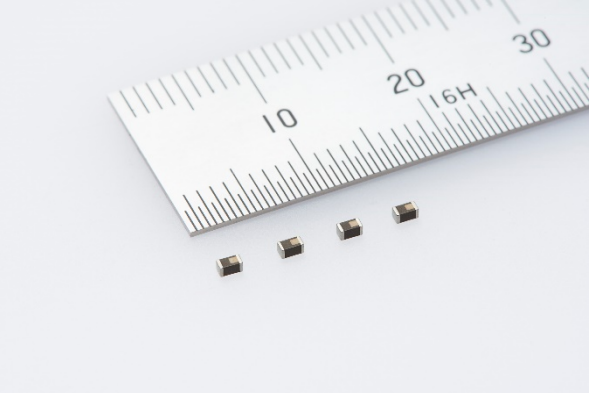
For immediate release

TAIYO YUDEN Launches Automotive Multilayer Metal Power Inductor

Small and Thin Multilayer-Type Products, Contributing to the Development of Smaller and Higher-Density Automotive ECUs



TOKYO, March 26, 2020—TAIYO YUDEN CO., LTD. has announced today mass-production of the AEC-Q200 (reliability qualification test standard for automotive passive components) qualified metal multilayer chip power inductor MCOIL™ MC series.

Taking advantage of miniaturization, one of the characteristics of the multilayer type, we have commercialized the automotive metal multilayer chip power inductor MCKK1608TR47MVC (1.6×0.8×1.0 mm, 0.47 μH). In addition, 2012-size products (2.0×1.25×1.0 mm) will be launched by the end of the year.

This product is designed for use as a choke coil in power supply circuits for ECUs that control automotive devices such as infotainment devices, ADAS (Advanced Driver Assistance System) units, and telematics systems.

Production of the product commenced at our subsidiary company, WAKAYAMA TAIYO YUDEN CO., LTD. (Inami-cho, Hidaka-gun, Wakayama prefecture, Japan) from March 2020, with a sample price of 50 yen per unit.

Technology Background

Vehicles produced recently are equipped with an ever greater number of electronic control units, typified by ADAS units. These units are designed in modules and embedded as ECUs for efficient layout in vehicle space. In addition, as more and more infotainment devices such as meter clusters will be combined into integrated cockpits, such units are also required to have higher performance. With the upcoming widespread adoption of fifth-generation mobile communications (5G) system services, recent telematics units are being equipped with greater functionality for realizing V2X services such as connected vehicles.

While the throughput of semiconductors has been enhanced with increases in functionality and features, embedded electronics components are required to be smaller and thinner so that such units can be placed at high density and integrated into a single module.

In response to this requirement, TAIYO YUDEN has realized high reliability compatible with AEC-Q200 by sophisticating the materials and multilayer technologies used in the metal multilayer chip power inductor MCOIL™ MC series, as the multilayer type has the advantage of realizing the development of smaller, thinner products.

TAIYO YUDEN focuses on the development of products that meet market needs, and will continue to expand its metal power inductor MCOIL™ product lineup.

■Application

Choke coils in power supply circuits for automotive ECUs in automotive infotainment devices, ADAS units, and telematics systems

■Characteristics (☆: production to commence by the end of the year)

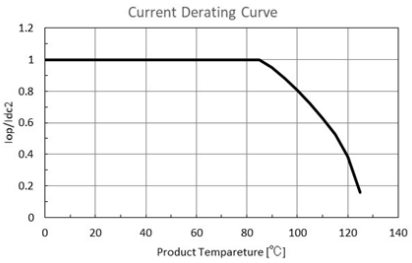
Part Number	L [mm]	W [mm]	H [mm] max.	Nominal inductance [μH]	Inductance tolerance [%]	Measuring frequency [MHz]	DC resistance [mΩ] max.	Rated current*3 [A] max.		
								Saturation current Idc1*1	Temperature rise current Idc2*2	
MCKK1608TR24MVC	1.6 ±0.2	0.8 ±0.2	1.0	0.24	±20	1	35	3.2	3.8	☆
MCKK1608TR33MVC				0.33			46	2.8	3.3	☆
MCKK1608TR47MVC				0.47			65	2.6	3.0	
MCKK2012TR24MVC	2.0 ±0.2	1.25 ±0.2	1.0	0.24			20	4.8	5.4	☆
MCKK2012TR33MVC				0.33			30	4.4	4.5	☆
MCKK2012TR47MVC				0.47			41	3.8	3.8	☆
MCKK2012T1R0MVC				1.00			85	2.7	2.7	☆

*1 The saturation current value (Idc1) is the DC current value having inductance decrease down to 30%. (at 20°C)

*2 The temperature rise current value (Idc2) is the DC current value having temperature increase up to 40°C. (at 20°C)

*3 The rated current is the DC current value that satisfies both of current value saturation current value and temperature rise current value.

* Derating of rated current is necessary depending on the ambient temperature. Derate the current to use by referring to the following graph.



Note: The product are tested based on the test conditions and methods defined in AEC-Q200. Please consult with TAIYO YUDEN for the details of the product specifications and AEC-Q200 test results, etc., and please review and approve TAIYO YUDEN's product specifications before ordering.

TAIYO YUDEN CO., LTD. Product Inquiries: https://www.yuden.co.jp/or/contact/