magnetic Components	1-35
Jiles-Atherton Model for Ferroxcube 3C81	1-36
Jiles-Atherton Model for Ferroxcube 3C90	1-38
Jiles-Atherton Model for Ferroxcube 3C91	1-41
Jiles-Atherton Model for Ferroxcube 3C92	1-43
Jiles-Atherton Model for Ferroxcube 3C93	1-45
Jiles-Atherton Model for Ferroxcube 3C94	1-47
Jiles-Atherton Model for Ferroxcube 3C96	1-49
Jiles-Atherton Model for Ferroxcube 3F3	1-51

Jiles-Atherton Model for Ferroxcube 3F35	1-53
Jiles-Atherton Model for Ferroxcube 3F4	1-55
Jiles-Atherton Model for Ferroxcube 3F45	1-57
Jiles-Atherton Model for Ferroxcube 3F5	1-59
Jiles-Atherton Model for Ferroxcube 4F1	1-61
Magnetics Magnetic Components	1-63
Jiles-Atherton Model for Magnetics A	1-64
Jiles-Atherton Model for Magnetics D	1-66
Jiles-Atherton Model for Magnetics E	1-68
Jiles-Atherton Model for Magnetics F	1-70
Jiles-Atherton Model for Magnetics H	1-72
Jiles-Atherton Model for Magnetics J	1-74
Jiles-Atherton Model for Magnetics K	1-76
Jiles-Atherton Model for Magnetics P	1-78
Jiles-Atherton Model for Magnetics R	1-80
Jiles-Atherton Model for Magnetics S	1-82
Jiles-Atherton Model for Magnetics W	1-84
Micrometals Magnetic Components	1-86
Jiles-Atherton Model for Micrometals M-18	1-87
Jiles-Atherton Model for Micrometals M-2	1-89
Jiles-Atherton Model for Micrometals M-26	1-91
Jiles-Atherton Model for Micrometals M-30	1-93
Jiles-Atherton Model for Micrometals M-34	1-95
Jiles-Atherton Model for Micrometals M-35	1-97
Jiles-Atherton Model for Micrometals M-40	1-99
Jiles-Atherton Model for Micrometals M-52	1-101
Jiles-Atherton Model for Micrometals M-8	1-103
Steward Magnetic Components	1-105
Jiles-Atherton Model for Steward 24	1-106
Jiles-Atherton Model for Steward 26	1-108

Jiles-Atherton Model for Steward 27	1-110
Jiles-Atherton Model for Steward 31	1-112
Jiles-Atherton Model for Steward 33	1-114
Jiles-Atherton Model for Steward 34	1-116
Jiles-Atherton Model for Steward 35	1-118
Jiles-Atherton Model for Steward 37	1-120
Jiles-Atherton Model for Steward 40	1-122
Jiles-Atherton Model for Steward 42	1-124
TDK Magnetic Components	1-126
Jiles-Atherton Model for TDK PC30	1-127
Jiles-Atherton Model for TDK PC40	1-129
Jiles-Atherton Model for TDK PC44	1-131
Jiles-Atherton Model for TDK PC50	1-133
Index	Index-1

1 - Manufacturers Magnetic Library

The Manufacturers Magnetic Library contains information for Magnetic models grouped by manufacturer as follows:

- [AVX](#)
- [Epcos](#)
- [Ferroxcube](#)
- [Magnetics](#)
- [Micrometals](#)
- [Steward](#)
- [TDK](#)

AVX Magnetic Components

- [Jiles-Atherton Model for AVX B1 \(JA_B1\)](#)
- [Jiles-Atherton Model for AVX B2 \(JA_B2\)](#)
- [Jiles-Atherton Model for AVX B3 \(JA_B3\)](#)
- [Jiles-Atherton Model for AVX B5 \(JA_B5\)](#)
- [Jiles-Atherton Model for AVX B7 \(JA_B7\)](#)
- [Jiles-Atherton Model for AVX F1 \(JA_F1\)](#)
- [Jiles-Atherton Model for AVX F2 \(JA_F2\)](#)
- [Jiles-Atherton Model for AVX F4 \(JA_F4\)](#)

Jiles-Atherton Model for AVX B1

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

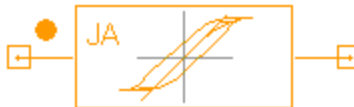


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2500
MSHYP	Saturation Magnetization (Hyperbola)	real	291884 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	16.5632 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	291884 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	13.2689 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5.33333e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1418
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.113603
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX B2

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

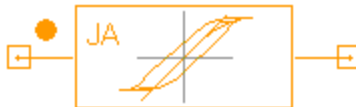


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1900
MSHYP	Saturation Magnetization (Hyperbola)	real	302807 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	23.855 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	302807 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.1452 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1496
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.088709
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX B3

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

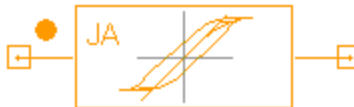


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1900
MSHYP	Saturation Magnetization (Hyperbola)	real	311720 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	19.05 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	311720 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	16.4653 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	6.94444e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1161
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.100307
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX B5

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

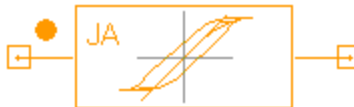


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1800
MSHYP	Saturation Magnetization (Hyperbola)	real	304449 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	20.7822 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	304449 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	17.1853 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	6.94444e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1228
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.101548
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX B7

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

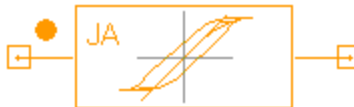


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2000
MSHYP	Saturation Magnetization (Hyperbola)	real	304449 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	19.9829 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	304449 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	15.3868 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5.33333e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1312
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.101029
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX F1

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

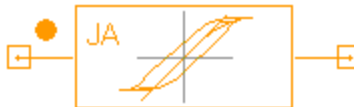


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	317668 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	21.7276 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	317668 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	13.4812 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.111111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.185373
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.097565
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX F2

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1900
MSHYP	Saturation Magnetization (Hyperbola)	real	266209 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	12.5133 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	266209 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	15.0021 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000101667
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0893
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	12.2 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.107017
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for AVX F4

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

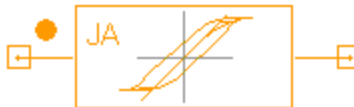


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1300
MSHYP	Saturation Magnetization (Hyperbola)	real	256246 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	8.6729 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	256246 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	11.5461 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	8.55555e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.044
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	12.2 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.058531
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.4 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Epcos Magnetic Components

- [Jiles-Atherton Model for Epcos N27 \(JA_N27\)](#)
- [Jiles-Atherton Model for Epcos N41 \(JA_N41\)](#)
- [Jiles-Atherton Model for Epcos N49 \(JA_N49\)](#)
- [Jiles-Atherton Model for Epcos N72 \(JA_N72\)](#)
- [Jiles-Atherton Model for Epcos N87 \(JA_N87\)](#)
- [Jiles-Atherton Model for Epcos N92 \(JA_N92\)](#)
- [Jiles-Atherton Model for Epcos N97 \(JA_N97\)](#)

Jiles-Atherton Model for Epcos N27

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2000
MSHYP	Saturation Magnetization (Hyperbola)	real	362657 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	30.6365 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	362657 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	27.726[A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000101667
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1689
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	24.4 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.152828
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	20 [A/m]
RHO	Electrical Resistivity of Core Material	real	3 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N41

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

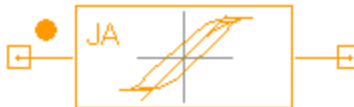


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2800
MSHYP	Saturation Magnetization (Hyperbola)	real	302785 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	22.7737 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	302785 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.1437 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2105
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.130747
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	9.95 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N49

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

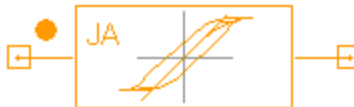


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1500
MSHYP	Saturation Magnetization (Hyperbola)	real	359718 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	39.7519 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	356186 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	29.7685 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	8.55556e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1657
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	23.5 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.12528
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	20.6007 [A/m]
RHO	Electrical Resistivity of Core Material	real	4 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N72

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

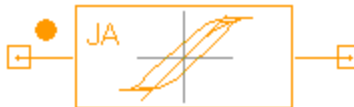


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2500
MSHYP	Saturation Magnetization (Hyperbola)	real	322876 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	24.9774 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	302475 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.5033 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1933
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.119824
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.0501 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N87

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

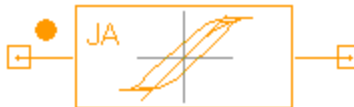


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2200
MSHYP	Saturation Magnetization (Hyperbola)	real	341315 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	28.0539 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	320515 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	15.8005 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1807
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.108405
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.1483 [A/m]
RHO	Electrical Resistivity of Core Material	real	4 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N92

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

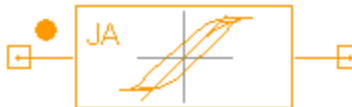


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1500
MSHYP	Saturation Magnetization (Hyperbola)	real	374052 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	33.2473 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	355912 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	17.9303 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1332
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.075517
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.1486 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Epcos N97

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

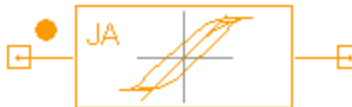


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	369007 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	29.9749 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	343240 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.9908 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1868
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.100407
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.3154 [A/m]
RHO	Electrical Resistivity of Core Material	real	4 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Ferroxcube Magnetic Components

- [Jiles-Atherton Model for Ferroxcube 3C81 \(JA_3C81\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C90 \(JA_3C90\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C91 \(JA_3C91\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C92 \(JA_3C92\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C93 \(JA_3C93\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C94 \(JA_3C94\)](#)
- [Jiles-Atherton Model for Ferroxcube 3C96 \(JA_3C96\)](#)
- [Jiles-Atherton Model for Ferroxcube 3F3 \(JA_3F3\)](#)
- [Jiles-Atherton Model for Ferroxcube 3F35 \(JA_3F35\)](#)
- [Jiles-Atherton Model for Ferroxcube 3F4 \(JA_3F4\)](#)
- [Jiles-Atherton Model for Ferroxcube 3F45 \(JA_3F45\)](#)
- [Jiles-Atherton Model for Ferroxcube 3F5 \(JA_3F5\)](#)
- [Jiles-Atherton Model for Ferroxcube 4F1 \(JA_4F1\)](#)

Jiles-Atherton Model for Ferroxcube 3C81

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

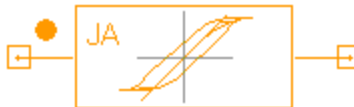


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2700
MSHYP	Saturation Magnetization (Hyperbola)	real	305710 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	38.7124 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	283716 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	17.634[A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.3418
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	12.2 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.167753
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.3794 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C90

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

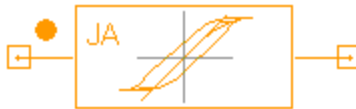


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²] NOTE: This value displays as m² wire in the user interface.
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	324496 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	25.1774 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	324496 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	21.9092 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	8.55555e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1784
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	18.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.155223
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	15 [A/m]

RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C91

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

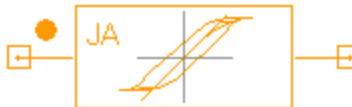


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	3000
MSHYP	Saturation Magnetization (Hyperbola)	real	334045 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	30.0227 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	304896 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.3313 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2695
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.140964
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.147 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C92

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

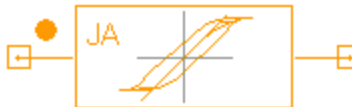


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1500
MSHYP	Saturation Magnetization (Hyperbola)	real	381792 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	33.8787 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	363773 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	18.5575 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.133
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.07647
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.1282 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C93

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

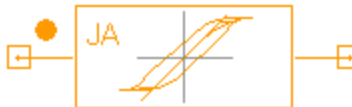


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1800
MSHYP	Saturation Magnetization (Hyperbola)	real	364915 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	35.1319 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	344943 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	18.5685 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1732
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.096827
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	9.95 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C94

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; MUE > 1	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	325445 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	31.9698 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	325445 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	27.8199 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.0001101667
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2258
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	25.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.196525
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	19.9 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3C96

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2000
MSHYP	Saturation Magnetization (Hyperbola)	real	364915 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	35.1319 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	334759 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	16.4479 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1925
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.098218
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10.1568 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3F3

Library: Magnetic

Modeling Language: SML

Version Number: Twin Builder 2025.2

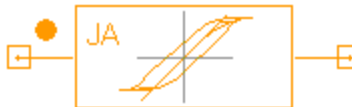


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

See *Jiles-Atherton Core Model* in the Basic Elements components for more details.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2000
MSHYP	Saturation Magnetization (Hyperbola)	real	313680 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	21.7276 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	313680 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	16.0868 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5.33333e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1385
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.102517
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3F35

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1400
MSHYP	Saturation Magnetization (Hyperbola)	real	334640 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	34.3099 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	334640 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	32.5146 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1434
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	30.5 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.135931
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	25 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3F4

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	900
MSHYP	Saturation Magnetization (Hyperbola)	real	293558 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	51.4199 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	291268 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	41.8817 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1575
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	63.25 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.129268
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	53.4729 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3F45

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

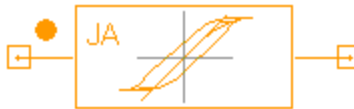


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	900
MSHYP	Saturation Magnetization (Hyperbola)	real	293446 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	51.3839 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	293446 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	40.6291 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1574
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	63.25 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.12447
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	52 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 3F5

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

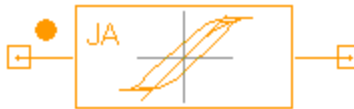


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	650
MSHYP	Saturation Magnetization (Hyperbola)	real	295428 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	90.6235 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	283308 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	54.938 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1991
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	61 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.125851
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	51.6934 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Ferroxcube 4F1

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	80
MSHYP	Saturation Magnetization (Hyperbola)	real	261339 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	128.2184 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	243694 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	72.7355 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0388
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	189.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.023579
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	169.5 [A/m]
RHO	Electrical Resistivity of Core Material	real	100000 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Magnetics Magnetic Components

- [Jiles-Atherton Model for Magnetics A \(JA_A\)](#)
- [Jiles-Atherton Model for Magnetics D \(JA_D\)](#)
- [Jiles-Atherton Model for Magnetics E \(JA_E\)](#)
- [Jiles-Atherton Model for Magnetics F \(JA_F\)](#)
- [Jiles-Atherton Model for Magnetics H \(JA_H\)](#)
- [Jiles-Atherton Model for Magnetics J \(JA_J\)](#)
- [Jiles-Atherton Model for Magnetics K \(JA_K\)](#)
- [Jiles-Atherton Model for Magnetics P \(JA_P\)](#)
- [Jiles-Atherton Model for Magnetics R \(JA_R\)](#)
- [Jiles-Atherton Model for Magnetics S \(JA_S\)](#)
- [Jiles-Atherton Model for Magnetics W \(JA_W\)](#)

Jiles-Atherton Model for Magnetics A

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	20000
MSHYP	Saturation Magnetization (Hyperbola)	real	9375646 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	1.2567 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	1483290 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	2.8416 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0027
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	89.1491 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.038312
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	18.6563 [A/m]
RHO	Electrical Resistivity of Core Material	real	4 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics D

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

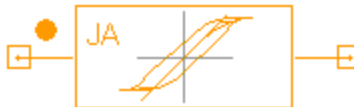


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2000
MSHYP	Saturation Magnetization (Hyperbola)	real	820011 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	0.802 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	662775 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	1.1067 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.002
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	3.3339 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.003338
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	2.8776 [A/m]
RHO	Electrical Resistivity of Core Material	real	3 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics E

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

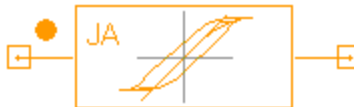


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	20000
MSHYP	Saturation Magnetization (Hyperbola)	real	1012427 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	1.8516[A/m]
MSLAN	Saturation Magnetization (Langevin)	real	608491 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	4.6488 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0366
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	36.125 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.152789
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	21.68 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics F

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

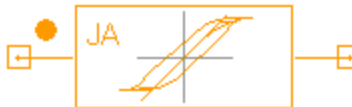


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	3000
MSHYP	Saturation Magnetization (Hyperbola)	real	283463 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	7.3665 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	283463 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	10.8106 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	6.94444e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0779
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	16.445 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.114375
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	14.105 [A/m]
RHO	Electrical Resistivity of Core Material	real	2 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics H

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

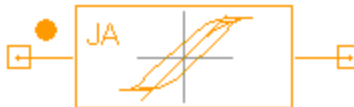


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	15000
MSHYP	Saturation Magnetization (Hyperbola)	real	193502 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	6.0747 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	180688 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	2.8531 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.4709
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	2.8 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.236834
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	2.0507 [A/m]
RHO	Electrical Resistivity of Core Material	real	0.1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics J

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

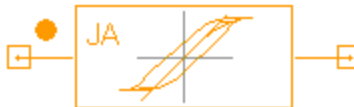


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	5000
MSHYP	Saturation Magnetization (Hyperbola)	real	175342 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	5.2226 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	169296 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	6.4595 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	6.94444e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1489
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	4.88 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.190738
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	4 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics K

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1500
MSHYP	Saturation Magnetization (Hyperbola)	real	1259723 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	394.2112 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	594273 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	77.3587 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.4691
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	24.2013 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.19513
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	20 [A/m]
RHO	Electrical Resistivity of Core Material	real	20 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics P

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

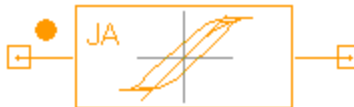


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2500
MSHYP	Saturation Magnetization (Hyperbola)	real	305458 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	18.072 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	305458 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	15.8234 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	6.94444e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1478
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	12.2 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.129454
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics R

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

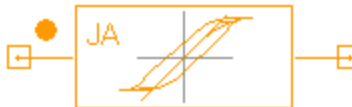


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	305458 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	17.3224 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	295276 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	16.6562 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	8.55556e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1304
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	11.75 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.129684
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	10 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics S

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

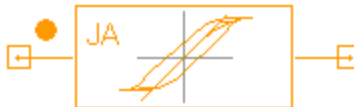


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	25000
MSHYP	Saturation Magnetization (Hyperbola)	real	7173400 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	3.0477 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	3686920 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	6.4183 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.010621
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	55.4131 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.043519
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	24.7203 [A/m]
RHO	Electrical Resistivity of Core Material	real	3 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Magnetics W

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

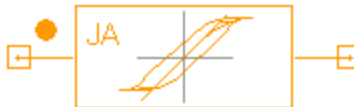


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	1 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	10000
MSHYP	Saturation Magnetization (Hyperbola)	real	217031 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	7.3571 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	180845 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	2.993[A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.339
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	2.466 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.165487
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	2.0558 [A/m]
RHO	Electrical Resistivity of Core Material	real	0.15 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Micrometals Magnetic Components

- [Jiles-Atherton Model for Micrometals M18 \(JA_M18\)](#)
- [Jiles-Atherton Model for Micrometals M2 \(JA_M2\)](#)
- [Jiles-Atherton Model for Micrometals M26 \(JA_M26\)](#)
- [Jiles-Atherton Model for Micrometals M30 \(JA_M30\)](#)
- [Jiles-Atherton Model for Micrometals M34 \(JA_M34\)](#)
- [Jiles-Atherton Model for Micrometals M35 \(JA_M35\)](#)
- [Jiles-Atherton Model for Micrometals M40 \(JA_M40\)](#)
- [Jiles-Atherton Model for Micrometals M52 \(JA_M52\)](#)
- [Jiles-Atherton Model for Micrometals M8 \(JA_M8\)](#)

Jiles-Atherton Model for Micrometals M-18

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

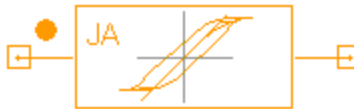


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	55
MSHYP	Saturation Magnetization (Hyperbola)	real	907050 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	6703.4821 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	743657 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	2181.51 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.3391
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	713.3977 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.158408
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	676 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-2

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

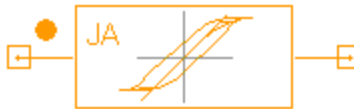


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	10
MSHYP	Saturation Magnetization (Hyperbola)	real	1176331 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	121640.6901 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	609840 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	21535.9004 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.9307
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	310.2312 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.317826
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	303.8 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-26

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

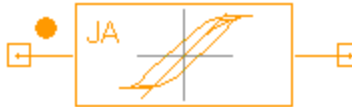


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	75
MSHYP	Saturation Magnetization (Hyperbola)	real	1169233 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	2983.5933 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	1080510 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	1109.67 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1888
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	477.4 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.075997
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	440 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-30

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	22
MSHYP	Saturation Magnetization (Hyperbola)	real	1095386 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	26793.9975 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	787144 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	6777.21 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.5137
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	416 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.180807
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	412.786 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-34

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

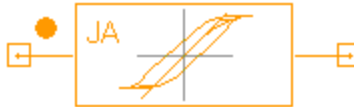


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	33
MSHYP	Saturation Magnetization (Hyperbola)	real	969561 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	15728.8378 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	796977 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	4593.1802 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.5191
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	427.3439 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.184424
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	416.999 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-35

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	33
MSHYP	Saturation Magnetization (Hyperbola)	real	969561 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	15728.8378 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	796977 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	4593.1802 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.5191
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	427.3439 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.184424
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	416.999 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-40

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

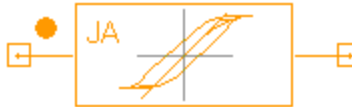


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	60
MSHYP	Saturation Magnetization (Hyperbola)	real	1273362 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	5227.8108 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	1076540 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	1677.85 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2422
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	379.6 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.091955
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	365 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-52

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	75
MSHYP	Saturation Magnetization (Hyperbola)	real	1332977 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	4954.1559 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	1118100 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	1592.59 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.275
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	541.7631 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.105404
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	500 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Micrometals M-8

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

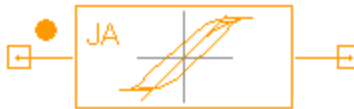


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	35
MSHYP	Saturation Magnetization (Hyperbola)	real	1389643 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	26134.4668 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	1046990 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	7265.8301 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.6394
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	792.05 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.235952
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	755.404 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Steward Magnetic Components

- [Jiles-Atherton Model for Steward 24 \(JA_24\)](#)
- [Jiles-Atherton Model for Steward 26 \(JA_26\)](#)
- [Jiles-Atherton Model for Steward 27 \(JA_27\)](#)
- [Jiles-Atherton Model for Steward 31 \(JA_31\)](#)
- [Jiles-Atherton Model for Steward 33 \(JA_33\)](#)
- [Jiles-Atherton Model for Steward 34 \(JA_34\)](#)
- [Jiles-Atherton Model for Steward 35 \(JA_35\)](#)
- [Jiles-Atherton Model for Steward 37 \(JA_37\)](#)
- [Jiles-Atherton Model for Steward 40 \(JA_40\)](#)
- [Jiles-Atherton Model for Steward 42 \(JA_42\)](#)

Jiles-Atherton Model for Steward 24

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1050
MSHYP	Saturation Magnetization (Hyperbola)	real	239820 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	19.5101 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	239820 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	21.3584 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.0853
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	30.36 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.093424
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	26.04 [A/m]
RHO	Electrical Resistivity of Core Material	real	10000 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 26

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------



Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	850
MSHYP	Saturation Magnetization (Hyperbola)	real	240463 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	12.6417 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	240463 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	17.6704 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.044634
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	36.68 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.062389
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	32.9 [A/m]
RHO	Electrical Resistivity of Core Material	real	100000 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 27

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

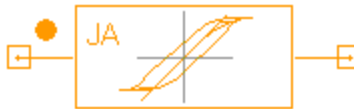


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1500
MSHYP	Saturation Magnetization (Hyperbola)	real	257639 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	25.9651 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	249051 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	23.7182 [A/m]

ALPHALAN	Interdomain Coupling Coefficient	real	0.000133889
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.1511
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	25.3 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.142756
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	20.8[A/m]
RHO	Electrical Resistivity of Core Material	real	10000 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 31

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

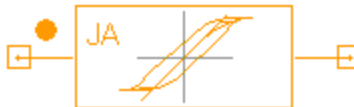


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	4500
MSHYP	Saturation Magnetization (Hyperbola)	real	369077 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	18.6549 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	348239 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	10.7022 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2274
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	9.76 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.138265
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	8.3187 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 33

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

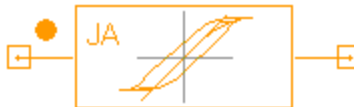


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2700
MSHYP	Saturation Magnetization (Hyperbola)	real	461975 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	50.1018 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	433239 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	26.7433 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	3.72222e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2927
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	19.52 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.166606
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	15.92 [A/m]
RHO	Electrical Resistivity of Core Material	real	5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 34

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

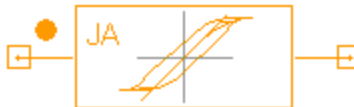


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	4000
MSHYP	Saturation Magnetization (Hyperbola)	real	374833 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	23.4958 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	333429 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	11.7524 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2507
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	12.2 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.140953
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	9.868 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 35

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

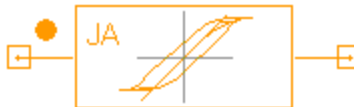


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	5000
MSHYP	Saturation Magnetization (Hyperbola)	real	338547 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	13.9147 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	329877 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	9.0632 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2055
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	9.76 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.137344
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	8.217 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 37

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

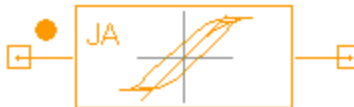


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	7500
MSHYP	Saturation Magnetization (Hyperbola)	real	326467 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	9.4762 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	319704 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	5.027 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2177
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	4.7 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.117913
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	4.2351 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 40

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

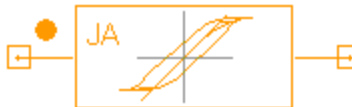


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	10000
MSHYP	Saturation Magnetization (Hyperbola)	real	338592 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	7.9771 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	319091 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	4.1263 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2356
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	3.525 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.1293
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	3.1415 [A/m]
RHO	Electrical Resistivity of Core Material	real	0.5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for Steward 42

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

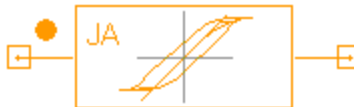


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	7500
MSHYP	Saturation Magnetization (Hyperbola)	real	350650 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	13.9837 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	329490 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	8.6462 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2991
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	7.59 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.1293
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	6.1079 [A/m]
RHO	Electrical Resistivity of Core Material	real	1 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

TDK Magnetic Components

- [Jiles-Atherton Model for TDK PC30 \(JA_PC30\)](#)
- [Jiles-Atherton Model for TDK PC40 \(JA_PC40\)](#)
- [Jiles-Atherton Model for TDK PC44 \(JA_PC44\)](#)
- [Jiles-Atherton Model for TDK PC50 \(JA_PC50\)](#)

Jiles-Atherton Model for TDK PC30

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

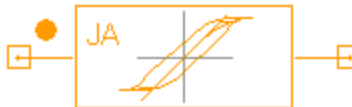


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2500
MSHYP	Saturation Magnetization (Hyperbola)	real	336479 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	28.4398 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	285279 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	12.8917 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	2.11111e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2112
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	9.1019 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.112929
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	7.9532 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for TDK PC40

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

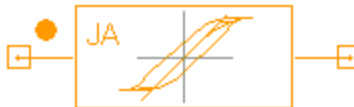


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2300
MSHYP	Saturation Magnetization (Hyperbola)	real	335251 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	51.4826 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	321518 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	20.6032 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.353
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	9.944 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.147322
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	8.8 [A/m]
RHO	Electrical Resistivity of Core Material	real	6.5 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for TDK PC44

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

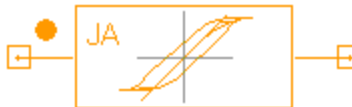


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	2400
MSHYP	Saturation Magnetization (Hyperbola)	real	313622 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	32.8821 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	309152 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	14.3767 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5e-006
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.2515
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	7.345 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.111563
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	6.5 [A/m]
RHO	Electrical Resistivity of Core Material	real	6 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Jiles-Atherton Model for TDK PC50

Library: Magnetic	Modeling Language: SML	Version Number: Twin Builder 2025.2
-------------------	------------------------	-------------------------------------

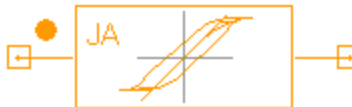


Figure 1. Component symbol

Description

This manufacturer supplied model is based on the Jiles-Atherton Core model.

Parameters

Table 1
Linear Jiles-Atherton Model

Name	Description	Data Type	Default Value [Unit]
H0	Initial magnetic field	real	0 [A/m]
M0	Initial Magnetization; $ M0 \geq 1$	real	0 [A/m]
AE	Effective Area of Core Material	real	0.000198 [m ²]
LE	Effective Length of Core	real	0.07 [m]
LEVEL	Model Level Selector	real	0
MUE	Effective relative Permeability of Core; $MUE > 1$	real	1400
MSHYP	Saturation Magnetization (Hyperbola)	real	325290 [A/m]
AHYP	Thermal Energy Parameter (Hyperbola)	real	70.455 [A/m]
MSLAN	Saturation Magnetization (Langevin)	real	325290 [A/m]
ALAN	Thermal Energy Parameter (Langevin)	real	38.9254 [A/m]
ALPHALAN	Interdomain Coupling Coefficient	real	5.33333e-005
CHYP	Reversible Magnetization Coefficient (Hyperbola)	real	0.3731
KHYP	Pinning Energy (drag) Parameter (Hyperbola)	real	33.1282 [A/m]
CLAN	Reversible Magnetization Coefficient (Langevin)	real	0.16741
KLAN	Pinning Energy (drag) Parameter (Langevin)	real	27.2 [A/m]
RHO	Electrical Resistivity of Core Material	real	10 [Ohm*m]
KW1	Coefficient 1 for Electrical Resistivity in AC Simulation	real	0 [s/rad]
KW2	Coefficient 2 for Electrical Resistivity in AC Simulation	real	0 [s ² /rad ²]

Index

A

AVX Magnetic Components 1-3

E

Epcos Magnetic Components 1-20

F

Ferroxcube Magnetic
Components 1-35

M

Magnetics Magnetic
Components 1-63

Manufacturers Library 1-2

Micrometals Magnetic
Components 1-86

S

Steward Magnetic Components 1-
105

T

TDK Magnetic Components 1-126