

AUTOMOTIVE
STANDARD
NEW PRODUCTS
2022



WÜRTH ELEKTRONIK MORE THAN YOU EXPECT

THE WÜRTH ELEKTRONIK

eiSos GROUP



THE WÜRTH ELEKTRONIK GROUP

Employees: 8,000*
Sales: 1.09 Bn. Euro*
*2021

WÜRTH ELEKTRONIK eiSos GROUP



PRINTED CIRCUIT
BOARDS

INTELLIGENT
POWER AND
CONTROL SYSTEMS

Passive
Components



Power Modules &
Optoelectronics



Electromechanical
Components



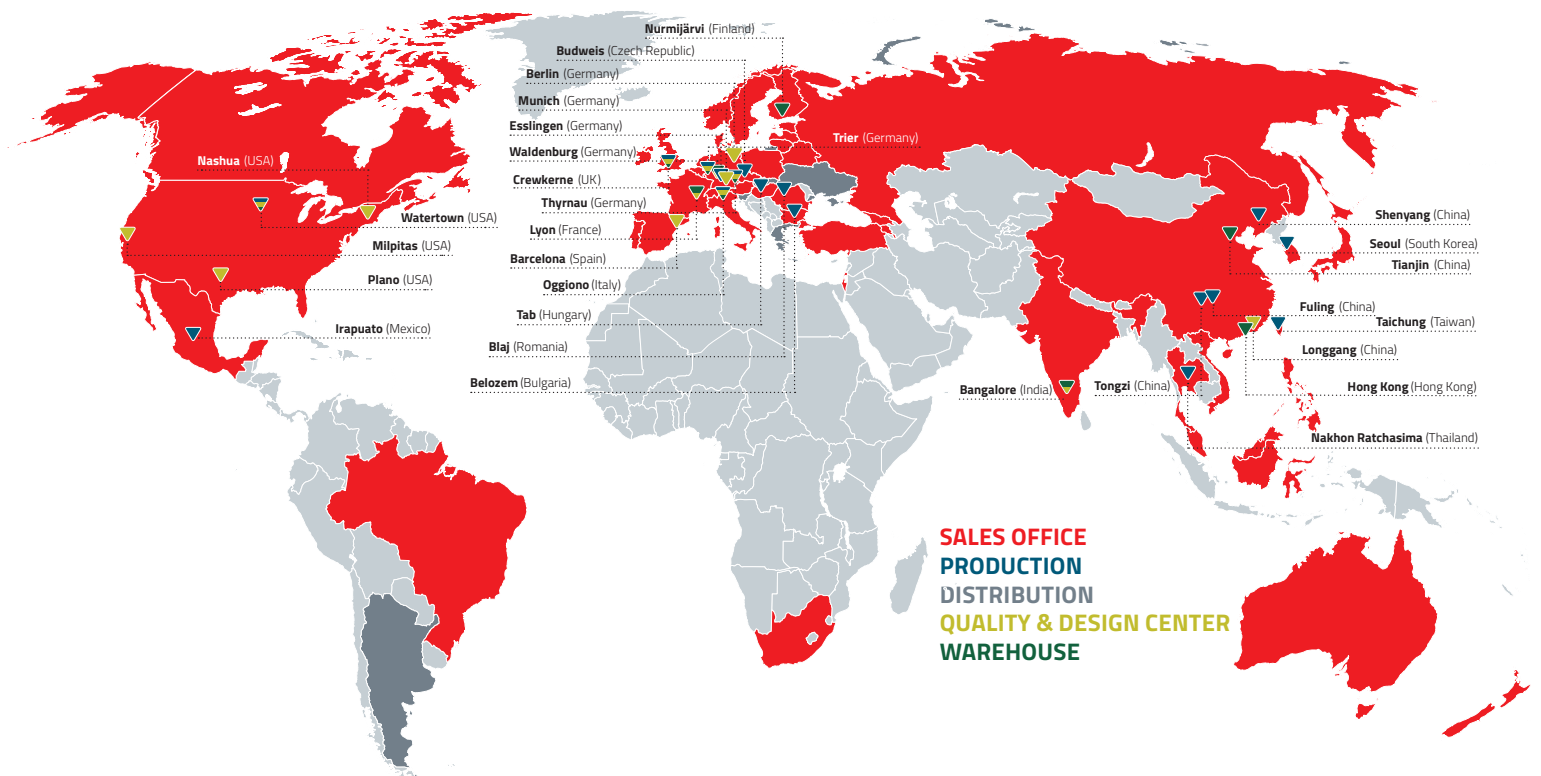
Automotive &
eMobility



Wireless Connectivity &
Sensors



GLOBALLY AVAILABLE. LOCALLY PRESENT.



MORE THAN YOU EXPECT



**SAY YES TO OUR FAST AND
COST-FREE DESIGN-IN SUPPORT**



**WE TAILOR THE QUANTITIES
TO YOUR NEEDS**



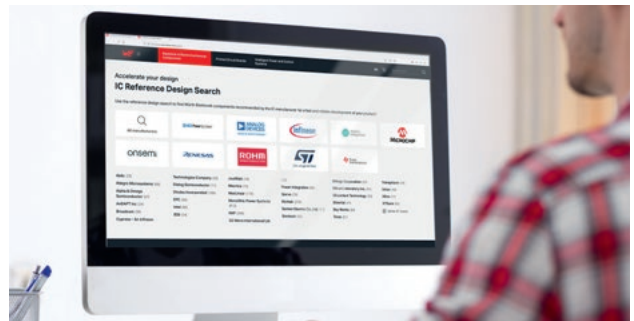
**ALL CATALOGUE PRODUCTS
AVAILABLE EX STOCK**



**ONLINE DESIGN PLATFORM FOR
COMPONENT SELECTION & SIMULATION**



**DESIGN SEMINARS AND
WEBINARS FREE OF CHARGE**



**REFERENCE DESIGNS OF
LEADING IC MANUFACTURES**



**DESIGN KITS WITH LIFELONG
FREE REFILL**

WE-CAR-TEC SNAP FERRITE



Characteristics

- Pre-fixing cable system facilitates the assembly process
- Cable clamping protection
- Internal security locking system with patented key technology (WE-STAR-KEY PN: 74271) prevents unauthorized removing from the cable
- One key in each packaging unit
- Classification of the plastic housing: UL94 V0
- Operating temperature: -50 °C up to +105 °C
- Core material: NiZn
- AEC-Q200

Applications

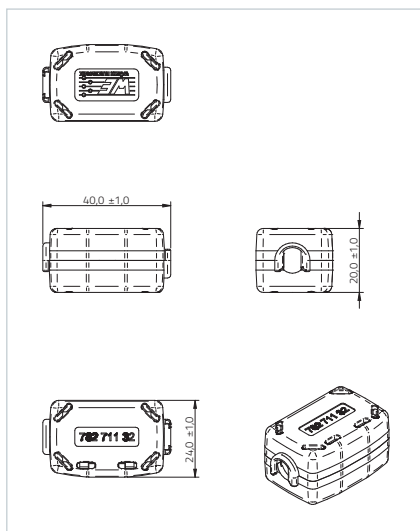
- EMC ferrite for EMI suppression in the frequency range from 1 MHz up to 1 GHz
- Fastening round cables with diameter from 3.5 mm up to 8.5 mm or if wound more turns through the ferrite
- Reusable because of the STAR-KEY technology therefore perfect for test and measuring purposes in EMC labs

With reliable and flexible cable fixing, developed in-house

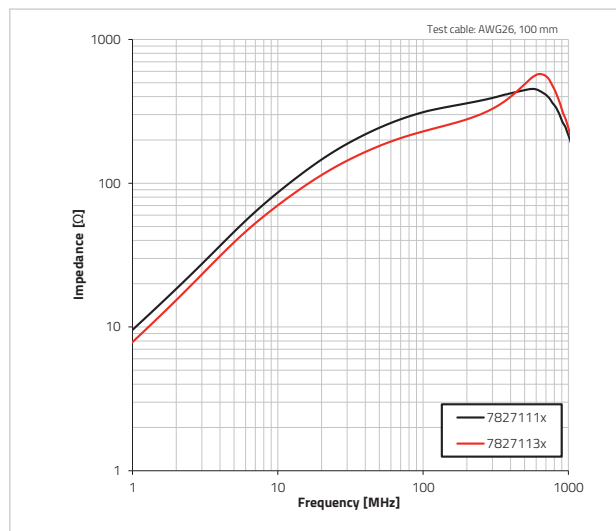
| Order Code | Ø Cable (mm) | Z @ 25 MHz 1 turn (Ω) | Z @ 100 MHz 1 turn (Ω) | Material | L (mm) | W (mm) | H (mm) | Color |
|------------|--------------|-----------------------|------------------------|----------|--------|--------|--------|-------|
| 78271111S | 3.5 - 5 | 175 | 316 | 91101004 | 41 | 23.4 | 18 | Black |
| 78271111 | 3.5 - 5 | 175 | 316 | | 41 | 23.4 | 18 | Grey |
| 78271112S | 4.5 - 6 | 175 | 316 | | 41 | 23.4 | 18 | Black |
| 78271112 | 4.5 - 6 | 175 | 316 | | 41 | 23.4 | 18 | Grey |
| 78271131S | 6 - 7.5 | 125 | 235 | | 40 | 24 | 20 | Black |
| 78271131 | 6 - 7.5 | 125 | 235 | | 40 | 24 | 20 | Grey |
| 78271132S | 7 - 8.5 | 125 | 235 | | 40 | 24 | 20 | Black |
| 78271132 | 7 - 8.5 | 125 | 235 | | 40 | 24 | 20 | Grey |

Ø Cable: Cable Diameter; Z @ 25 MHz 1 turn: Impedance @ 25 MHz 1 turn; Z @ 100 MHz 1 turn: Impedance @ 100 MHz 1 turn; L: Length; W: Width; H: Height; Color: Plastic Housing Color

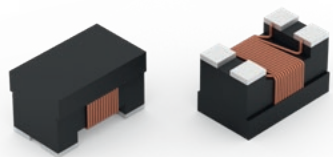
Dimensions (mm)



Impedance vs. Frequency



SMT COMMON MODE LINE FILTER



Characteristics

- Current compensated data line filter
- High common mode noise suppression at high frequencies
- Low R_{DC} design
- AEC-Q200

Applications

- Car infotainment
- Flex ray
- High speed data lines
- IEEE 1394 (Firewire)
- LVDS
- USB 2.0 & 3.0

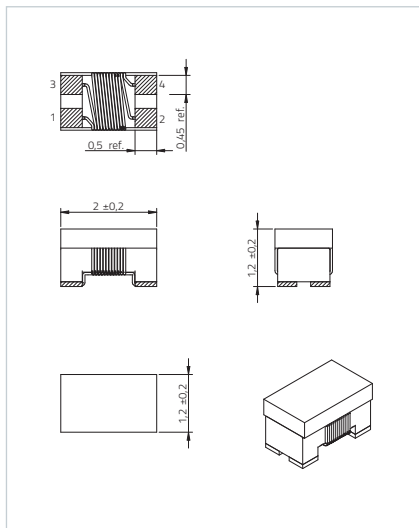
Automotive released CMC

SIZE 0805

| Order Code | Winding Style | L (μH) | Z @ 10 MHz (Ω) | Z @ 100 MHz (Ω) | R_{DC} (Ω) | I_R (mA) |
|------------|---------------|------------------------|----------------------------|-----------------------------|--------------------------|---------------|
| 784231061 | bifilar | 0.088 | 10 | 67 | 0.151 | 400 |
| 784231091 | | 0.131 | 12 | 90 | 0.195 | 370 |
| 784231121 | | 0.166 | 18 | 120 | 0.196 | 370 |
| 784231181 | | 0.252 | 28 | 180 | 0.236 | 330 |
| 784231261 | | 0.367 | 36 | 260 | 0.273 | 300 |
| 784231371 | | 0.478 | 54 | 370 | 0.3 | 280 |

L: Inductance; Z @ 10 MHz: Impedance @ 10 MHz; Z @ 100 MHz: Impedance @ 100 MHz; R_{DC} : DC Resistance; I_R : Rated Current

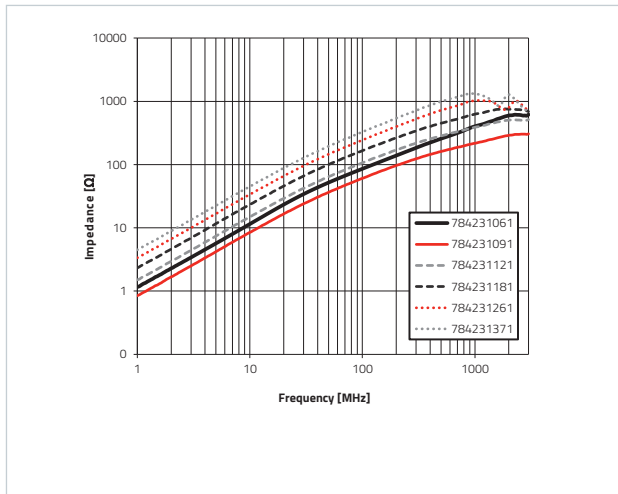
Dimensions (mm)



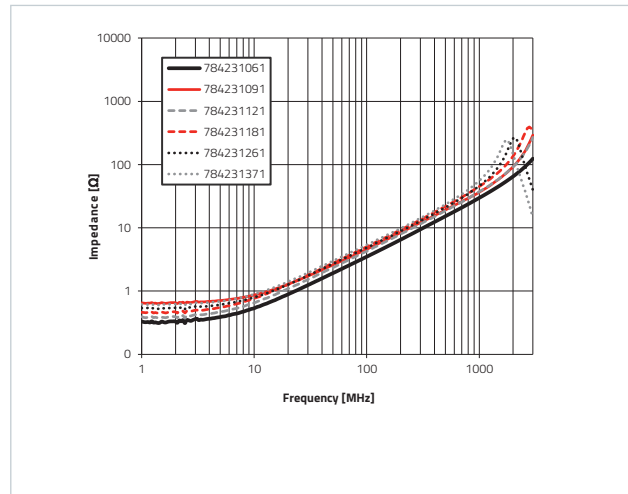
SMT COMMON MODE LINE FILTER

SIZE 0805

Impedance vs. Frequency (Common Mode)



Impedance vs. Frequency (Differential Mode)



WE-XHMA

SMD POWER INDUCTOR



Characteristics

- Flat wire coil for low copper losses
- Composite core material allows high saturation currents
- Compact design
- Magnetically shielded
- High current capability and handles high transient current spikes
- Low leakage flux noise
- Operating temperature: -40 °C up to +125 °C
- AEC-Q200

Applications

- DC/DC converter for high current power supplies
- DC/DC converter for field programmable gate array (FPGA)
- Power supplies for mobile devices
- POL converters
- Mainboards / graphic cards
- Battery powered devices
- Filter

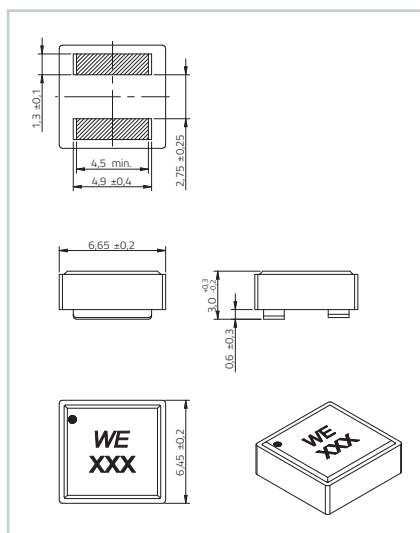
Extreme high current capabilities up to 50.6 A (saturation)

SIZE 6030

| Order Code | L (μH) | Tol. L | I _{R,40K} (A) | I _{SAT,30%} (A) | R _{DC} (mΩ) | f _{res} (MHz) |
|--------------|--------|--------|------------------------|--------------------------|----------------------|------------------------|
| 784393440018 | 0.18 | ±20% | 20 | 50.6 | 1.32 | 169 |
| 784393440033 | 0.33 | | 16.5 | 42.9 | 2.1 | 113 |
| 784393440056 | 0.56 | | 16 | 30.8 | 2.9 | 77 |
| 78439344010 | 1 | | 12 | 24.95 | 5.5 | 59 |
| 78439344012 | 1.2 | | 10.3 | 21.6 | 6.4 | 53 |
| 78439344022 | 2.2 | | 8 | 16.25 | 10.5 | 37 |
| 78439344033 | 3.3 | | 6 | 14.5 | 19.2 | 31 |
| 78439344047 | 4.7 | | 4.7 | 10.5 | 31 | 28 |

L: Inductance; Tol. L: Inductance (Tol.); I_{R,40K}: Rated Current; I_{SAT,30%}: Saturation Current @ 30%; f_{res}: Self Resonant Frequency; R_{DC}: DC Resistance

Dimensions: [mm]

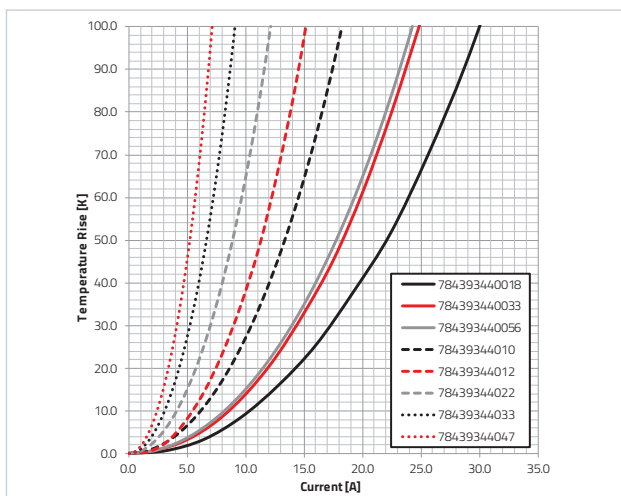


WE-XHMA

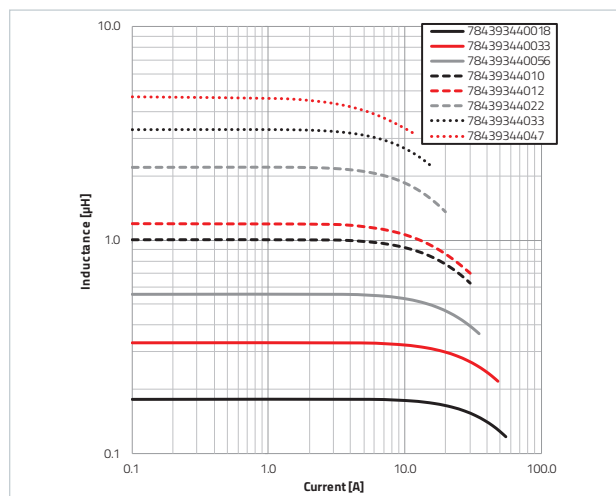
SMD POWER INDUCTOR

SIZE 6030

Temperature Rise vs. Current



Inductance vs. Current



WE-XHMA

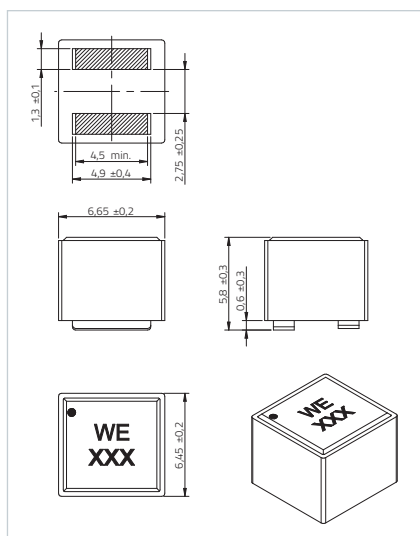
SMD POWER INDUCTOR

SIZE 6060

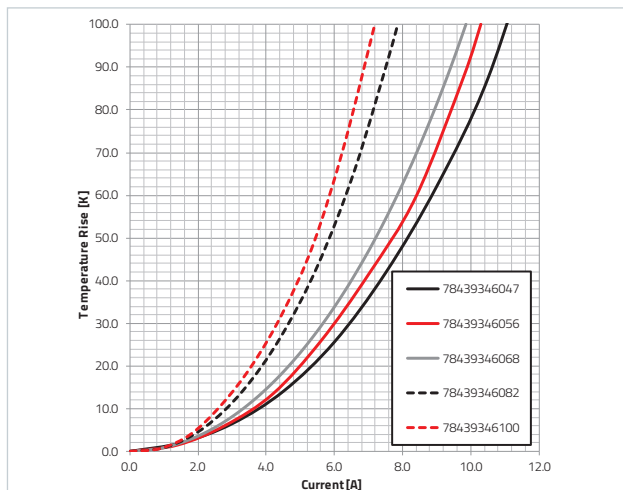
| Order Code | L (μH) | Tol. L | $I_{R,40K}$ (A) | $I_{SAT,30\%}$ (A) | R_{DC} (m Ω) | f_{res} (MHz) |
|-------------|------------------------|--------|--------------------|-----------------------|---------------------------|--------------------|
| 78439346047 | 4.7 | ±20% | 7.4 | 13 | 13 | 28 |
| 78439346056 | 5.6 | | 6.9 | 12.1 | 15 | 25 |
| 78439346068 | 6.8 | | 6.5 | 11.3 | 17.6 | 22 |
| 78439346082 | 8.2 | | 5.3 | 9.3 | 23 | 19 |
| 78439346100 | 10 | | 5 | 9.7 | 26.5 | 18 |

L: Inductance; Tol. L: Inductance (Tol.); $I_{R,40K}$: Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; R_{DC} : DC Resistance; f_{res} : Self Resonant Frequency

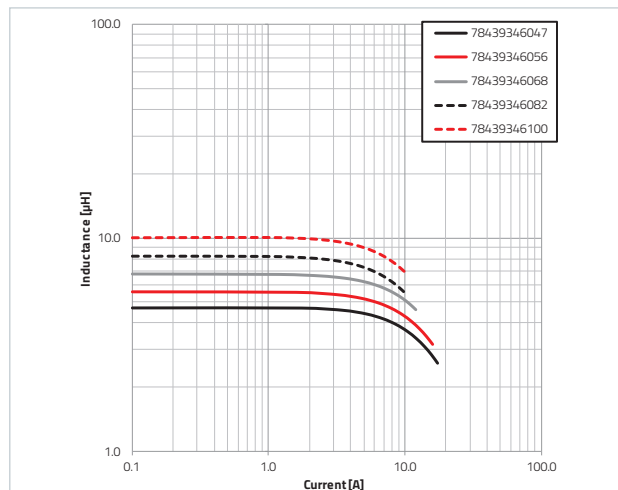
Dimensions: [mm]



Temperature Rise vs. Current



Inductance vs. Current



WE-XHMA

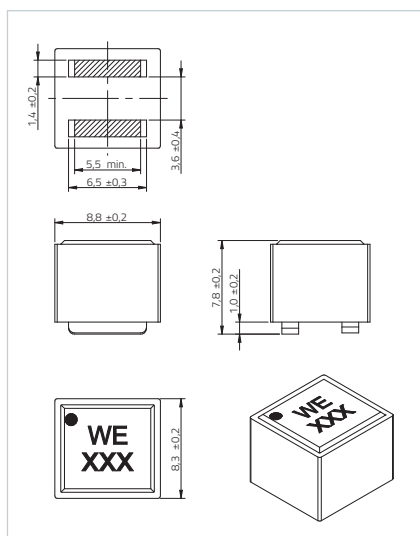
SMD POWER INDUCTOR

SIZE 8080

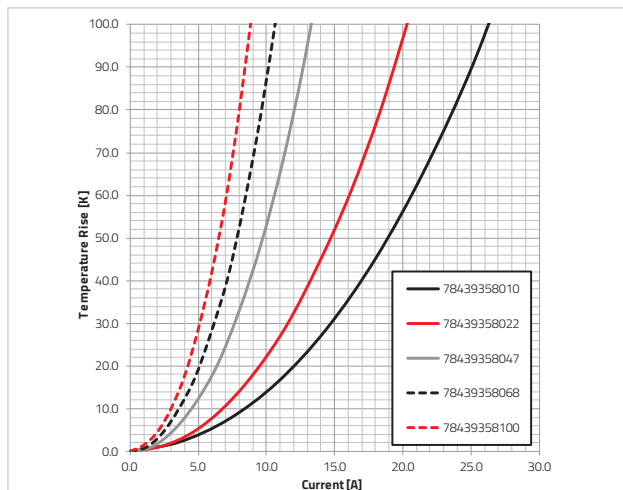
| Order Code | L (μH) | Tol. L | $I_{R,40K}$ (A) | $I_{SAT,30\%}$ (A) | R_{DC} (m Ω) | f_{res} (MHz) |
|-------------|------------------------|------------|--------------------|-----------------------|---------------------------|--------------------|
| 78439358010 | 1 | $\pm 20\%$ | 17 | 38.15 | 2.1 | 53 |
| 78439358022 | 2.2 | | 13 | 26.45 | 3.7 | 33 |
| 78439358047 | 4.7 | | 9.5 | 16.65 | 8.65 | 22 |
| 78439358068 | 6.8 | | 7.2 | 17.6 | 13 | 22 |
| 78439358100 | 10 | | 5.8 | 13.5 | 19 | 17 |

L: Inductance; Tol. L: Inductance (Tol.); $I_{R,40K}$: Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; R_{DC} : DC Resistance; f_{res} : Self Resonant Frequency

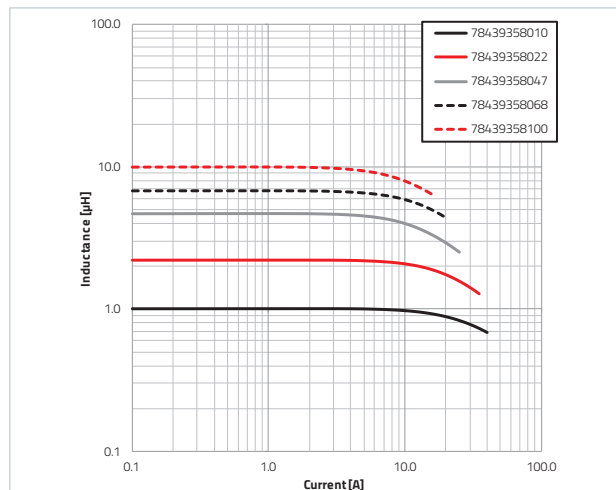
Dimensions: [mm]



Temperature Rise vs. Current



Inductance vs. Current



WE-XHMA

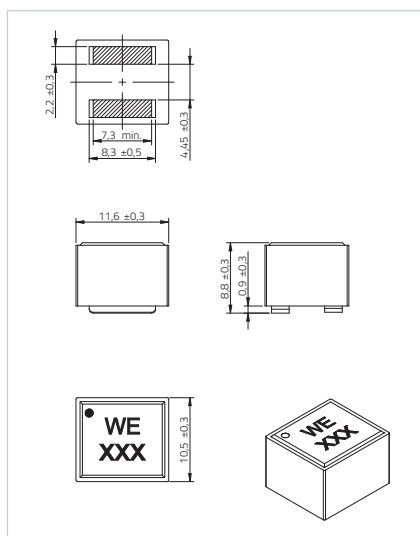
SMD POWER INDUCTOR

SIZE 1090

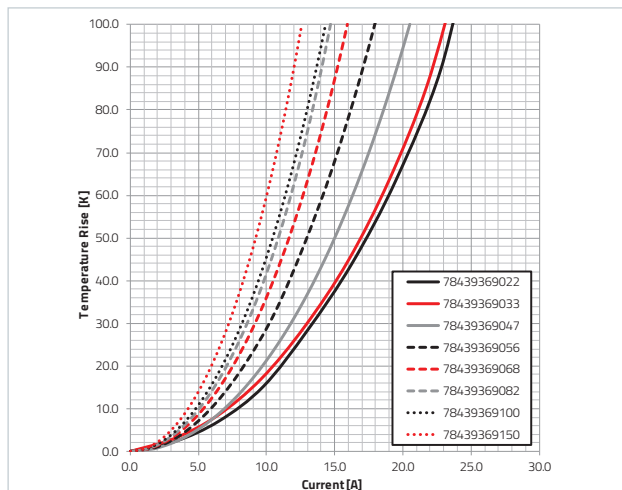
| Order Code | L (μH) | Tol. L | $I_{R,40K}$ (A) | $I_{SAT,30\%}$ (A) | R_{DC} (m Ω) | f_{res} (MHz) |
|-------------|------------------------|------------|--------------------|-----------------------|---------------------------|--------------------|
| 78439369022 | 2.2 | $\pm 20\%$ | 16 | 32.1 | 2.2 | 28 |
| 78439369033 | 3.3 | | 15 | 34 | 3.4 | 23 |
| 78439369047 | 4.7 | | 13.5 | 28.05 | 5 | 21 |
| 78439369056 | 5.6 | | 11.5 | 24.45 | 5.9 | 18 |
| 78439369068 | 6.8 | | 10.5 | 23.25 | 7.16 | 16 |
| 78439369082 | 8.2 | | 9.8 | 20.45 | 10 | 16 |
| 78439369100 | 10 | | 9.4 | 20.3 | 11 | 14 |
| 78439369150 | 15 | | 8.3 | 16.95 | 14.8 | 11 |

L: Inductance; Tol. L: Inductance (Tol.); $I_{R,40K}$: Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; R_{DC} : DC Resistance; f_{res} : Self Resonant Frequency

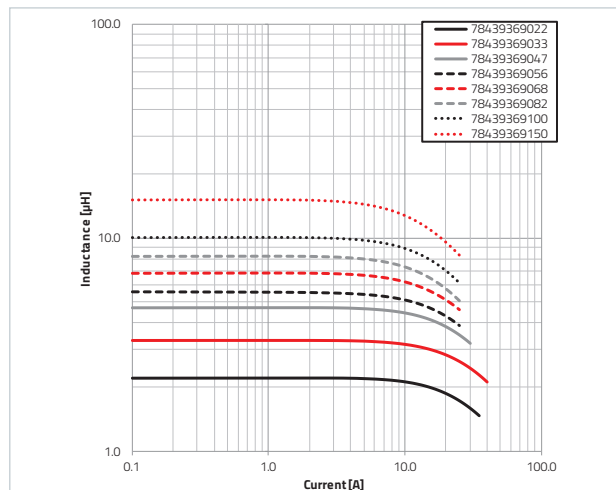
Dimensions: [mm]



Temperature Rise vs. Current



Inductance vs. Current



WE-XHMA

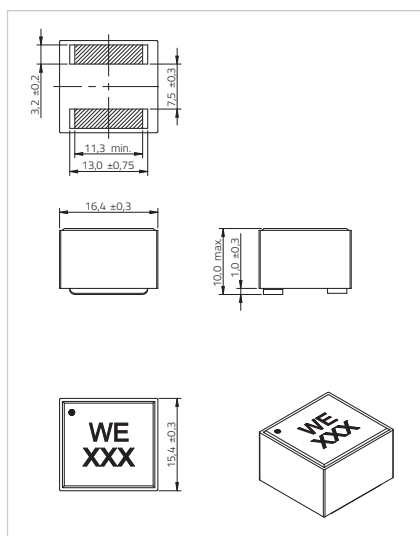
SMD POWER INDUCTOR

SIZE 1510

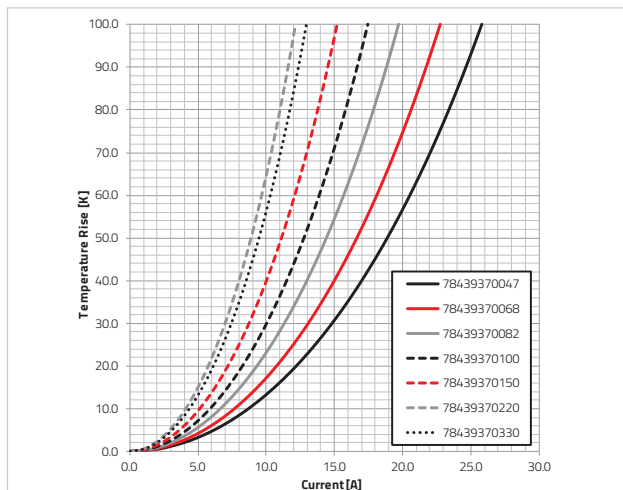
| Order Code | L (μH) | Tol. L | $I_{R,40K}$ (A) | $I_{SAT,30\%}$ (A) | R_{DC} (m Ω) | f_{res} (MHz) |
|-------------|------------------------|------------|--------------------|-----------------------|---------------------------|--------------------|
| 78439370047 | 4.7 | $\pm 20\%$ | 17 | 47.4 | 3.1 | 16 |
| 78439370068 | 6.8 | | 15 | 40.05 | 4.1 | 14 |
| 78439370082 | 8.2 | | 13 | 36.4 | 5.5 | 11 |
| 78439370100 | 10 | | 11.5 | 31.2 | 6.4 | 9 |
| 78439370150 | 15 | | 10 | 26.1 | 10.5 | 8 |
| 78439370220 | 22 | | 8 | 22.35 | 12.5 | 7 |
| 78439370330 | 33 | | 8.5 | 18.15 | 18 | 5 |

L: Inductance; Tol. L: Inductance (Tol.); $I_{R,40K}$: Rated Current; $I_{SAT,30\%}$: Saturation Current @ 30%; R_{DC} : DC Resistance; f_{res} : Self Resonant Frequency

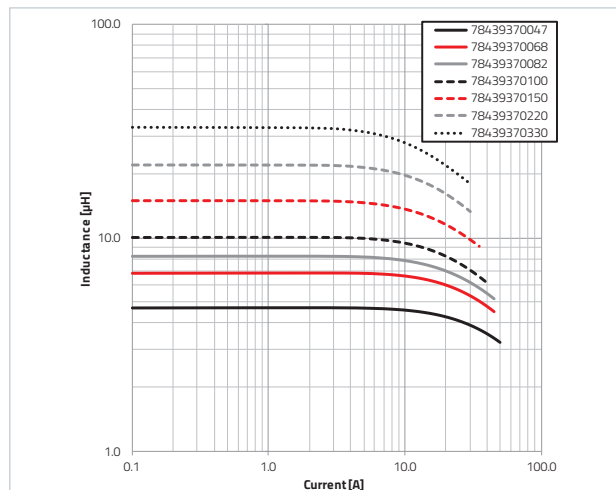
Dimensions: [mm]



Temperature Rise vs. Current



Inductance vs. Current



WE-HCIA

SMD FLAT WIRE HIGH CURRENT INDUCTOR



Characteristics

- Magnetically shielded
- Flat wire coil for low losses
- Low stray field
- Operating temperature: -55 °C up to +150 °C
- Current capability up to 36 A
- AEC-Q200

Applications

- Filter choke for motor electronics
- Car infotainment
- Multimedia applications

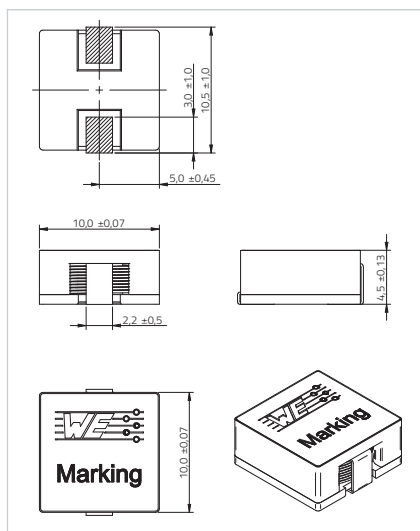
Saturation current
up to 36 A

SIZE 1050

| Order Code | L (μH) | Tol. L | I _R (A) | I _{SAT} (A) | R _{DC} (mΩ) | R _{DC max.} (mΩ) | f _{res} (MHz) |
|------------|--------|--------|--------------------|----------------------|----------------------|---------------------------|------------------------|
| 7843250072 | 0.72 | ±20% | 22 | 36.1 | 1.26 | 1.38 | 103 |
| 784325012 | 1.2 | | 20 | 30 | 1.86 | 2.04 | 76 |
| 784325018 | 1.8 | | 16 | 25 | 3 | 3.3 | 60 |
| 784325024 | 2.4 | | 14 | 20.7 | 4.9 | 5.4 | 55 |
| 784325033 | 3.3 | | 12 | 18 | 5.2 | 5.75 | 41 |
| 784325042 | 4.2 | | 11 | 15.7 | 7.1 | 7.8 | 36 |
| 784325055 | 5.2 | | 10 | 14.3 | 8.6 | 9.45 | 31 |
| 784325065 | 6.5 | | 8.4 | 13 | 10.5 | 11.55 | 27 |
| 784325078 | 7.8 | | 8 | 12 | 13.1 | 14.4 | 23 |
| 784325100 | 10 | | 7.2 | 10.3 | 21 | 23.1 | 21 |
| 784325160 | 16.7 | | 5 | 7.8 | 34.5 | 38 | 16 |

L: Inductance; Tol. L: Inductance (Tol.); I_R: Rated Current; I_{SAT}: Saturation Current; R_{DC}: DC Resistance; R_{DC max.}: DC Resistance max.; f_{res}: Self Resonant Frequency

Dimensions: [mm]

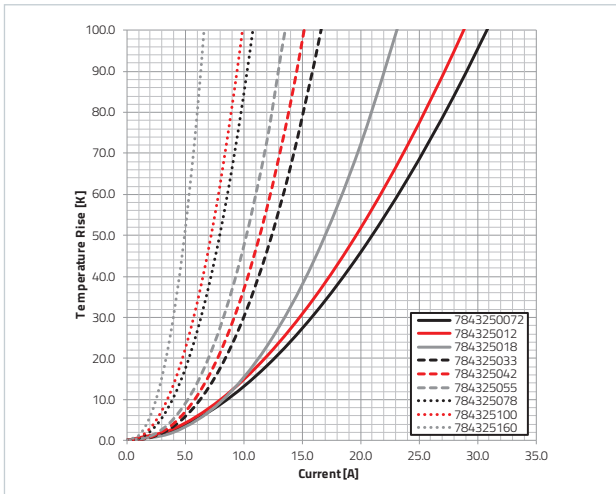


WE-HCIA

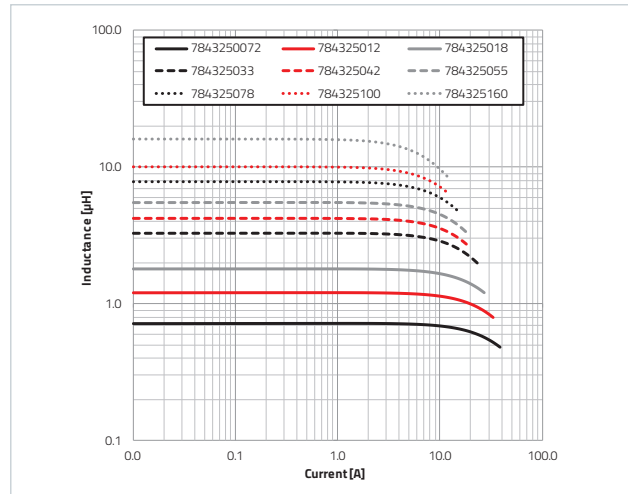
SMD FLAT WIRE HIGH CURRENT INDUCTOR

SIZE 1050

Temperature Rise vs. Current



Inductance vs. Current



WE-CHSA P

PERFORMANCE SMD HIGH CURRENT INDUCTOR



Characteristics

- Magnetically shielded rod-core inductor
- Operating temperature: -55 °C up to +150 °C
- Saturation current up to 48.5 A
- Iron alloy core leads to soft saturation
- Excellent coplanarity due to the plastic base
- AEC-Q200

Applications

- Filter choke for motor electronics
- Car infotainment
- DC/DC converter
- Multimedia applications
- Microprocessor filtering

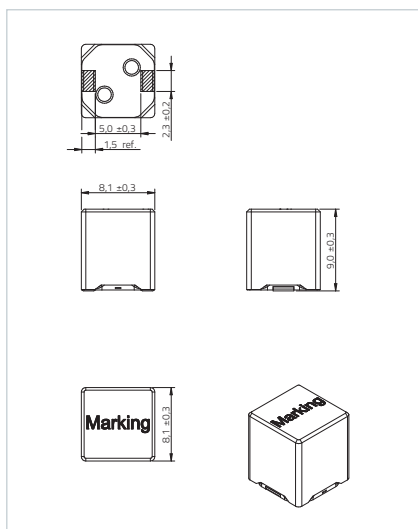
Shielded construction
for minimum EMI

SIZE 8090

| Order Code | L (μH) | Tol. L | I _R (A) | I _{SAT} (A) | R _{DC} (mΩ) | R _{DC max.} (mΩ) | f _{res} (MHz) |
|-------------|--------|--------|--------------------|----------------------|----------------------|---------------------------|------------------------|
| 78433490036 | 0.36 | ±20% | 19 | 48.5 | 2.3 | 2.8 | 218 |
| 78433490056 | 0.56 | | 15.6 | 40.5 | 3.45 | 4.1 | 184 |
| 78433490075 | 0.75 | | 12.8 | 34.5 | 4.9 | 5.9 | 154 |
| 78433490160 | 1.6 | | 8.4 | 22.3 | 10 | 12 | 93 |
| 78433490240 | 2.4 | | 6.8 | 18.4 | 15.35 | 18.4 | 80 |
| 78433490390 | 3.9 | | 5 | 14.6 | 24.1 | 28.9 | 65 |

L: Inductance; Tol. L: Inductance (Tol.); I_R: Rated Current; I_{SAT}: Saturation Current; R_{DC}: DC Resistance; R_{DC max.}: DC Resistance max.; f_{res}: Self Resonant Frequency

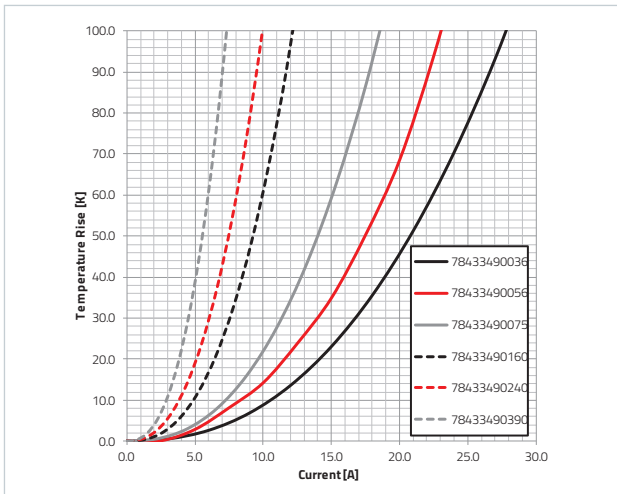
Dimensions: [mm]



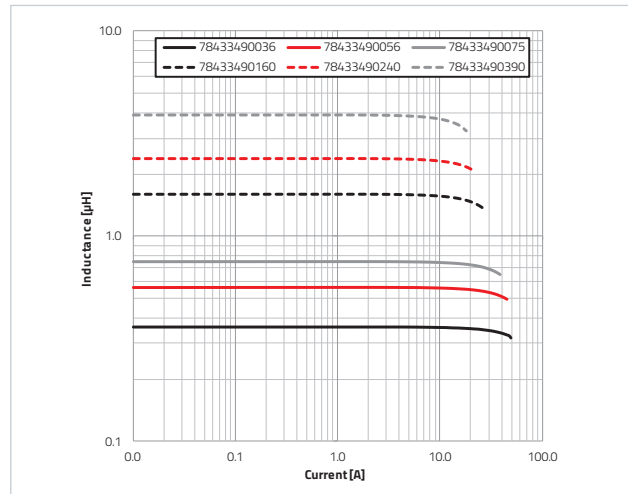
PERFORMANCE SMD HIGH CURRENT INDUCTOR

SIZE 8090

Temperature Rise vs. Current



Inductance vs. Current



WE-CHSA P

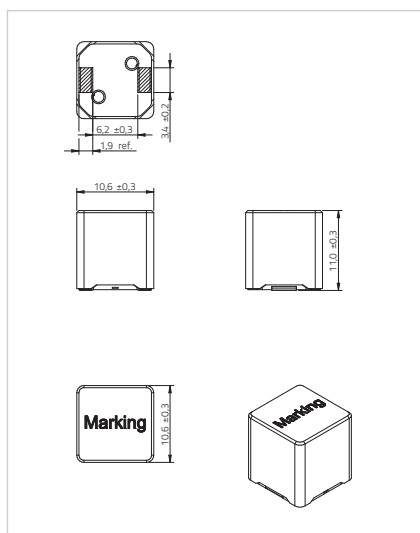
PERFORMANCE SMD HIGH CURRENT INDUCTOR

SIZE 1011

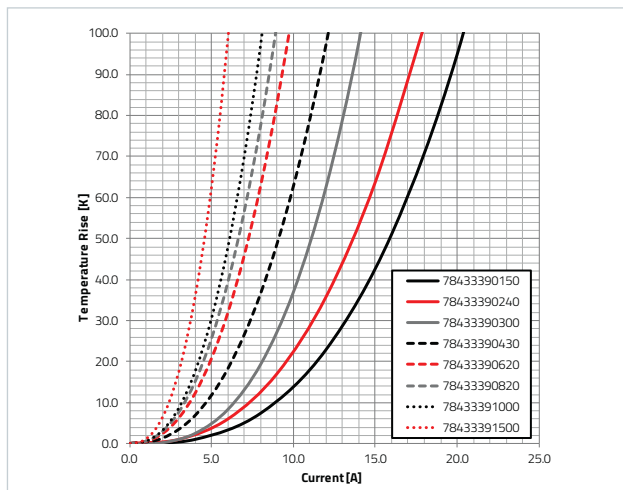
| Order Code | L (μH) | Tol. L | I _R (A) | I _{SAT} (A) | R _{DC} (mΩ) | R _{DCmax} (mΩ) | f _{res} (MHz) |
|-------------|--------|--------|--------------------|----------------------|----------------------|-------------------------|------------------------|
| 78433390150 | 1.5 | ±20% | 16 | 37.4 | 3.9 | 4.7 | 67 |
| 78433390240 | 2.4 | | 13.8 | 28.7 | 5.4 | 6.5 | 55 |
| 78433390300 | 3 | | 11.2 | 26.2 | 7.25 | 8.7 | 50 |
| 78433390430 | 4.3 | | 9.2 | 20.6 | 10.85 | 13 | 41 |
| 78433390620 | 6.2 | | 7.2 | 18 | 15.9 | 19.1 | 34 |
| 78433390820 | 8.2 | | 6.7 | 15.6 | 21.5 | 25.8 | 30 |
| 78433391000 | 10 | | 5.6 | 14.4 | 27.7 | 33.2 | 28 |
| 78433391500 | 15 | | 4.3 | 11.3 | 11.3 | 50.8 | 60.9 |

L: Inductance; Tol. L: Inductance (Tol.); I_R: Rated Current; I_{SAT}: Saturation Current; R_{DC}: DC Resistance; R_{DCmax}: DC Resistance max.; f_{res}: Self Resonant Frequency

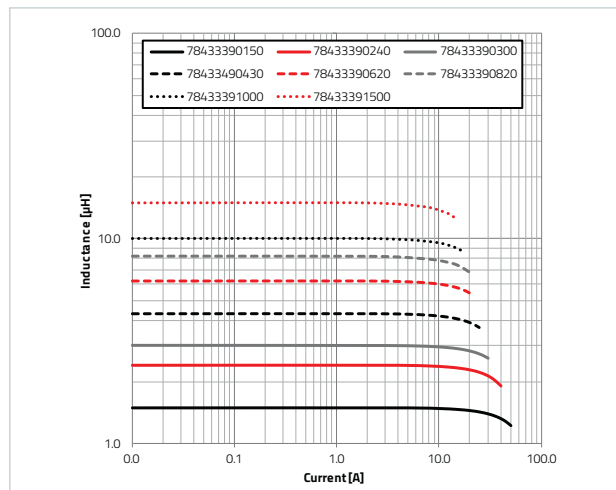
Dimensions: [mm]



Temperature Rise vs. Current



Inductance vs. Current



WE-CHSA P

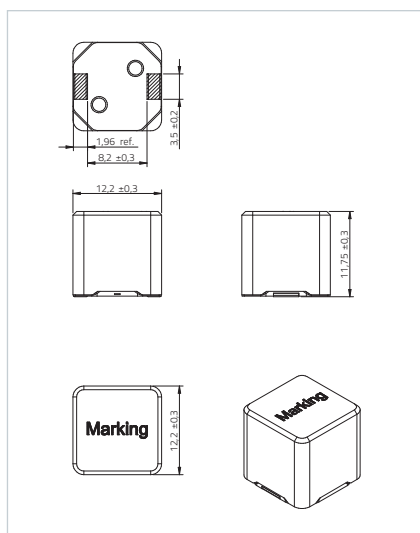
PERFORMANCE SMD HIGH CURRENT INDUCTOR

SIZE 1212

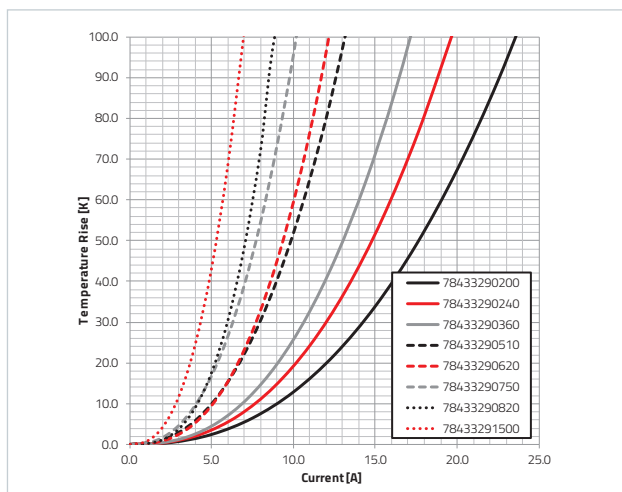
| Order Code | L (μH) | Tol. L | I_R (A) | I_{SAT} (A) | R_{DC} ($\text{m}\Omega$) | $R_{DC\text{max}}$ ($\text{m}\Omega$) | f_{res} (MHz) |
|-------------|------------------------|------------|--------------|------------------|----------------------------------|--|--------------------|
| 78433290200 | 2 | $\pm 20\%$ | 16.2 | 29 | 3.9 | 4.7 | 64 |
| 78433290240 | 2.4 | | 13.8 | 24.8 | 5.3 | 6.4 | 60 |
| 78433290360 | 3.6 | | 12.2 | 20.6 | 6.85 | 8.2 | 48 |
| 78433290510 | 5.1 | | 9.8 | 17 | 9.9 | 11.9 | 40 |
| 78433290620 | 6.2 | | 8.8 | 16 | 12.45 | 15 | 37 |
| 78433290750 | 7.5 | | 7.8 | 14.6 | 16.95 | 20.35 | 34 |
| 78433290820 | 8.2 | | 7.1 | 13.7 | 17.9 | 21.5 | 32 |
| 78433291500 | 15 | | 5.4 | 9.8 | 35.9 | 43.1 | 23 |

L: Inductance; Tol. L: Inductance (Tol.); I_R : Rated Current; I_{SAT} : Saturation Current; R_{DC} : DC Resistance; $R_{DC\text{max}}$: DC Resistance max.; f_{res} : Self Resonant Frequency

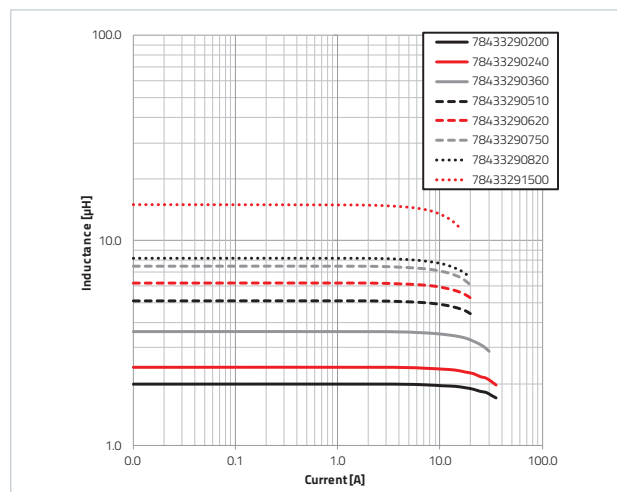
Dimensions: [mm]



Temperature Rise vs. Current

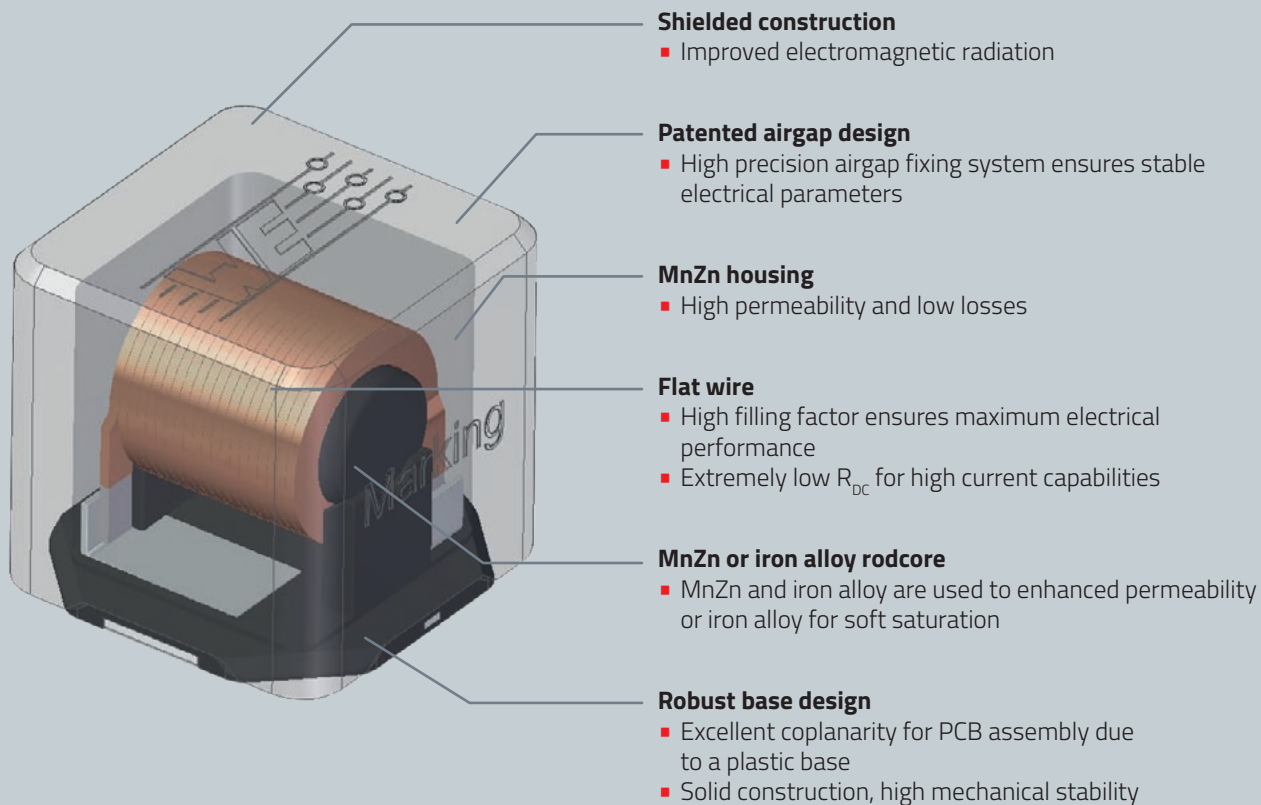


Inductance vs. Current



WE-CHSA P

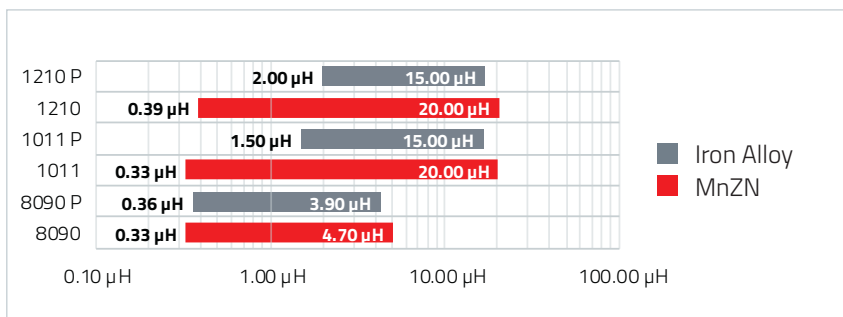
PERFORMANCE SMD HIGH CURRENT INDUCTOR



Characteristics

- Thanks to best filling factor of flat wire we can achieve extreme low R_{DC}
- Patented airgap design ensures product reliability
- Suitable for high frequency application due to MnZn core material
- Shielded construction makes it ideal for filtering applications.

WE-CHSA Inductance ranges: Performance vs. standard



In order to maintain production stability some parts are winded with round wire:

1212 P: 78433290030, 78433290051, 78433290082, 78433290110

1212: 7843320039, 7843320068, 7843320100, 7843320150

1011: 7843330033, 7843330560, 7843330100

NOTES

NOTES

AUTOMOTIVE COMPONENTS



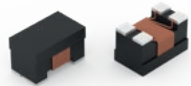
Ferrites for Cable Assembly



Ferrites for PCB Assembly



Filter Chokes



Common Mode Chokes



Single Coil Power Inductors



RF Inductors



Assembly



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