Coupled Inductors

Product Overview

High Coupling

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-MCRI	1090	11 x 10 x 9.0	1 – 47	17 – 2.3	43.5 – 6	4.5 – 260	60

High Voltage

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{RMS})
WE-CPIB HV	4828	5.0 x 5.0 x 3.0	4.7 – 47	1.45 – 0.55	0.73 – 2.2	105 – 800	250
WE-TDC HV	8018	8.0 x 8.0 x 1.8	5.6 – 22	1.4 – 0.75	2 – 1	190 – 700	250
	8038	8.0 x 8.0 x 3.8	4.7 – 33	2.45 – 0.85	4.7 – 1.85	85 – 640	
WE-DPC HV	5030	5.2 x 5.2 x 3.1	1 x 47	2.9 – 0.6	5 – 0.7	32 – 840	250

Various Turn Ratio 1:n

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-MTCI	5030	5.2 x 5.2 x 3.1	10 - 33	0.95 – 0.45	1.5 – 0.75	349 - 3758	80
WE-EHPI	5838	8.0 x 8.0 x 1.8	7 - 70000	1.9 - 1.5	1.3 - 0.7	0.085 – 205	80

Low Profile

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-TDC	8018	8.0 x 8.0 x 1.8	0.33 – 22	4.0 – 0.7	9.0 – 1.1	0.0111 – 0.048	80
	8038	8.0 x 8.0 x 3.8	0.39 – 22	4.5 – 1.0	14.0 – 1.8	0.0116 – 0.228	

High Current

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-CFWI	1310	15.5 x 13.2 x 10.5	0.8 – 4.4	28 – 12	62 – 24	1.6 – 9.6	80
	1312	15.5 x 13.2 x 12.5	6.8 – 10	14 – 13	16 – 13.5	11.3 – 13.9	
	1813	21.0 x 18.5 x 13.5	6.8 – 10	13.5 – 11.5	26 – 22	6.1 – 11	

Toroidal Core

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-DCT	SH	23 x 18.5 x 11.5	0.091–100	14.5 – 1.1	120 – 1.3	2.8 – 140	80

General Purpose Coupled Inductors

Series	Size	L x W x H (mm)	L (µH)	I_R (A)	I_{SAT} (A)	$R_{DC\,typ}$ (mΩ)	U_R (V_{DC})
WE-DD	7332	7.3 x 7.3 x 4.0	1.3 – 100	4.4 – 0.3	6.3 – 0.7	0.027 – 1.73	80
	7345	7.3 x 7.3 x 4.8	1.8 – 100	4.7 – 0.65	6.5 – 0.9	0.025 – 1.3	
	1260	12.5 x 12.5 x 6.5	1.5 – 100	5.85 – 1.2	14.0 – 1.7	0.012 – 0.293	
	1280	12.5 x 12.5 x 8.5	1.5 – 470	6.25 – 0.7	18.0 – 0.9	0.011 – 1	
	1210	12.5 x 12.5 x 10.5	2.2 – 47	4.1 – 1.9	19.0 – 3.6	0.015 – 0.13	
WE-DPC	5838	6.0 x 6.0 x 4.0	1.0 – 47	4.5 – 0.9	5.0 – 0.7	25 - 245	80

An Excellent **Duet!**

WÜRTH ELEKTRONIK

#INDUCTORDUET

WE speed up the future

Coupled Inductors

The WE-MCRI is an innovative molded coupled inductor with fully automated bifilar winding process. It offers an almost ideal coupling coefficient up to 0.995. The WE-MCRI features a soft saturation behavior with its crystalline core structure and distributed air gap. The coupled inductor range includes high voltage isolation versions up to 2 kV, low profile types and versions with various turns ratios.

For further information, please visit: **www.we-online.com/coupled**

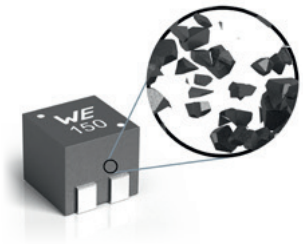
- Up to 0.995 coupling coefficient
- Up to 2.0 kV isolation
- Soft saturation
- Up to 120 A I_{SAT} and 48 A I_R
- Large portfolio

High Coupling	High Voltage	Various Turns Ratios	Low Profile	High Current	High Saturation Current
					
WE-MCRI	WE-CPIB HV	WE-EHPI	WE-TDC	WE-CFWI	WE-DCT

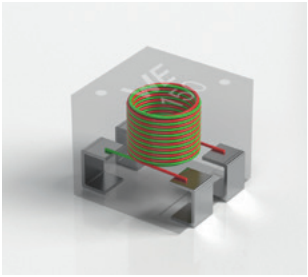
Coupled Inductors

High Coupling Version

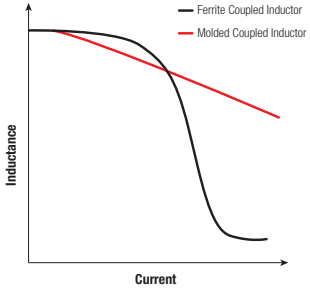
The first fully magnetically shielded coupled inductor with molding technology for high current applications.



The distributed air gap within the crystalline structure



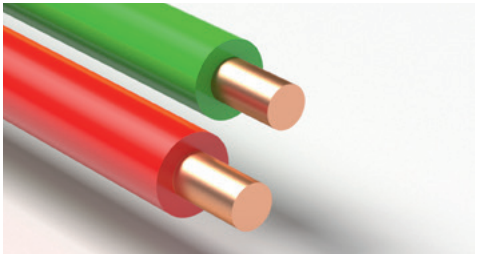
High Coupling Coefficient



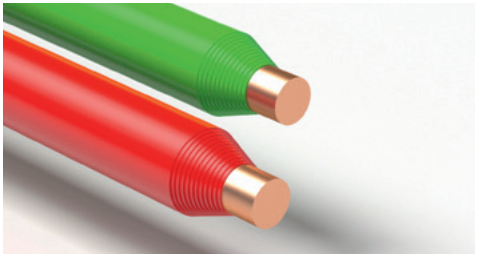
Soft Saturation

High Voltage Version

High Voltage Isolation up to 2 kV



Standard Insulation



High Voltage Insulation with multiple Layers

Demo Board – Dual-Output Isolated Buck Converter

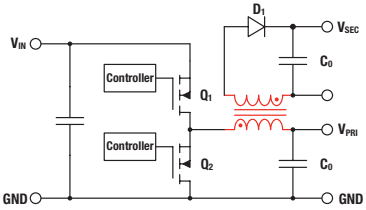
With the High Voltage Coupled Inductor WE-CPIB HV, an additional isolated output in a buck converter can be achieved, with minimal solution size and design effort.

Demo Module Features:

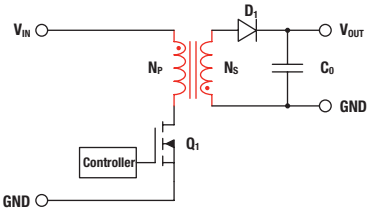
- USB powered
- Single and Dual-output buck operation
- Output LED indicators

Contact us for demonstration!

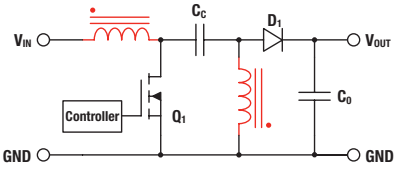
Typical Applications Overview



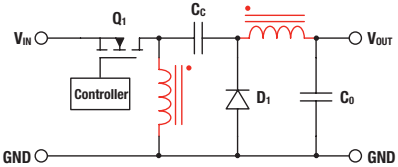
Multi Output Buck



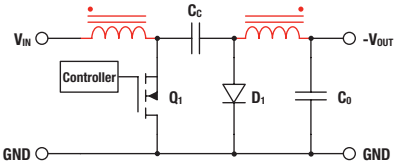
Flyback



SEPIC



ZETA



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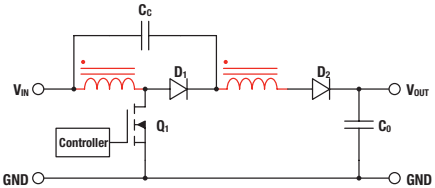

High Step-up Boost

Topology	Isolation	Multiple output	Output	Complexity	Cost	Product Series Recommendation
Multi output Buck	Isolated/Non-isolated	Yes	Non-inverted	Low	Low	WE-DPC HV, WE-TDC HV, WE-MTCI
Flyback	Isolated/Non-isolated	Yes	Non-inverted	Moderate	Moderate	WE-CPIB HV, WE-MTCI, WE-TDC HV
SEPIC	Non-isolated	No	Non-inverted	Moderate	Moderate	WE-DD, WE-MCRI, WE-CFWI
ZETA	Non-isolated	No	Non-inverted	Moderate	Moderate	WE-CFWI, WE-DCT, WE-DPC
Ćuk	Non-isolated	No	Inverted	Moderate	Moderate	WE-CFWI, WE-DD, WE-MCRI
High Step-up Boost	Non-isolated	No	Non-inverted	Moderate	Low	WE-EHPI, WE-MTCI

Application Note „Designing low-cost multiple output DC/DC converters“: www.we-online.com/ANP017