WÜRTH ELEKTRONIK MORE THAN YOU EXPECT

ULTRA LOW LOSSES

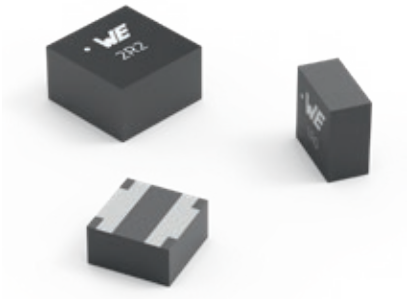
WE-MXGI

With the WE-MXGI, Würth Elektronik offers its newest AEC-Q qualified molded power inductor series.
It combines an innovative iron alloy material that provides high permability for lowest R_{DC} values with an optimized wire geometry.

Ready to Design-In? Take advantage of personal technical support and free samples ex-stock.

Highlights

- Innovative metal alloy nanocrystalline core material
- AEC-Q qualified
- Extremely high power density
- Ultra low R_{DC} values and AC losses
- Magnetically shielded
- Optimized for high switching frequencies beyond 1 MHz



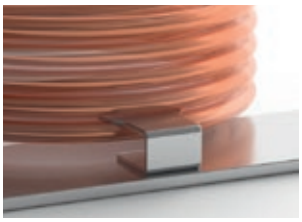
Learn more about WE-MXGI:
www.we-online.com/WE-MXGI

WE-MXGI – OUTSTANDING PERFORMANCE

In a world where innovation drives performance, the right core material is a key component for a power inductor. An innovative metal alloy nanocrystalline material contributes to the outstanding performance of the WE-MXGI series. It is characterized by a small grain size of less than 100 nm, resulting in a high-density power package with high permeability.

The WE-MXGI series incorporates

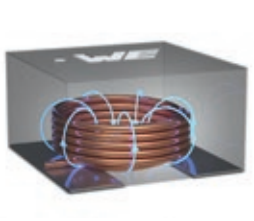
- Highest current ratings
- Ultra low power losses (AC&DC)
- Lowest R_{DC} values
- Excellent temperature stability
- Low EMI radiation



Leadframe free design for best coplanarity

No solder or welding joints for highest reliability

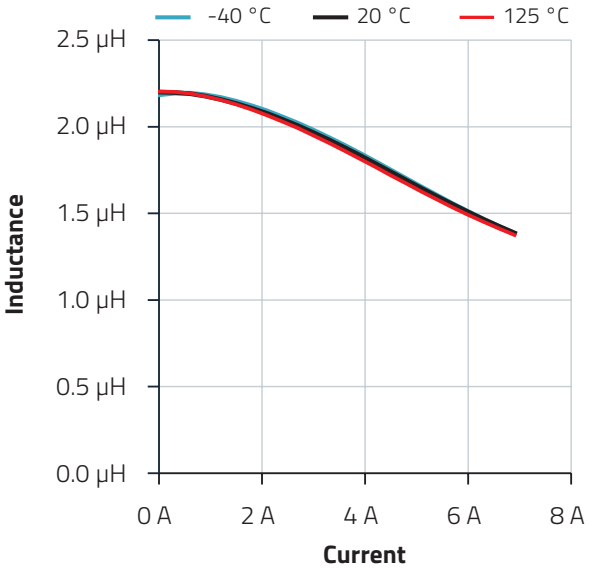
Greatest core utilization for highest current handling



Self-shielding construction for best EMI performance

SATURATION CURRENT

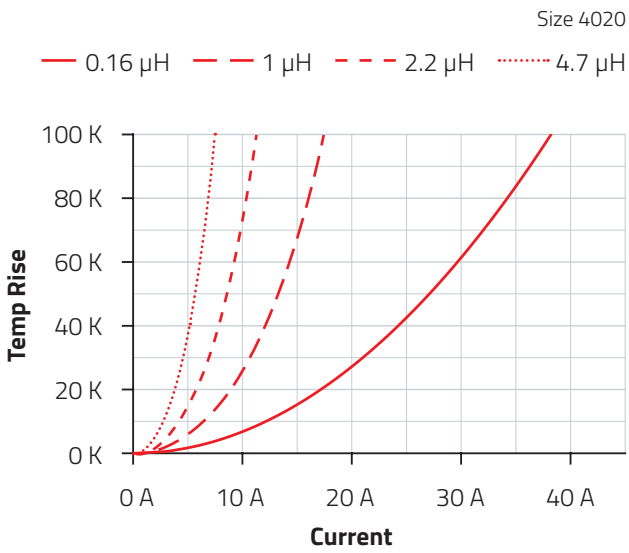
The innovative leadframe pad design with direct wire connection significantly increases core utilization and, therefore, current handling. Combined with the new material, the WE-MXGI delivers very stable temperature behavior from -40°C up to 125°C.



PERFORMANCE RATED CURRENT

Rated current values are often a debated topic in power electronics, with no standardized measurement across manufacturers.

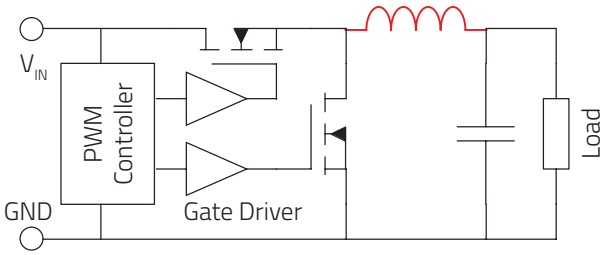
Würth Elektronik uses the IEC 62024-2:2020 standard to measure the performance rated current I_{RP}, highlighting the need to evaluate components in real operating conditions for reliable performance.



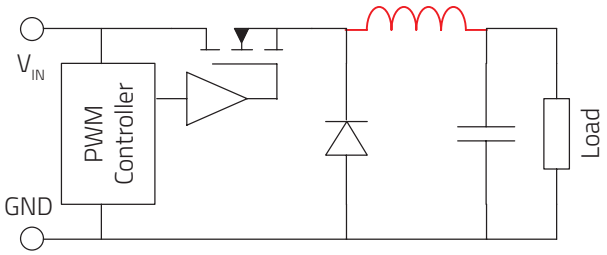
Discover how rated current parameters and measurement norms can help you optimize the inductor behavior for your application.
we-online.com/ANP096

APPLICATIONS

The WE-MXGI fits perfectly in synchronous and unsynchronous buck converters as well as the latest GaN (Gallium Nitride) driver technology. Ideal for applications where high switching frequencies are needed, such as 5G telecommunications, LIDAR systems, and others.



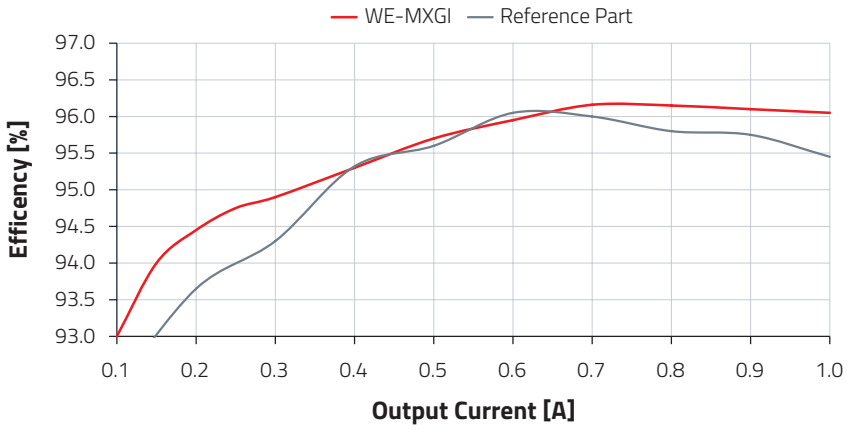
synchronous buck converter



unsynchronous buck converter

Measurements on an evaluation board are showing that the WE-MXGI has top-notch reliable efficiency across the output current without any compromises compared to other parts.

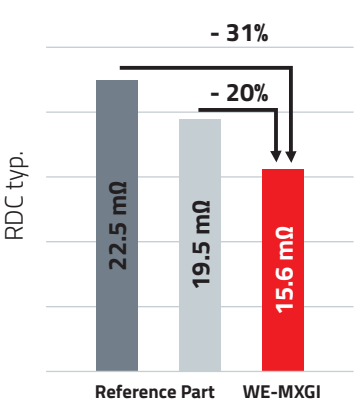
**Measured with 5Vin / 3.3Vout at a switching frequency of 1 MHz on TPS62902-Q1 TPS62901-Q1EVM*



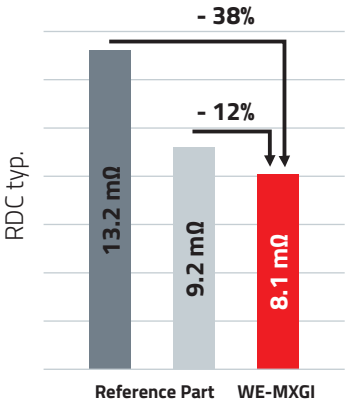
ULTRA LOW LOSSES. ESTIMATED IN SECONDS.

The WE-MXGI and **REDEXPERT** are the perfect symbiosis for every upcoming DC/DC converter application. Ultra-low losses estimated in seconds based on real measurements help to reduce time to market. Select. Compare. Simulate.

LOWEST R_{DC} VALUES

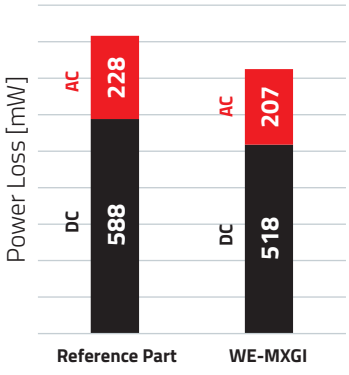


2.2 µH 4020



2.2 µH 5030

ULTRA LOW POWER LOSSES



24V to 6V @ 8A, 1MHz, 2.2 µH 5030

Reduce your AC & DC losses by up to 30 % compared to similar sized parts and determine real-time AC & DC losses in your application:
we-online.com/redexpert

Size 4020

Order Code	L (µH)	$I_{RP,40K}$ (A)	$I_{SAT,30\%}$ (A)	$R_{DC\ typ.}$ (mΩ)	f_{res} (MHz)	V_{OP} (V)
74438440200016	0.16	24.2	27.9	1.5	197	80
74438440200030	0.3	23.2	17.6	2	135	
74438440200040	0.4	16.9	14.8	3.8	122	
74438440200065	0.65	15.2	12.6	4.8	80	
7443844020010	1	12.1	9.8	6.9	59	
7443844020012	1.2	11	8.8	8.4	53	
7443844020015	1.5	10.3	8.4	10	50	
7443844020018	1.8	9.5	7.1	11.9	42	
7443844020022	2.2	7.8	5.8	15.6	37	
7443844020033	3.3	6.1	5.3	26.6	29	
7443844020047	4.7	5.2	5.7	40.3	25	

L: Inductance; $I_{RP,40K}$: Performance Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; $R_{DC\ typ.}$: DC Resistance ;
f_{res}: Self Resonant Frequency; V_{OP}: Operating Voltage

Size 5030

Order Code	L (µH)	$I_{RP,40K}$ (A)	$I_{SAT,30\%}$ (A)	$R_{DC\ typ.}$ (mΩ)	f_{res} (MHz)	V_{OP} (V)
74438450300022	0.22	28.1	25.4	1.5	155	80
74438450300047	0.47	23	20	2.4	84	
74438450300060	0.6	21.5	21.2	2.8	73	
74438450300082	0.82	19	16.7	3.5	55	
7443845030010	1	15.8	14.3	5.2	52	
7443845030012	1.2	17.2	14.3	4.5	43	
7443845030015	1.5	14.9	12.3	5.5	36	
7443845030022	2.2	12.4	10.5	8.1	35	
7443845030033	3.3	10	8.2	12.9	25	
7443845030047	4.7	8.2	7.7	22.5	21	
7443845030056	5.6	7.1	6.8	24.5	19	
7443845030068	6.8	6.5	6.8	28.3	18	
7443845030082	8.2	6.1	5.9	34	15	
7443845030100	10	5.5	5.4	41.5	12	
7443845030120	12	5	4.9	52.3	11	
7443845030150	15	4.5	4.3	64.5	10	

L: Inductance; $I_{RP,40K}$: Performance Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; $R_{DC\ typ.}$: DC Resistance ;
f_{res}: Self Resonant Frequency; V_{OP}: Operating Voltage

More information:
www.we-online.com/WE-MXGI