



Achieve broadband common mode noise suppression today!

## **CM Series High-Current Common Mode Chokes**

*For Telecom, Datacom, Industrial, and Automotive Applications*

**SPECIFIER QUICK ACTION SHEET**

## Background:

Today's electronics and electrical equipment features more functionality and performs in ever-higher switching frequencies (KHz to MHz). This demands higher power consumption and higher power conversion efficiency. Design trends also include next generation semiconductor applications (SiC, GaN). Designs must be more compact and have layouts accommodating higher density components. These factors will make both EMI and operating temperatures severe issues. Integrating the right common mode choke into the system design has proven to be a cost-effective solution and helps your device comply with regulations. We project use of high-current, broadband common mode chokes will increase at a steady pace. **Global leader Laird Steward addresses pain points caused by disruptive EMI over broadband frequencies.** CM Series common mode chokes are ideal for higher power density designs because they carry higher currents with the lowest possible rise in temperature. They support noise suppression over a much wider frequency band. What are other benefits? CM Series common mode chokes are significantly **smaller, more compact, and lighter.**

## More About the Laird Steward Difference:

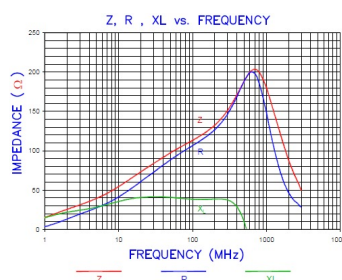
According to published product portfolios, common mode chokes are readily available from a variety of magnetics suppliers. Each offering purports to tackle conductive noise problems (i.e., 100KHz to 30MHz) and supports high currents up to 100amps. Some are said to resolve radiation noise problems (i.e., 30MHz to 1GHz) but support low- to mid-current applications up to 20amps only. Carefully evaluating these, **highly-experienced Laird Steward engineers have concluded there are few good choices among common mode choke product offerings** which can serve the joint needs of both broadband noise suppression (30MHz to 1GHz) *and* high-current (>20amps) applications, especially when design trends are making dual usage imperative.

Laird Steward CM series high-current common chokes are designed to provide the highest possible impedance over broadband frequencies while supporting application current up to 90amps (>90amps solutions are underdeveloped by Laird Steward currently). All are well suited for present day and future applications.

## CM Series High-Current Common Mode Choke Product Specifications\*:

Laird Steward Product Part Number	Outline Size	Rated Current	SRF in Differential Mode	Differential Mode Impedance Peak	SRF in Common Mode	Common Mode Impedance Peak
	(mm)	(Amps)	(MHz)	( $\Omega$ )	(MHz)	( $\Omega$ )
CM2545X171R-10	6.3x11x9	10	600	600	300	180
CM2021Y330R-10	5x5.6x2.8	15	1500	180	750	60
CM3440Z171B-10	8.5x10x11	20	700	480	250	170
CM5441Z161B-10	13.7x10.5x15	45	270	550	150	160
CM5441Z101B-10	14x10x10.5	45	450	420	300	110
CM8663Z161B-10	22x16x16.5	90	300	580	250	175

\* All of the data above are typical.



### Special Note:

Typical impedance over a broad range of frequency (10MHz to 2GHz). For reference only, non-binding to any specific P/N above, please contact your local Sales and FAE for more technical information on specific P/N.

## CM Series Features:

- Made with NiZn ferrite materials with superior impedance over a broad range frequency from 10MHz to 2GHz. CM Series is your ideal solution for radiation noise problems.
- MnZn ferrite version is also available upon request to tackle KHz to MHz low-frequency problems known as conductive noise problems.
- Support application current from 10A up to 90A+.
- Low DCR.
- High surface resistivity >5G OHMs (NiZn version only).
- Robust construction and high reliability. Customized designs available upon request.
- Automotive grade with AECQ200 compliance is available upon request.
- Support both SMT or THT.
- Small pin pitch and compact in size.
- Temperature rise <40°C at rated current.
- RoHS, HF and Reach compliant.

## Advantages:

- Laird Steward's unique, superior material composition results in 20% higher impedance than other products of a given identical, or a 20% smaller size (or lighter) of a given same impedance performance.
- Superior consistency of performance from lot to lot.
- Smaller pin pitch and smaller in size to save board layout space by up to 20% due to higher surface resistivity (G OHMs level) than other general solutions found in the market.
- Superior high current handling capabilities with less heat generation and improved electronic system power efficiency.
- Semi-automated or highly automated production is available because the entire CM Series features a manufacturing-friendly construction.
- High reliability with AECQ200 compliance.

## What is the benefit to our customers, bottom line?

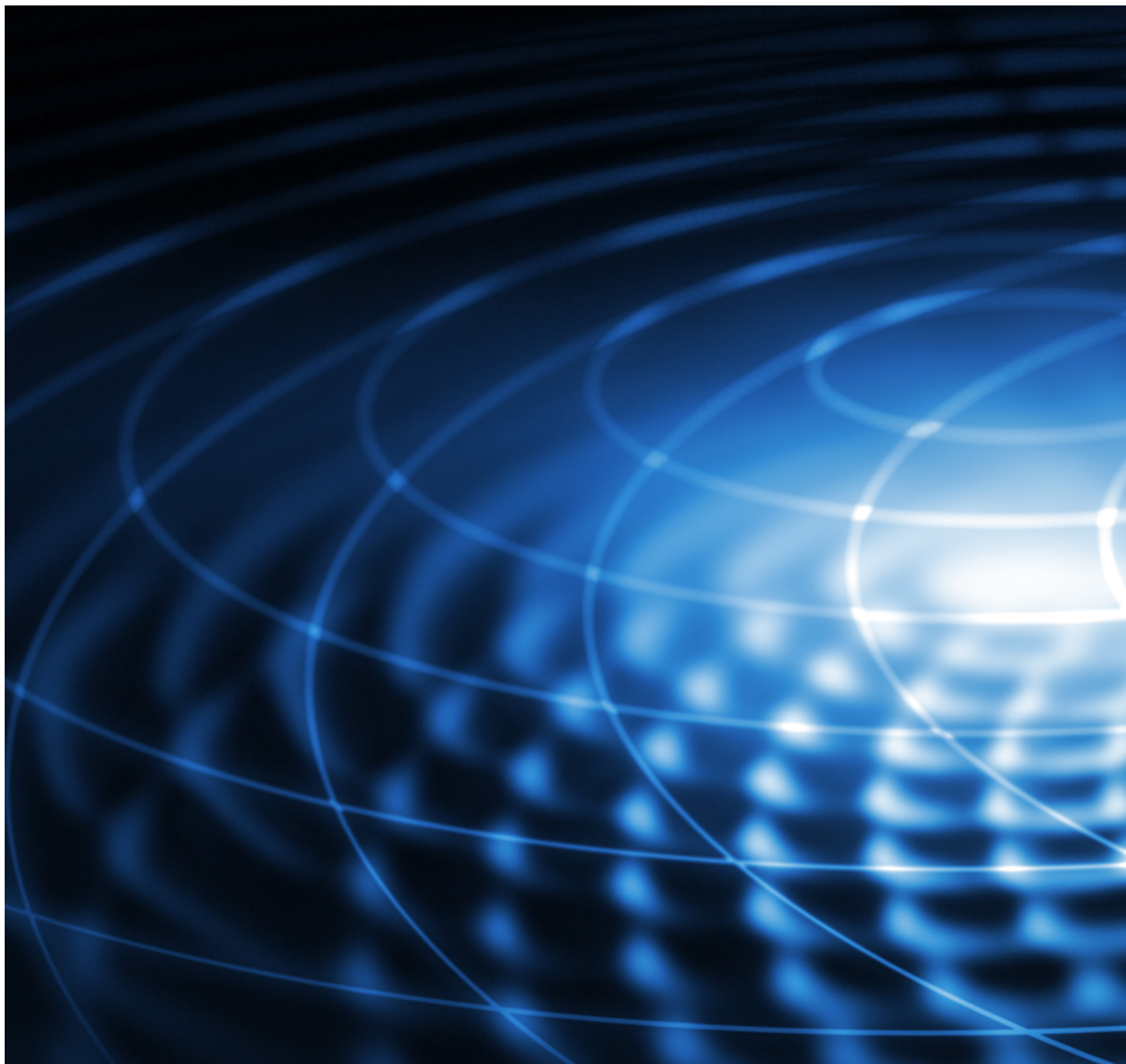
Laird Steward CM Series common mode chokes effectively address and resolve customer pain points involving radiated noise problems due to higher switching frequencies and higher power applications. **You reduce total EMC trouble-shooting** costs during your early design cycle. Our common mode chokes feature consistency of performance. Their high quality will result in less annual validation costs for customers after mass production.

## Additionally, our common mode chokes are:

- Easy to install. You lower the number of "assembly fails" from a manufacturing perspective and lower your total cost ownership.
- Effective in enhancing system level power efficiency particularly for high power applications.
- Enable more compact electronic designs and/or more multi-functional designs and/or higher performance designs.
- Highly regarded for securing the supply chain with good agility and flexibility in production scale up and competitive lead time.
- Renowned for reliability, reducing risk of failure/recalls (e.g., automotive applications).

## Compelling Applications:

- Ideal for DCDC common mode noise suppression for DCDC high power lines (rated 10A to 90A+), ideal for device power from hundreds to thousands of watts.
- DCDC power lines featuring the latest semiconductor technologies (SiC, GaN), which operate with hundreds of KHz up to MHz switching frequency.
- Other DCDC power lines for general telecom/datacom/industrial/automotive uses.



**Contact Laird Steward today!**

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