iBE

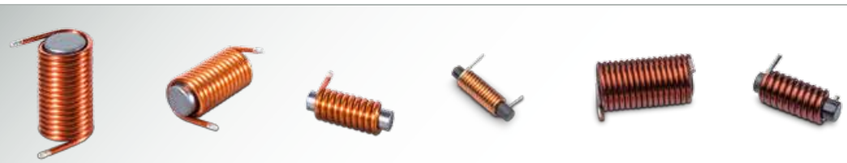
WÜRTH ELEKTRONIK

Würth Elektronik iBE

Automotive solutions

EN

Our product range



Rod Core Chokes THT

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Rod Core Chokes SMD

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Flat Wire Power Inductors SMD

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Power Inductors SMD

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Molded Power Inductors SMD

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High Current Inductors THT

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Chip Beads Automotive

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Balun and Cylinder Cores

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www.we-online.com/iBE

Information in this brochure is subject to change. The process of continually improving our product range leads to changes in content.
For new designs please contact our product management. © 10/2016

Product values

Operating temperature range:
-40°C to +85°C

Operating temperature range:
-40°C to +125°C

Operating temperature range:
-40°C to +150°C

Operating temperature range:
-40°C to +170°C

Product validation according
to AEC-Q 200 standard

Product validation according
to AEC-Q 200 standard with
extended testing conditions

Simulation data
available upon request

Capable for Automated Optical
Inspection (AOI)

Recommended processing:
reflow

duraTIN®: thick layer tinning for
excellent solderability

Automated processable by
pick & place area

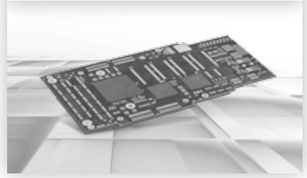
The Würth Group

The Würth Group
Over 69,000 employees and sales of 11 billion €*

The Würth Elektronik Group
Over 7,200 employees and sales of 688 million €*

Electronic & Electromechanical Components

Printed Circuit Boards



Intelligent Power and Control Systems

Standard

eiSos

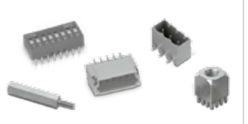
Passive Components

Power Modules

LEDs

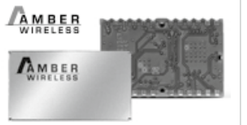
eiCan

Electromechanical Components



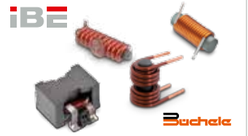
Amber

Wireless Connectivity



Customized

Automotive



Magnetics

Connectors

*2015

The iBE Group – a global footprint

think globally – act locally

Over 1,200 employees and sales of 48 million €*

Esslingen (Germany)

Thyrnau (Germany)

Budweis (Czech Republic)

Detroit (USA)

Belozem (Bulgaria)

Shenyang (China)

Japan

Shanghai (China)

Irapuato (Mexico)

HEADQUARTER
PRODUCTION
SALES OFFICE

Irapuato (MX)
since 2006

Detroit (USA)
since 2015

Thyrnau (DE)
since 1982

Esslingen (DE)
since 1946
since 2016 @ iBE Group

Budweis (CZ)
since 1990

Belozem (BG)
since 2002

Shenyang (CN)
since 2005

Shanghai (CN)
since 2010

Japan
planned for 2016

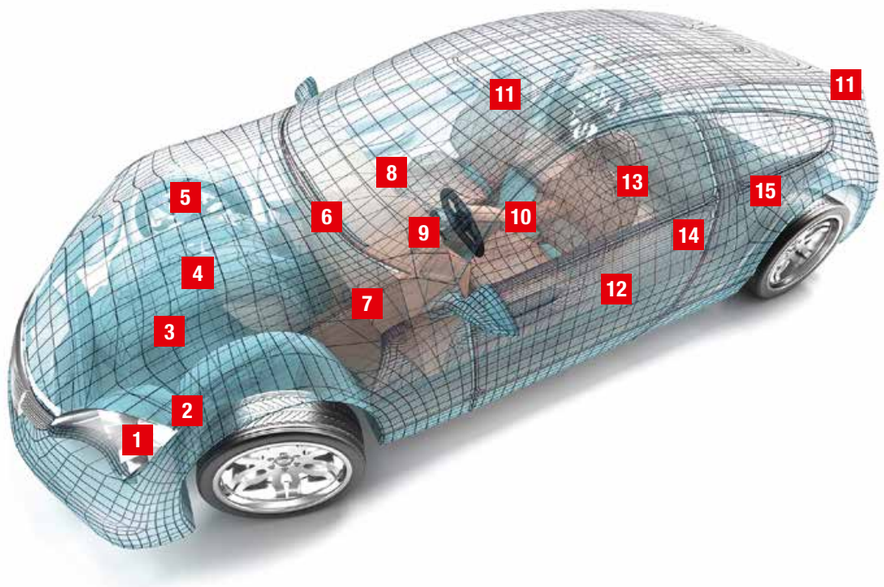
*2015

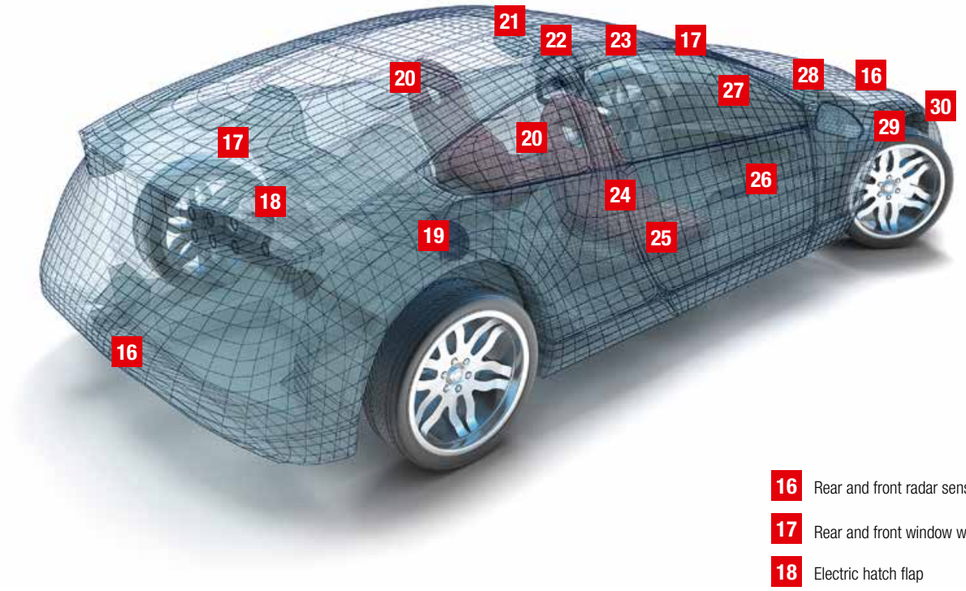
Applications

An automobile and nothing electronic?

Unthinkable!

1 LED/Xenon control
2 Headlight leveling
3 Radiator fan motor/cooling water pump
4 Transmission control
5 Electric power steering (EPS)
6 Interval switch for windscreen wipers
7 Pedal adjustment
8 Air-conditioning control
9 Electric steering wheel adjustment and lock
10 Gear shift
11 Front and rear camera
12 Fuel pump
13 Electric seatbelt presenter
14 Keyless entry
15 Electronic parking brake





16 Rear and front radar sensors
17 Rear and front window wipers
18 Electric hatch flap
19 EMC filter applications
20 Electric sun visors of rear window and side doors
21 Antenna wavetrap
22 Electric sunroof
23 Steering angle sensor
24 Seat heating
25 Electric seat adjustment
26 Electric window
27 Airbag
28 Electric braking system (EBS)
29 Adaptive body control (ABC/DCC)
30 Anti-blocking system (ABS)

we drive solutions

Product versatility

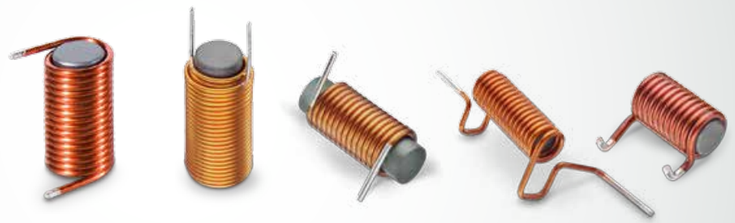
Customized components & special parts

15 million pcs.

Rod Core Chokes

450 million pcs.

225 million pcs.



Subsystems

30 million pcs.

SMD Components

140 million pcs.

On the way to 1 billion components

- iBE Group
- Büchele

Reference customers

BOSCH · Nidec · Valeo · PIERBURG · DELPHI · LEAR CORPORATION · HELLA · KATHREIN Automotive · MAGNETI MARELLI · brose Technik für Automobile · ECKERLE GRUPPE Immer eine Lösung · DENSO · Continental · Bühler Motor · ZF

Application fields

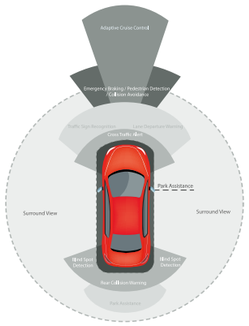
What drives us are the technical challenges of our customers…

Brush cards

Powertrain

Electrification of ancillary units

Hybrid and electrical drive



ADAS and comfort

WE drive solutions

Standard components mixed with customized products for: EMC-filter- and noise suppression applications, DC/DC converters, inverters

e-mobility hybrid electrical vehicles car connectivity car to car car to x 48V on-board power supply energy management recuperation charging technologies electrification

Key technologies and product validation

Winding:

- Winding of air coils
- Winding on ferrites and bobbins
- Round wire from ø 0.28 mm up to ø 4.0 mm
- Flat wire (vertical and horizontal)
- Different type of litz wire, self bonding wire
- Single and multilayer winding

Tin coating:

- duraTIN®: continuous tinning process (thick layer tinning)
- Dip tinning
- Lead free / leaded / custom solder material

Connection technology:

- Electric resistance welding of round wire, flat wire, litz wire
- Welding to contact pin, lead frame, carbon brush
- High-frequency soldering
- Spiroflame® soldering

Gluing:

- 1k and 2k gluing (epoxy / anaerob / thermal bonding)
- UV bonding
- Fully automated equipment (micro dispensing)

Testing:

- 100 % **EOL** test incl. binning (L / R_{DC} / etc.)
- 100 % **AOI** test incl. binning (dimensions / angle / tolerance / missing parts / burrs / cracks)
- Spot test (test gauge / destructive test / 3D measurement)

Printing / marking:

- Inkjet technology
- Pad printing
- Laser marking

Product validation*:

- Pre- and post electrical stress test
- High temperature exposure (storage)
- Temperature cycling
- Biased humidity
- Operational life
- External visual
- Physical dimensions
- Resistance to solvents and to soldering heat
- Mechanical and thermal shock
- Bump test
- Vibration
- ESD
- Solderability
- Electrical characterization
- Flammability
- Board flex
- Terminal strength

Technical equipment

Metallography (materials testing)

Reflow testing

© Helmut Fischer GmbH

Measurement of layer thickness

Tensile, compression, flexure, shear and torsion tests (environmental tests, validation of components)

Climate chamber and temperature-shock chamber for environmental testing

Impedance analyzer for measurement and characterization of components

*Customized testing conditions upon request

WE-SDT
Rod Core Chokes THT

170°C

AEC-Q

duraTIN®

Characteristics

- High current capability
- Very reliable mechanical design
- Very high saturation performance

Design kit, free samples and customized designs available upon request

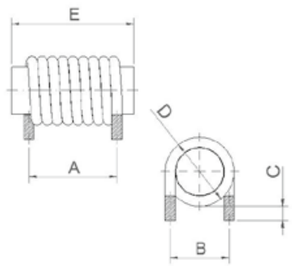
Electrical properties

Order Code	L_0 @ 20°C [µH]	R_{DC} @ 20°C [mΩ]	I_R max. [A]	I_{sat} typ. [A]	Operating temperature range [°C]
Test condition	100 kHz / 0.5 V		40 K self heating	I∆L/LI<10%	including self heating
WE750	2.0 ±20 %	11.0 ±20 %	2.5	5.0	
WE753	2.0 ±20 %	6.5 ±20 %	5.0	18.0	
WE756	2.0 ±20 %	3.8 ±20 %	10.0	32.0	
WE759	2.0 ±20 %	1.7 ±20 %	15.0	34.0	
WE751	6.0 ±20 %	22.0 ±20 %	2.5	6.5	
WE754	6.0 ±20 %	11.7 ±20 %	5.0	15.0	-40 to +170
WE757	6.0 ±20 %	15.3 ±20 %	10.0	19.0	
WE760	6.0 ±20 %	3.5 ±20 %	15.0	45.0	
WE752	10.0 ±20 %	33.0 ±20 %	2.5	7.0	
WE755	10.0 ±20 %	15.1 ±20 %	5.0	11.5	
WE758	10.0 ±20 %	8.8 ±20 %	10.0	13.0	
WE761	10.0 ±20 %	5.7 ±20 %	15.0	56.0	

Dimensions

Order Code	Number of turns	Wire Ø [mm]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
WE750	14.5 clockwise	Ø0.5	7.7 ±0.5	2.6 ±0.5	3 ±0.5	max. Ø3.2	12 ±0.3
WE751	21.5 clockwise	Ø0.5	11.5 ±0.5	3.6 ±0.5	3 ±0.5	max. Ø4.2	15 ±0.4
WE752	25.5 clockwise	Ø0.5	13.5 ±0.5	4.6 ±0.5	3 ±0.5	max. Ø5.2	18 ±0.5
WE753	11.5 clockwise	Ø0.8	9.7 ±0.5	4.9 ±0.5	3 ±0.5	max. Ø5.9	13.7 -0.6
WE754	17.5 clockwise	Ø0.8	14.8 ±0.5	5.94 ±0.5	3 ±0.5	max. Ø6.9	20 ±0.5
WE755	22.5 clockwise	Ø0.8	19 ±0.5	5.9 ±0.5	3 ±0.5	max. Ø6.9	22 ±0.5
WE756	10.5 clockwise	Ø1.12	12.2 ±0.5	6.3 ±0.5	3 ±0.5	max. Ø7.6	15 ±0.4
WE757	15.5 clockwise	Ø1.12	18 ±0.5	7.3 ±0.5	3 ±0.5	max. Ø8.6	25 ±0.7
WE758	21.5 clockwise	Ø1.12	24.9 ±0.5	7.3 ±0.5	3 ±0.5	max. Ø8.6	30 -0.6
WE759	9.5 clockwise	Ø1.8	17.5 ±0.5	8 ±0.5	3 ±0.5	max. Ø10	25 ±0.7
WE760	13.5 clockwise	Ø1.8	24.9 ±0.5	12 ±0.5	3 ±0.5	max. Ø14	30 -2
WE761	16.5 clockwise	Ø1.7	29.2 ±0.5	14 ±0.5	3 ±0.5	max. Ø16	30 ±0.8

Dimensions



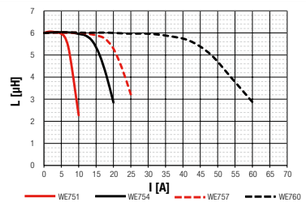
Design kit WE-SDT
Rod Core Chokes THT

Order code 744 002, Version 3.0

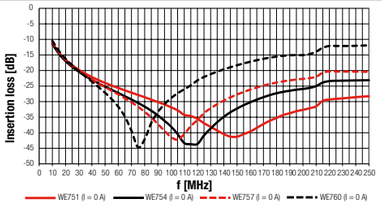
L vs. I WE750, WE753, WE756, WE759

Insertion loss WE750, WE753, WE756, WE759

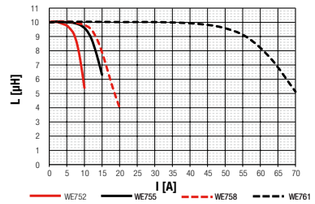
L vs. I WE751, WE754, WE757, WE760



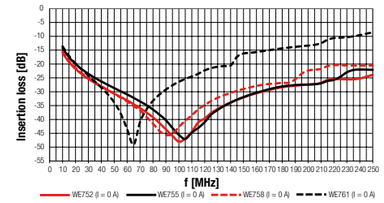
Insertion loss WE751, WE754, WE757, WE760



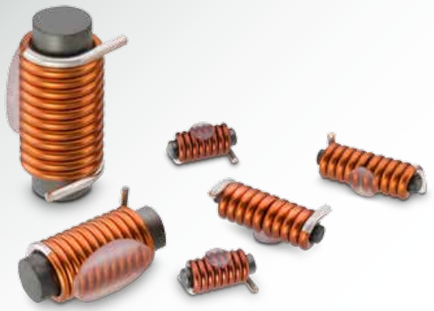
L vs. I WE752, WE755, WE758, WE761



Insertion loss WE752, WE755, WE758, WE761



WE-SDP
Rod Core Chokes SMD



150°C
AEC-Q
duraTIN®

Characteristics

- High current capability
- Very high saturation performance
- High insertion loss at FM band
- Broadband suppression
- Robust mechanical design
- Packaging: tape & reel / pick & place

Design kit, free samples and customized designs available upon request

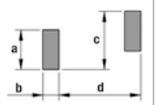
Electrical properties

Order code	L_0 @ 20°C [µH]	R_{DC} @ 20°C [mΩ]	I_R max. [A]	I_{sat} typ. [A]	Operating temperature range [°C]
Test condition	100 kHz / 0.5 V		40 K self heating	I∆L/LI<10%	including self heating
110 001 100	1.00 ±20%	2.0 max.	22.5	29.0	-40 to +150
110 001 150	1.41 ±20%	1.1 ±20%	18.5	14.0	
110 001 200	1.96 ±20%	2.4 ±15%	15.0	39.0	
110 001 270	2.72 ±20%	6.4 ±15%	10.0	18.0	
110 001 450	4.45 ±10%	3.8 ±10%	12.0	45.0	
110 001 101	10.40 ±20%	33.0 ±20%	2.5	7.5	

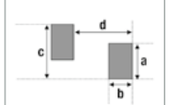
Dimensions 1

Order Code	a [mm]	b [mm]	c [mm]	d [mm]	Land pattern
110 001 100	9.2	3.4	14.2	11.6	2
110 001 150	9.0	4.0	12.0	21.2	2
110 001 200	8.0	3.0	12.0	15.5	1
110 001 270	8.5	3.0	11.6	13.1	2
110 001 450	10.5	3.5	17.0	18.6	1
110 001 101	5.0	2.0	8.6	14.0	1

Land pattern 1



Land pattern 2

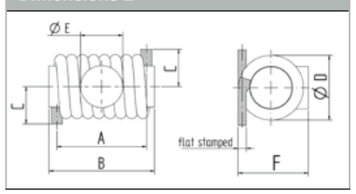


Dimensions 2

Order Code	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
110 001 100	11.6 ±0.5	15.0 ±0.4	5.0 ±0.7	Ø max. 7.1	Ø min. 4.0	max. 7.80
110 001 150	21.2 ±1.0	25.0 -0.1	4.4 ±0.5	Ø max. 9.2	Ø min. 5.0	max. 8.60
110 001 200	15.5 ±0.5	18.0 ±0.5	4.5 ±0.6	Ø max. 9.3	Ø min. 7.0	max. 10.00
110 001 270	13.1 ±0.5	15.0 ±0.4	4.5 ±0.6	Ø max. 6.5	Ø min. 3.0	max. 7.00
110 001 450	18.6 ±0.5	25.0 ±0.8	6.5 ±0.6	Ø max. 1.5	Ø min. 6x10*	max. 12.35
110 001 101	14.0 ±0.5	18.0 ±0.5	3.0 ±0.5	Ø max. 5.4	Ø min. 3.5	max. 5.80

*oval

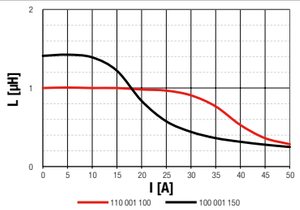
Dimensions 2



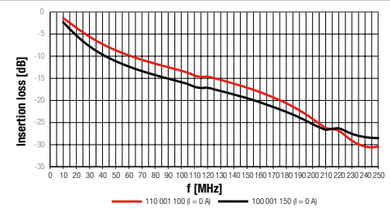
Design kit WE-SDP
Rod Core Chokes SMD

Order code 999 001, Version 3.0

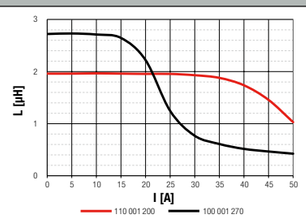
L vs. I 110 001 100 & 110 001 150



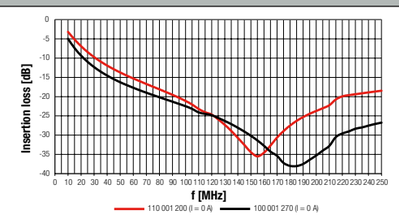
Insertion loss 110 001 100 & 110 001 150



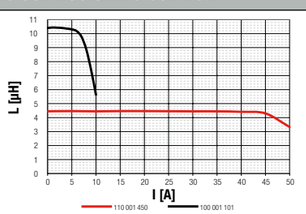
L vs. I 110 001 200 & 110 001 270



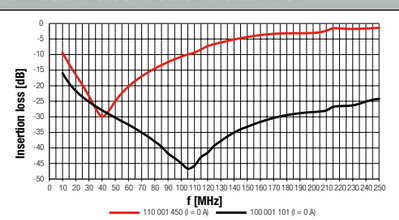
Insertion loss 110 001 200 & 110 001 270



L vs. I 110 001 450 & 110 001 101



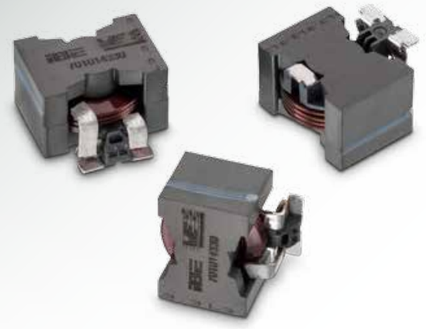
Insertion loss 110 001 450 & 110 001 101



WE-FLAT-I®
Flat Wire Power Inductors SMD

Design kit WE-FLAT-I®
Flat Wire Power Inductors SMD

WÜRTH ELEKTRONIK



150°C AEC-Q+ AOI REFLOW

Characteristics

- Flat wire design
- Magnetically shielded design
- High rated current up to 50A
- High saturation performance
- Excellent planarity
- Optimized for DC/DC converters
- Optimized for frequency range 0.2 MHz to 1 MHz
- Packaging: tray or tape & reel

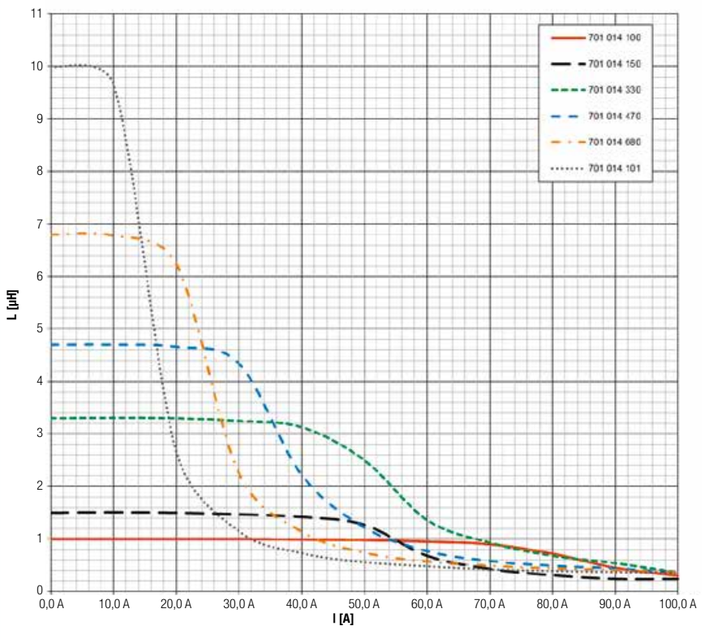
Design kit, free samples and customized designs available upon request

Order code 701 100, Version 1.0

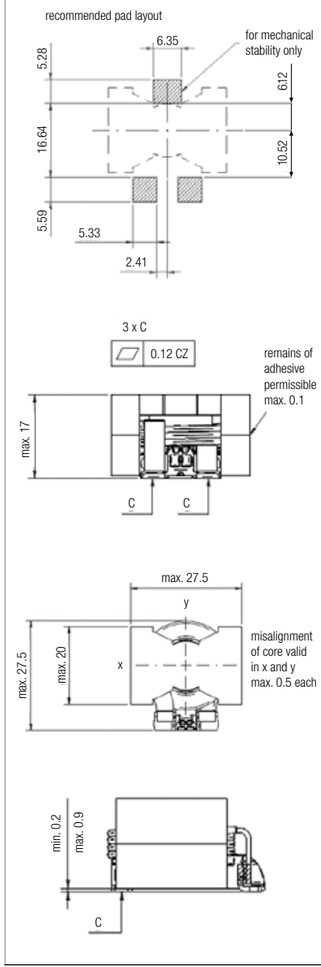
Electrical properties

Order Code	L_0 @ 20 °C [µH]	R_{DC} @ 20 °C [mΩ]	I_R max. [A]	I_{sat} typ. [A]	Operating temperature range [°C]
Test condition	100 kHz/0.5 V		40 K self heating	I∆L/LI<10 %	including self heating
701 014 100	1.0 ±25 %	0.6 ±10 %	50	65	-40 to +150
701 014 150	1.5 ±25 %	0.6 ±10 %	50	45	
701 014 330	3.3 ±15 %	1.1 ±10 %	35	40	
701 014 470	4.7 ±15 %	1.1 ±10 %	35	30	
701 014 680	6.8 ±15 %	1.1 ±10 %	35	20	
701 014 101	10.0 ±15 %	1.1 ±10 %	35	10	

L vs. I



Dimensions [mm]



WE-PD2
Power Inductors SMD

Characteristics

- Semi-shielded version
- Standard sizes
- High rated current up to 10.8A

Design kit and free samples available upon request

Electrical properties

Size	Order code	L [µH]	R_{DC} typ. [Ω]	R_{DC} max. [Ω]	I_R [A]	I_{sat} [A]
S	**732 773 010**	1.00 ±20%	0.014	0.049	4.00	5.72
	732 773 022	2.20 ±20%	0.034	0.071	2.50	3.38
	732 773 033	3.30 ±20%	0.041	0.086	2.00	2.88
	732 773 047	4.70 ±20%	0.059	0.110	1.82	2.46
	732 773 056	5.60 ±20%	0.069	0.126	1.58	2.43
	732 773 068	6.80 ±20%	0.076	0.131	1.54	2.10
	732 773 100	10.00 ±20%	0.118	0.182	1.45	1.74
	732 773 150	15.00 ±20%	0.204	0.235	1.20	1.46
	732 773 220	22.00 ±20%	0.261	0.370	1.00	1.22
	732 773 330	33.00 ±10%	0.370	0.540	0.86	0.90
	732 773 470	47.00 ±10%	0.523	0.844	0.68	0.77
	732 773 560	56.00 ±10%	0.714	0.937	0.64	0.75
	732 773 680	68.00 ±10%	0.754	1.117	0.56	0.68
M	**732 774 003**	0.33 ±20%	0.006	0.008	10.80	15.30
	732 774 022	2.20 ±20%	0.026	0.041	4.60	8.20
	732 774 027	2.70 ±20%	0.032	0.045	4.00	8.00
	732 774 047	4.70 ±20%	0.056	0.071	3.00	5.50
	732 774 068	6.80 ±20%	0.071	0.082	2.40	5.00
	732 774 100	10.00 ±20%	0.078	0.100	2.20	2.16
	732 774 150	15.00 ±20%	0.089	0.140	1.53	1.90
	732 774 220	22.00 ±20%	0.109	0.180	1.28	1.53
	732 774 270	27.00 ±20%	0.133	0.200	1.19	1.40
	732 774 330	33.00 ±20%	0.150	0.230	1.09	1.17
	732 774 470	47.00 ±20%	0.260	0.370	0.86	1.00
	732 774 680	68.00 ±20%	0.313	0.460	0.64	0.86
	732 774 101	100.00 ±20%	0.510	0.650	0.57	0.68
	732 774 151	150.00 ±20%	0.720	1.100	0.46	0.54
	732 774 221	220.00 ±10%	0.945	1.570	0.42	0.47
L	**732 775 033**	3.30 ±20%	0.012	0.018	4.90	4.90
	732 775 068	6.80 ±20%	0.022	0.026	3.70	3.80
	732 775 100	10.00 ±10%	0.044	0.070	2.30	2.95
	732 775 180	18.00 ±10%	0.053	0.100	1.89	2.14
	732 775 220	22.00 ±10%	0.065	0.110	1.76	1.81
	732 775 330	33.00 ±10%	0.088	0.130	1.35	1.47
	732 775 470	47.00 ±10%	0.134	0.180	1.17	1.24
	732 775 680	68.00 ±10%	0.218	0.280	0.99	1.05
	732 775 820	82.00 ±10%	0.248	0.370	0.90	0.95
	732 775 101	100.00 ±10%	0.208	0.430	0.77	0.86
	732 775 121	120.00 ±10%	0.308	0.470	0.67	0.81
	732 775 151	150.00 ±10%	0.467	0.640	0.60	0.71
	732 775 221	220.00 ±10%	0.614	0.960	0.51	0.56
	732 775 331	330.00 ±10%	0.810	1.260	0.43	0.48
	732 775 471	470.00 ±10%	1.370	1.960	0.36	0.38

Electrical properties

Size	Order code	L [µH]	R_{DC} typ. [Ω]	R_{DC} max. [Ω]	I_R [A]	I_{sat} [A]
XL	**732 776 033**	3.3 ±20%	0.009	0.015	6.00	7.00
	732 776 068	6.8 ±20%	0.021	0.025	3.60	4.90
	732 776 100	10.0 ±20%	0.028	0.060	2.98	3.24
	732 776 150	15.0 ±20%	0.034	0.080	2.47	2.88
	732 776 220	22.0 ±20%	0.051	0.100	2.04	2.07
	732 776 270	27.0 ±20%	0.063	0.110	1.95	1.98
	732 776 330	33.0 ±20%	0.083	0.120	1.78	1.89
	732 776 470	47.0 ±10%	0.095	0.170	1.45	1.62
	732 776 680	68.0 ±10%	0.138	0.220	1.19	1.49
	732 776 101	100.0 ±10%	0.200	0.350	1.02	1.10
	732 776 151	150.0 ±10%	0.300	0.470	0.81	0.90
	732 776 221	220.0 ±10%	0.451	0.730	0.67	0.77
	732 776 331	330.0 ±10%	0.750	1.150	0.52	0.59
	732 776 471	470.0 ±10%	0.969	1.480	0.44	0.50
XXL	**732 777 050**	5.6 ±20%	0.014	0.018	7.70	8.50
	732 777 060	6.5 ±20%	0.016	0.020	7.20	8.00
	732 777 100	10.0 ±20%	0.019	0.023	6.70	7.20
	732 777 150	15.0 ±20%	0.021	0.026	6.40	5.70
	732 777 220	22.0 ±20%	0.037	0.045	4.30	4.50
	732 777 330	33.0 ±20%	0.048	0.058	3.45	3.60
	732 777 470	47.0 ±10%	0.072	0.088	3.00	3.20
	732 777 680	68.0 ±10%	0.088	0.106	2.80	2.75
	732 777 101	100.0 ±10%	0.140	0.170	2.30	2,20
	732 777 151	150.0 ±10%	0.190	0.210	1.90	1.80
	732 777 221	220.0 ±10%	0.263	0.320	1.40	1.45

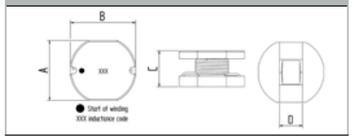
Design kit WE-PD2
Power Inductors SMD

Order code 732 100, Version 3.0

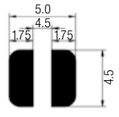
Dimensions

Size	A [mm]	B [mm]	C [mm]	D [mm]
S	4.0 ±0.3	4.5 ±0.3	3.2 ±0.30	1.0
M	5.2 ±0.3	5.8 ±0.3	4.5 ±0.35	2.0
L	7.0 ±0.3	7.8 ±0.3	5.0 ±0.50	3.0
XL	9.0 ±0.4	10.0 ±0.4	5.4 ±0.50	3.5
XXL	11.0 ±0.4	11.7 ±0.5	7.6 ±0.50	3.5

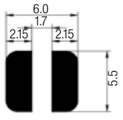
Dimensions



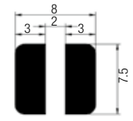
Land pattern S [mm]



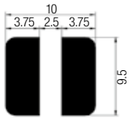
Land pattern M [mm]



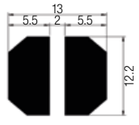
Land pattern L [mm]



Land pattern XL [mm]



Land pattern XXL [mm]



WE-MASH-I
Molded Power Inductors SMD

Design kit WE-MASH-I
Molded Power Inductors SMD

WÜRTH ELEKTRONIK

NEW | 125°C | AEC-Q | AOI | REFLOW

Characteristics

- Standard sizes: 7 x 7 / 10 x 10 / 13 x 13
- Magnetically capsuled design for low magnetic stray field
- High rated current
- High saturation performance
- Inductance value stays stable troughout operating temperature range
- Robust mechanical design
- Packaging: tape & reel

Design kit and free samples available upon request

Order code 831 100, Version 1.0

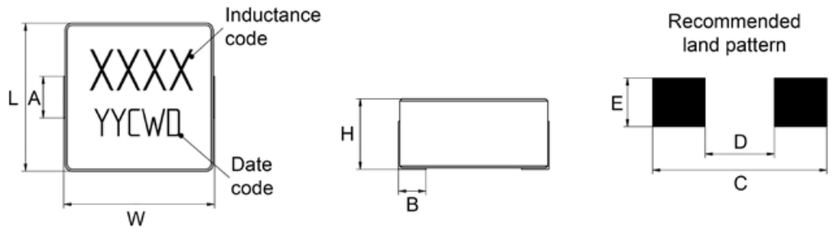
Electrical properties

Size	Order code	L_0 @ 20°C [µH]	R_{DC} @ 20°C [mΩ]	I_R max. [A]	I_{sat} typ. [A]	Operating temperature range [°C]
	Test condition	100 kHz / 0.1 V		40 K self heating	I∆L/LI<20%	including self heating
7 x 7	831 530 470	0.47 ±20%	3.7	15.0	20.0	-40 to +125
	831 530 680	0.68 ±20%	5.5	15.0	20.0	
	831 531 000	1.00 ±20%	8.0	12.0	18.0	
	831 532 200	2.20 ±20%	15.3	8.0	14.0	
	831 533 300	3.30 ±20%	30.0	6.0	11.0	
	831 534 700	4.70 ±20%	41.0	5.5	8.0	
	831 536 800	6.80 ±20%	53.8	4.5	6.5	
	831 538 200	8.20 ±20%	70.0	4.0	6.0	
	831 531 001	10.00 ±20%	80.0	3.5	5.0	
	831 531 501	15.00 ±20%	120.0	3.0	4.5	
10 x 10	831 651 000	1.00 ±20%	4.0	20.0	30.0	
	831 653 300	3.30 ±20%	13.0	11.5	22.0	
	831 654 700	4.70 ±20%	17.0	10.0	19.5	
	831 651 001	10.00 ±20%	31.1	6.3	15.0	
	831 651 501	15.00 ±20%	67.0	5.0	13.0	
13 x 13	831 750 220	0.22 ±20%	1.4	30.0	60.0	
	831 751 000	1.00 ±20%	2.9	21.0	51.0	
	831 751 500	1.50 ±10%	4.1	20.0	45.0	
	831 752 200	2.20 ±20%	6.0	16.0	35.0	
	831 753 300	3.30 ±20%	9.2	14.0	30.0	
	831 754 700	4.70 ±20%	12.0	11.0	27.0	
	831 756 800	6.80 ±20%	18.5	9.0	20.0	
	831 758 200	8.20 ±10%	22.5	8.5	18.0	
	831 751 001	10.00 ±20%	34.0	7.0	16.0	
	831 751 501	15.00 ±20%	53.0	6.0	15.0	

Dimensions

Size	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	H [mm]	L [mm]	W [mm]
7 x 7	3.0	2.7	8.0	3.8	3.5	3,0	6.5	7.0
10 x 10	3.0	2.2	12.6	5.0	3.5	5,0	10.0	10.7
13 x 13	3.0 / 4.0	2.2	14.8	8.0	4.5	5.0	12.7	13.5

Dimensions



WE-HCT
High Current Inductors THT

150°C

AEC-Q

Characteristics

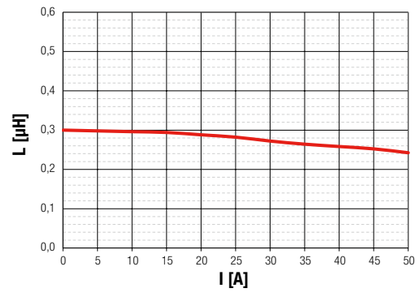
- Magnetically shielded design
- Excellent saturation characteristics
- High quality core material with excellent aging characteristics
- Inductance value stable throughout operating temperature range
- Packaging: tape & reel

Free samples and customized designs available upon request

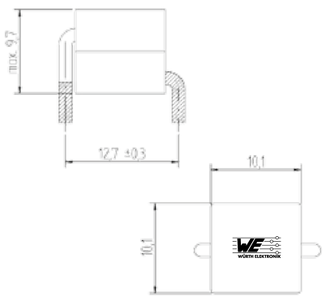
Electrical properties

Order code	L_0 @ 20°C [µH]	R_{DC} @ 20°C [mΩ]	I_R max. [A]	I_{sat} typ. [A]	Operating temperature range [°C]
Test condition	100 kHz / 0.5 V		40 K self heating	I∆L/LI<10%	including self heating
WW006	0.30 $^{-15\text{ to }+25\%}$	0.440 $^{\pm7\%}$	30	27	-40 to +150
WW005	0.50 $^{\pm20\%}$	0.875 $^{\pm8\%}$	23	25	

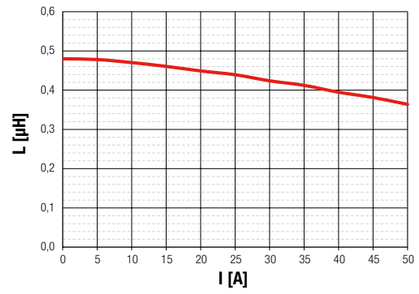
L vs. I WW006



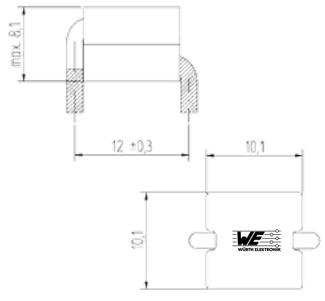
Dimensions WW006 [mm]



L vs. I WW005



Dimensions WW005 [mm]



WE-CBA
Chip Beads Automotive

125°C

AEC-Q

REFLOW

Characteristics

- Reliable Ni-Sn electrodes
- Perfect as data line filter and for decoupling of distribution voltage
- High rated current up to 6A

Design kit and free samples available upon request

Electrical properties

Size	Order code	Impedance IZI @ 100 MHz [Ω] ±25%	R_{DC} max. [Ω]	I_R max. [mA]	Type
0402	**326 342 070**	70	0.090	1000	High Current
	326 142 110	100	0.300	300	Wide Band
	326 142 221	220	0.300	400	Wide Band
	326 142 151	510	0.800	200	Wide Band
	326 142 601	600	0.800	200	Wide Band
	326 242 210	1000	1.000	200	Wide Band
0603	**326 263 062**	62	0.150	500	High Current
	326 363 062	62	0.040	2500	High Speed
	326 263 110	100	0.200	200	High Speed
	326 163 112	120	0.200	500	Wide Band
	326 163 118	180	0.200	500	Wide Band
	326 263 133	330	0.250	200	High Speed
	326 163 151	510	0.350	200	Wide Band
	326 363 160	600	0.200	1000	High Current
	326 163 210	1000	0.500	200	Wide Band
	326 163 218	1800	0.750	100	Wide Band
0805	**326 385 020**	20	0.008	5000	High Current
	326 385 027	27	0.020	3000	High Current
	326 385 068	68	0.025	3000	High Current
	326 385 091	91	0.100	1000	High Current
	326 385 112	120	0.035	2500	High Current
	326 385 120	200	0.050	2000	High Current
	326 385 156	560	0.100	1500	High Current
	326 185 210	1000	0.450	200	Wide Band
	326 385 211	1100	0.300	800	High Current
	326 185 220	2000	0.450	200	Wide Band
1206	**326 396 082**	82	0.025	3000	High Current
	326 296 130	300	0.100	300	High Speed
	326 396 162	620	0.100	1500	High Current
	326 396 210	1000	0.300	1000	High Current
1806	**326 306 056**	56	0.008	5000	High Current
	326 306 060	60	0.010	6000	High Current
	326 306 082	82	0.030	3000	High Current
	326 306 210	1000	0.090	1500	High Current

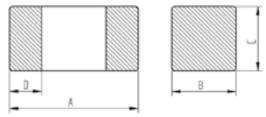
Design kit WE-CBA
Chip Beads Automotive

Order code 326 100, Version 3.0

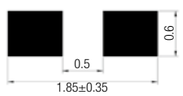
Dimensions

Size	A [mm]	B [mm]	C [mm]	D [mm]
0402	1.00 ±0.05	0.50 ±0.05	0.50 ±0.05	0.20 ±0.10
0603	1.60 ±0.15	0.80 ±0.15	0.80 ±0.15	0.40 ±0.20
0805	2.00 ±0.20	1.25 ±0.20	0.90 ±0.20	0.50 ±0.30
1206	3.20 ±0.20	1.60 ±0.20	1.10 ±0.20	0.70 ±0.30
1806	4.50 ±0.20	1.60 ±0.20	1.60 ±0.20	0.80 ±0.30

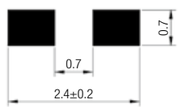
Dimensions



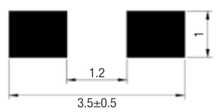
Land pattern 0402 [mm]



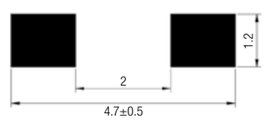
Land pattern 0603 [mm]



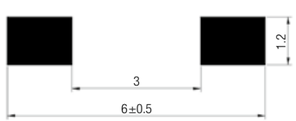
Land pattern 0805 [mm]



Land pattern 1206 [mm]



Land pattern 1806 [mm]

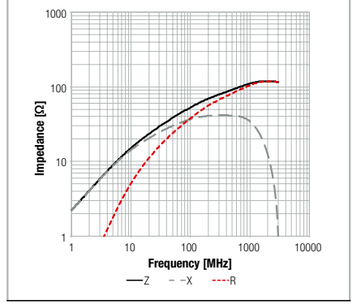


Size code conversion table inch/mm

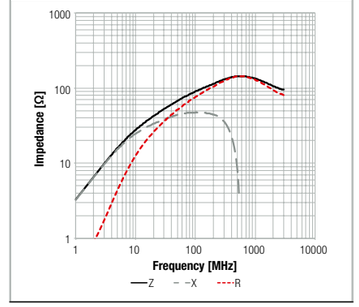
inch	mm
0402	1005
0603	1608
0805	2012
1206	3216
1806	4516

WE-CBA
Impedance curves

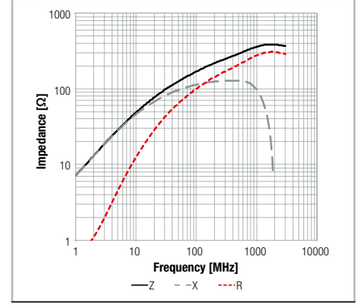
326 342 070 — **0402**



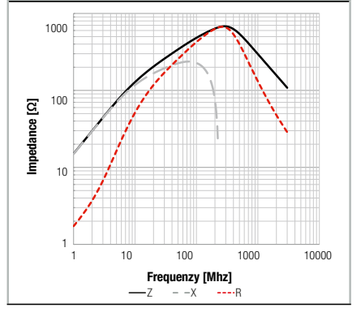
326 142 110 — **0402**



326 142 221 — **0402**



326 142 151 — **0402**



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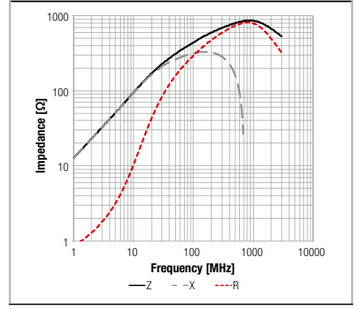

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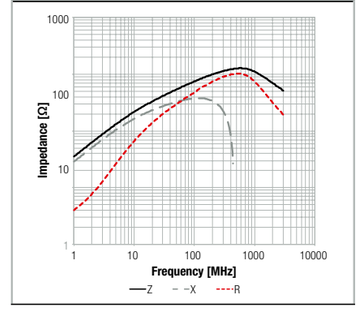
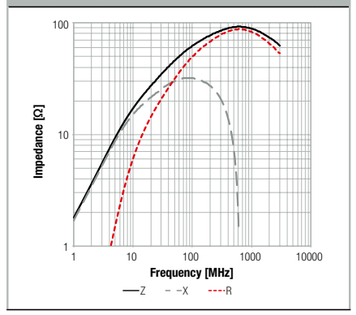
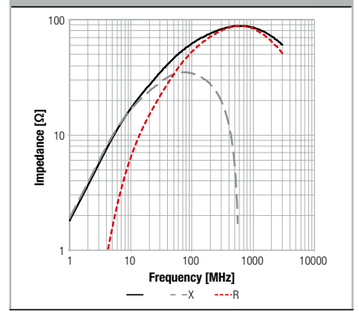


326 263 062 — **0603**



326 363 062 — **0603**



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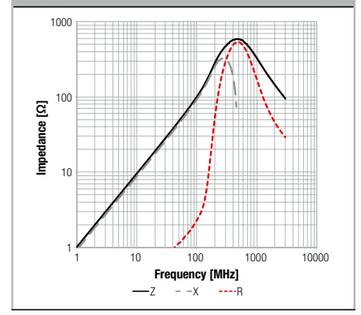

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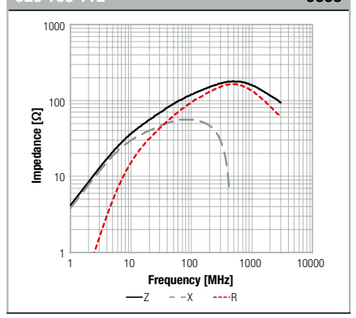

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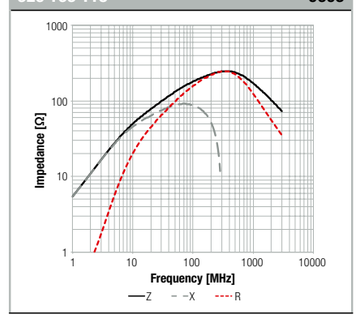

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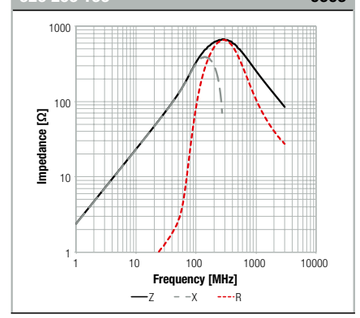
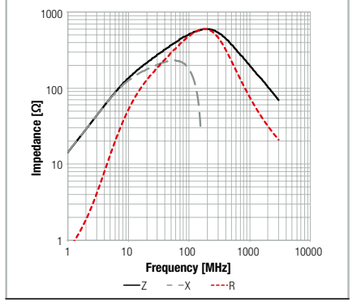


WE-CBA
Impedance curves

WÜRTH ELEKTRONIK

326 163 151 0603



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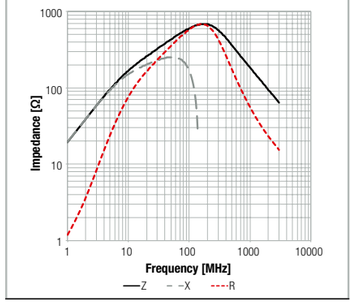

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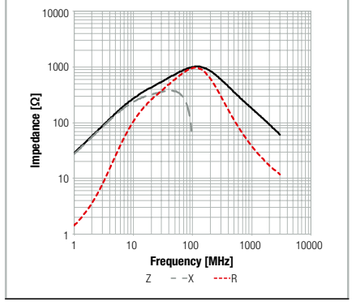

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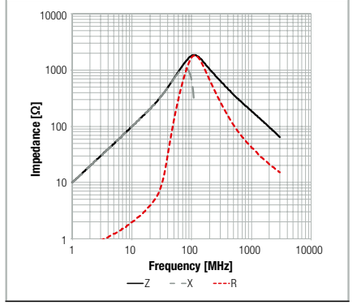

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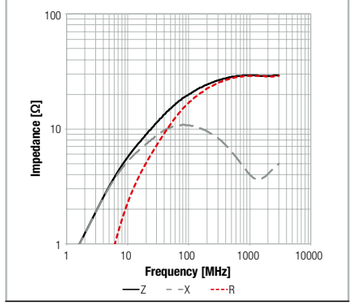

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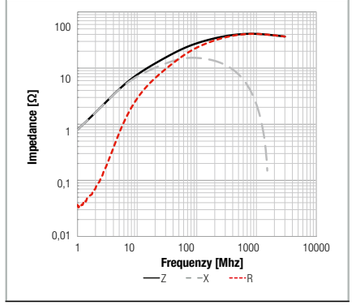

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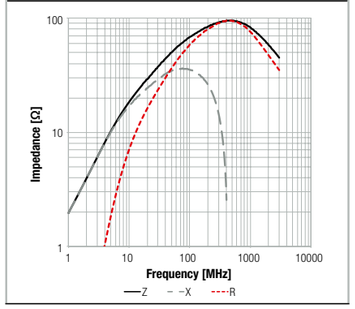

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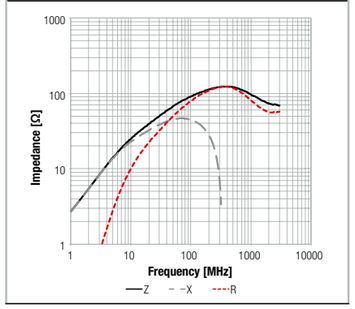

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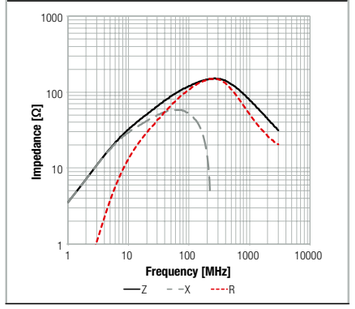

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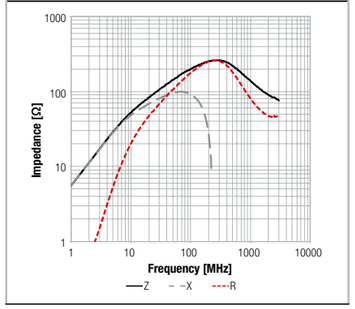

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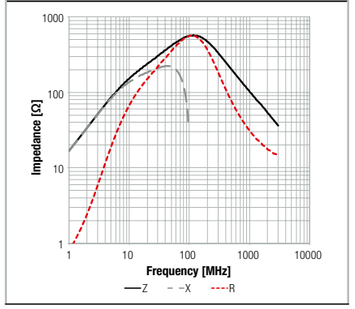

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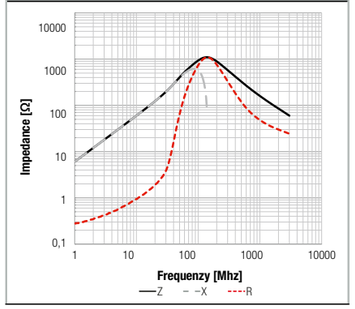

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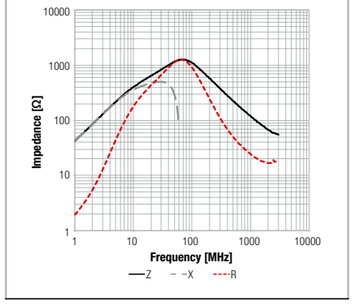

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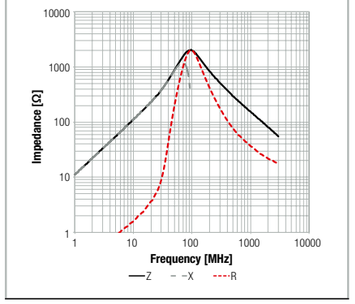

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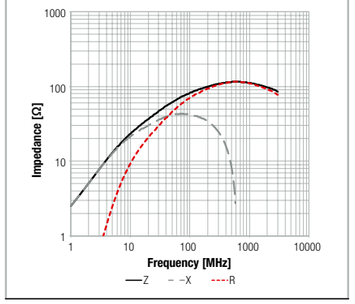

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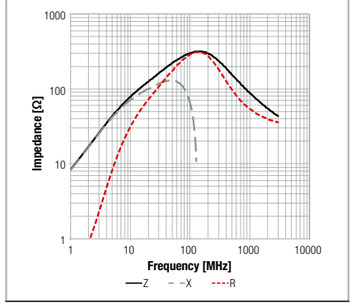

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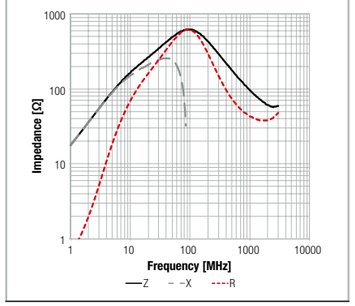

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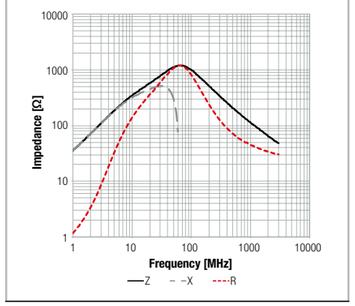

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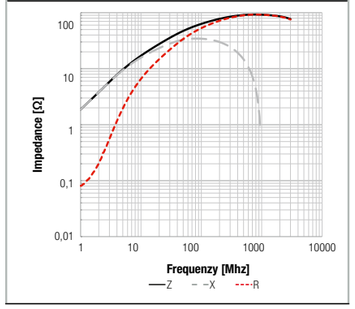

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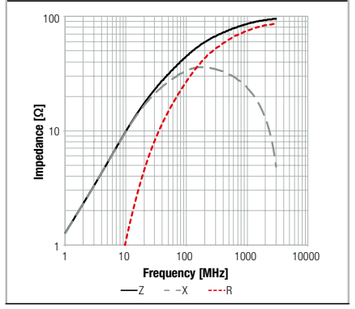

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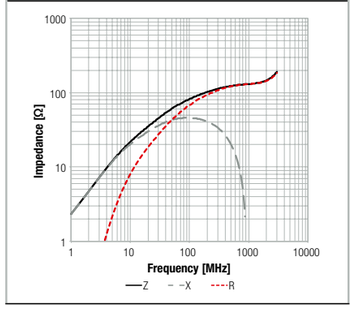

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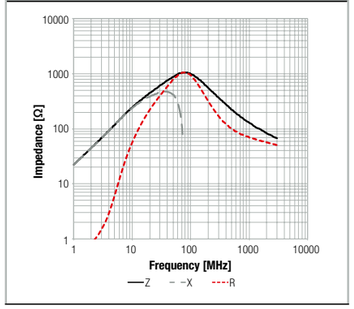


WE-BAL
Balun Cores

85°C

AEC-Q

Characteristics

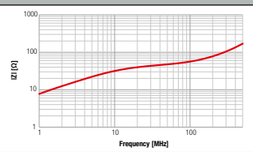
- NiZn Ferrite for a broadband frequency range
- Different dimensions available ex stock

Design kit, free samples and customized designs available upon request

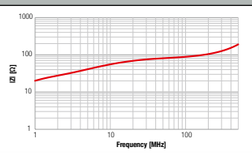
Electrical parameter

Parameter	Width W [mm]	Length L [mm]	Height H [mm]	Diameter D [mm]	Spacing P [mm]	Shape	Impedance |Z| @ 23 °C [Ω]	Tolerance	Impedance |Z| @ 23 °C [Ω]	Tolerance	Resistivity r @ 23 °C [Ωcm]	Operating temperature range [°C]
Test condition							Z @ 25 MHz		Z @ 100 MHz			
FDL2x5.A WE40	2.0	5.0	2.8	1.1	2.4	A	30	min.	40	min.	≥10 ^{8}	-40 to +85
FDL4x7.1.A WE40	4.0	7.1	8.0	2.1	3.1	A	50		60			
FDL5.35x9.37.B WE40	5.4	9.4	8.0	2.6	5.2	B	70		85			
FDL4.8x11.B WE40	4.8	11.0	7.2	3.1	4.5	B	49		60			
FDL5x8.A WE40	5.0	8.0	8.0	2.1	4.0	A	70		85			
FDL4.5x8.5.A WE40	4.5	8.5	8.0	2.1	4.0	A	74		87			
FDL10x20.A WE40	10.0	20.0	15.0	5.1	10.0	A	120		145			

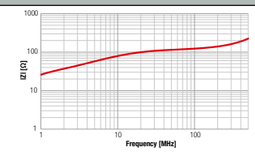
Impedance FDL 2x5.A WE40



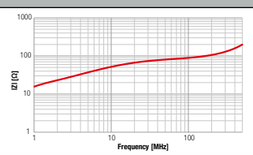
Impedance FDL 4x7.1.A WE40



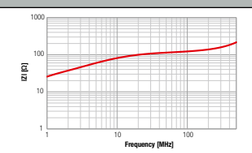
Impedance FDL 5.35x9.37.B WE40



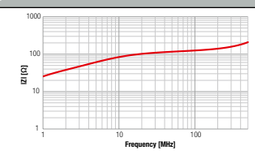
Impedance FDL 4.8x11.B WE40



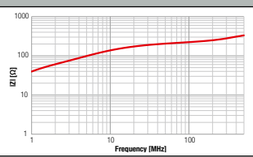
Impedance FDL 5x8.A WE40



Impedance FDL 4.5x8.5.A WE40



Impedance FDL 10x20.A WE40



WE-CYL
Cylinder Cores

85°C

AEC-Q

Characteristics

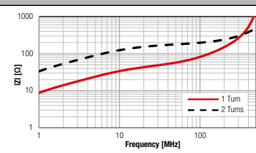
- NiZn Ferrite for a broadband frequency range
- Different dimensions available ex stock

Design kit, free samples and customized designs available upon request

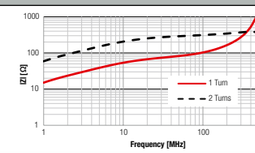
Electrical parameter

Parameter	Outer ø O.D. [mm]	Inner ø I.D. [mm]	Length L [mm]	Impedance |Z| @ 23 °C [Ω]	Tolerance	Impedance |Z| @ 23 °C [Ω]	Tolerance	Impedance |Z| @ 23 °C [Ω]	Tolerance	Impedance |Z| @ 23 °C [Ω]	Tolerance	Operating temperature range [°C]
Test condition				Z @ 25 MHz 1 Turn		Z @ 100 MHz 1 Turn		Z @ 25 MHz 2 Turns		Z @ 100 MHz 2 Turns		
FT3.5x4.B WE40	3.5	1.2	4.0	46	typ.	81	typ.	160.00	typ.	198.00	typ.	-40 to +85
FT5x6.4.B WE40	5.0	1.5	6.4	71		104		267.01		319.95		
FT7.8x12.7.A WE40	7.8	4.0	12.7	77		110		291.00		348.00		
FT10.5x20.A WE40	10.5	5.5	20.0	116		153		458.00		520.00		
FT14.3x28.6.A WE40	14.3	6.4	28.6	200		254		819.00		779.95		
FT17.4x28.6.A WE40	17.4	9.5	28.6	153		201		614.00		690.00		
FT26x28.6.A WE40	26.0	13.0	28.6	176		234		715.00		784.00		

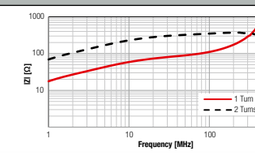
Impedance FT 3.5x4.B WE40



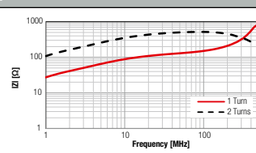
Impedance FT 5x6.4.B WE40



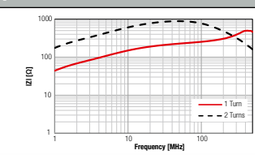
Impedance FT 7.8x12.7.A WE40



Impedance FT 10.5x20.A WE40



Impedance FT 14.3x28.6.A WE40



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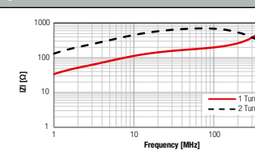
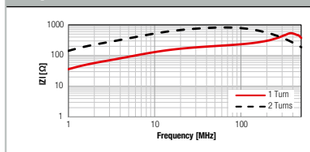


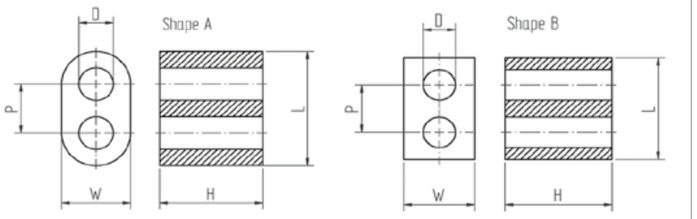
Impedance FT 26x28.6.A WE40



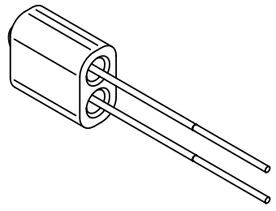
Design kit WE-CORE
Balun and Cylinder Cores

Order code 999 002, Version 2.0

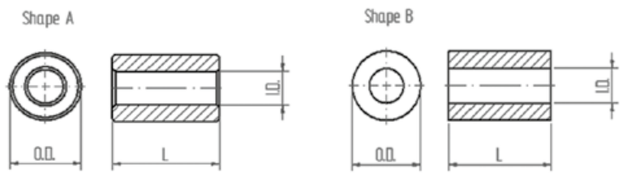
Dimensions Balun Cores



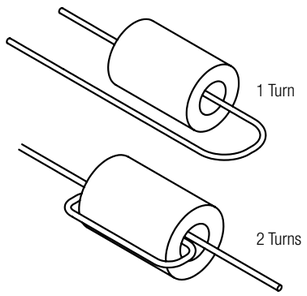
Test winding Balun Cores



Dimensions Cylinder Cores



Test winding Cylinder Cores



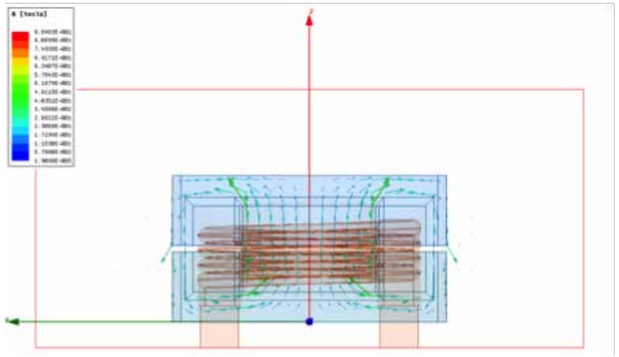
iNNOVATIONS ARE BORN AUTOMOTIVE & ENGINEERED BY US.

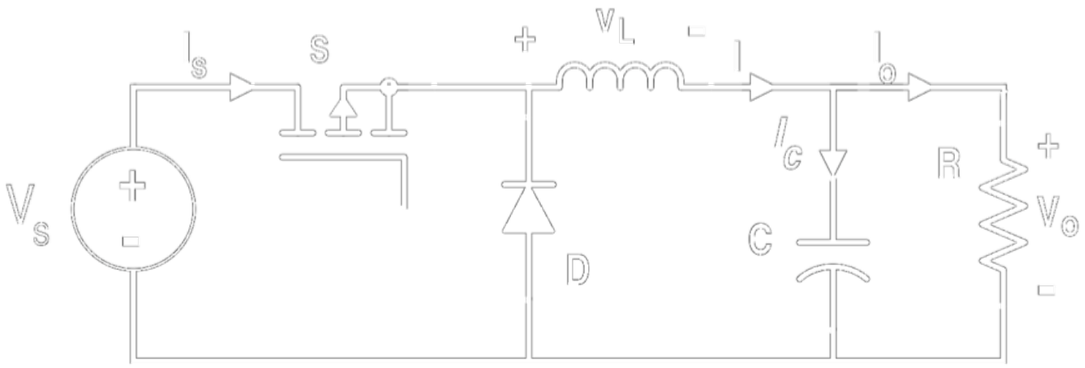
iBE

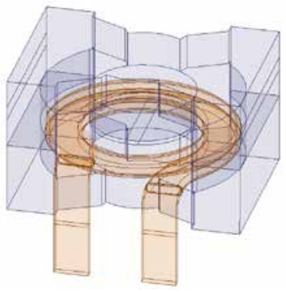
Electromagnetic simulation

Design support up to final component

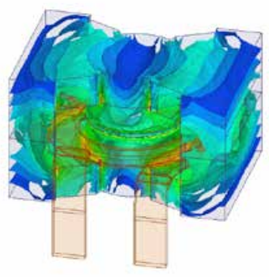
ANSYS®

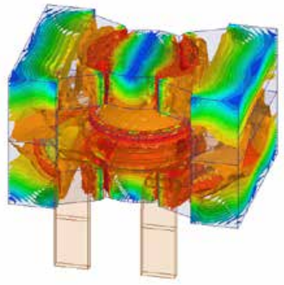






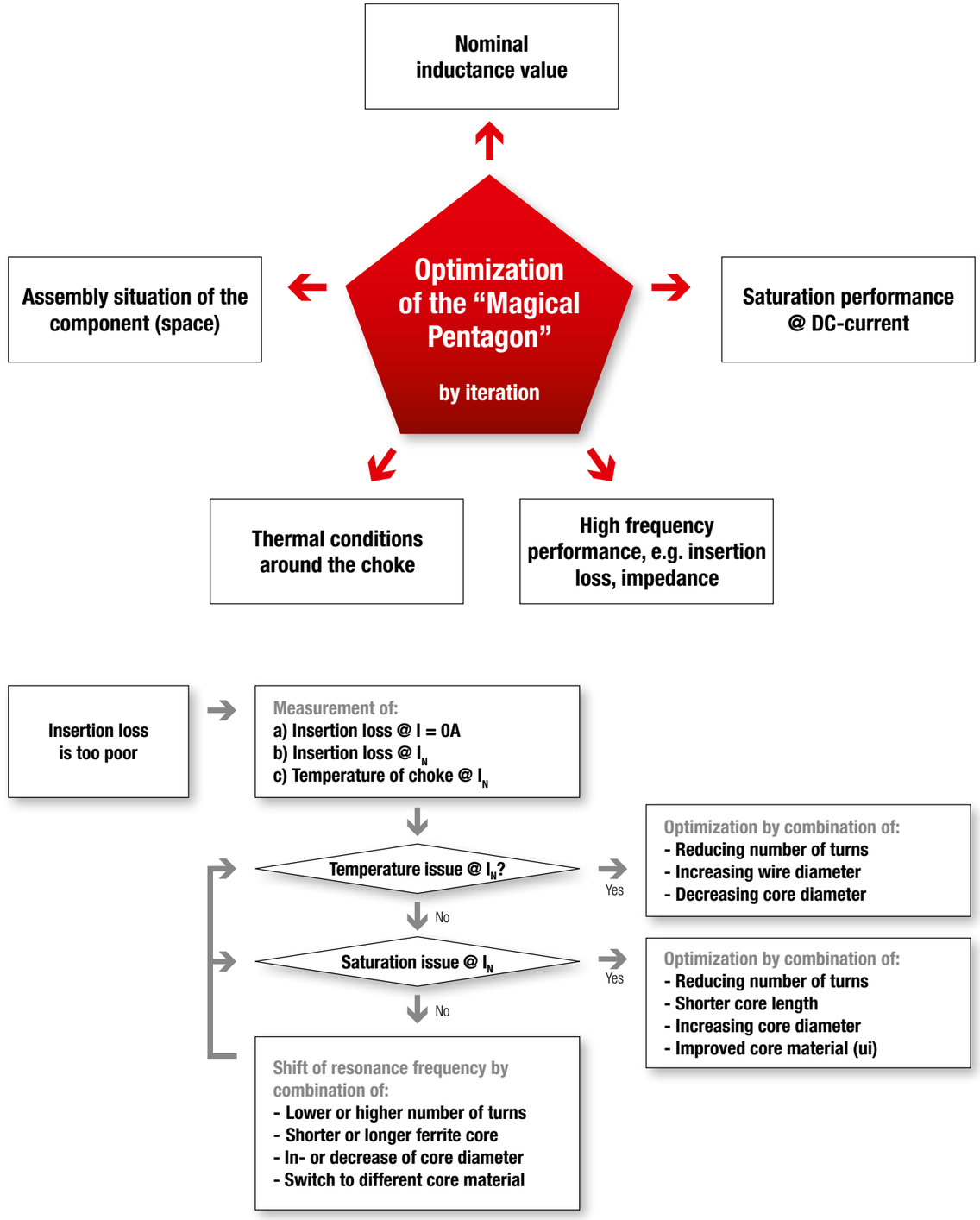
B-field with 30A





B-field with 80A

Design tips – important mechanical & electrical parameters



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Certificates

- ISO / TS 16949 since July 2004
- ISO 14001 since September 2007
- AEO-F and Known Consignor since 2015

CERTIFICADO ■ CERTIFICAT

Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH
certifies that

Würth Elektronik iBE GmbH
Gewerbepark 8
94136 Thyrnau
Germany

has established and applies
a Quality Management System for

Manufacturing of
inductive components
(without Product Design as per Chapter 7.3).

An audit was performed and has furnished proof
that the requirements according to

ISO/TS 16949:2009
Third Edition 2009-06-15

are fulfilled.

Issue date: **2016-08-01**
Expiry date: **2018-09-14**
Certificate Registration No.: **12 111 52452/01 TMS**
IATF Certificate No.: **0244389**

Part of the certificate is an appendix.

Product Compliance Management
Munich, 2016-08-01

Page 1 of 2

H • Zertifizierungsstelle • Ridlerstraße 65 • 80339 München • Germany
ww.tuev-sued.de/certificate-validity-check

TÜV®

SGS

Certificate IATF 0233993
Certificate DE10/81826864

The management system of

Erwin Büchele GmbH

Hauptstr. 6,
73730 Esslingen, Germany

has been assessed and certified as meeting the requirements of

ISO/TS 16949:2009

Edition 3
For the following activities

Manufacturing of inductive components

EXCLUSIONS: 7.3 product Design

3 Year certification is valid from 12 March 2016 until 14 September 2018
and remains valid subject to satisfactory surveillance audits
Version no. 0 4 Current version updated 21 March 201

Authorise

Veto Power

Contracted Office: SGS United Kingdom Ltd, Station Road, Oldbury, West Midla
4LN, UK.

E-mail: Neil.Hall@sgs.co

TS169

SYSTEM CERTIFICATION ISO/TS 16949 SGS

SGS SGS SGS

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Certificate

Standard **DIN EN ISO 14001:2009**

Certificate Registr. No. 01 104 079663

TÜV Rheinland Cert GmbH certifies:

Certificate Holder:

Würth Elektronik iBE GmbH
Gewerbepark 8 • D - 94136 Thyrnau

including the branch offices

Würth Elektronik iBE BG EOOD
Region Plovdiv • BG - 4130 Belozem

Würth Elektronik iBE CZ s.r.o.
U Vodárny 25/1 • CZ - 370 01 České Budějovice

Scope:

Manufacturing of inductive components
for the automotive industry
- without product design and development -

An audit was performed, Report No. 079663.
Proof has been furnished that the requirements
according to DIN EN ISO 14001:2009 are fulfilled.
The due date for all future audits is 22-10 (dd.mm).

Validity:

The certificate is valid from 2013-12-10 until 2016-12-09.
First certification 2007

2013-11-13

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

DAkkS

Europäische Gemeinschaft

AEO - Zertifikat

AEO-Zertifikat

1. Inhaber des AEO-Zertifikats	DE AEOF 121378 (Nummer des Zertifikats)
Würth Elektronik iBE GmbH EORI-Nummer: DE 4241126 Nr. der amtl. Eintragung: HRB4528 USt-IdNr(n).: DE 249980653	2. Erteilende Behörde Hauptzollamt Landshut Seligenthaler Straße 84034 Landshut

Der in Feld 1 genannte Inhaber ist

Zugelassener Wirtschaftsbeteiligter

☐ - Zollrechtliche Vereinfachungen
☐ - Sicherheit
☒ - Zollrechtliche Vereinfachungen / Sicherheit

3. Tag, ab dem das Zertifikat wirksam ist:

17.11.2015

iBE

WÜRTH ELEKTRONIK

Automotive solutions

DIE NECKARPRINZEN 9999600.1116.1.5000