Panasonic
INDUSTRY

Power Inductors

Power Choke Coil (Low DCR type)

PCC-M0740L (MC) series

Small mounting size for multi-phase DC/DC converter circuits

Industrial property : Patents 2 (Pending)

Features

- Small type (8.7×7.0×H4.0 mm)
- High power (17 A to 24 A)
- Low loss (DCR : 1.0 to 1.5 mΩ)
- Tighter DCR tolerance (±7 %)
- Suitable for high frequency circuit (up to 1 MHz)
- Low buzz noise due to its gap-less structure
- Shielded construction
- RoHS compliant

Recommended applications

- Notebook and Desktop PC power supply modules
- Servers, Routers, DC/DC converters for driving CPUs

Standard packing quantity (Minimum quantity/Packing unit)

- 3,000 pcs/box (2 reel)

Explanation of part numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	T	Q	P	4	L						
Product code			Classification	Size	Winding	Inductance			Core	Packaging	Suffix

Standard parts

Part No.	Inductance (at 20℃)[*1]			Rated current (A)[*2]	Rated current (reference) (A)[*3]	DC resistance (at 20℃) (mΩ) max.
	L0 at 0A	L1[*4]				
	(μH)	(μH)	Measurement current (A)			
ETQP4LR15AFM	0.15±20 %	(0.13)	29	29	43.0	0.66±7 %
ETQP4LR24AFM	0.24±20 %	(0.20)	24	24	35.5	1.00±7 %
ETQP4LR36AFM	0.36±20 %	(0.30)	20	20	31.0	1.35±7 %
ETQP4LR42AFM	0.42±20 %	(0.35)	17	17	28.5	1.50±7 %

*1: Inductance is measured at 1.0 MHz.

*2: Rated current defines actual value of DC current, when temperature rise of coil becomes 40 K. (Method A)

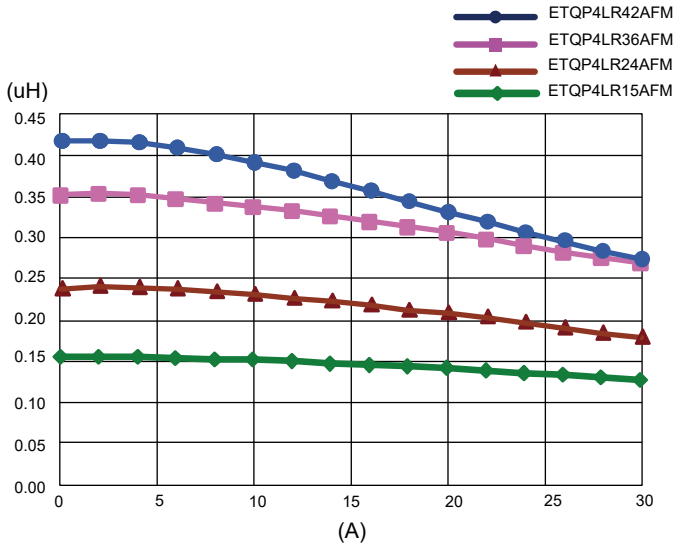
*3: Rated current (reference) defines actual value of DC current, when temperature rise of coil becomes 40 K. (Method B)

*4: Reference only

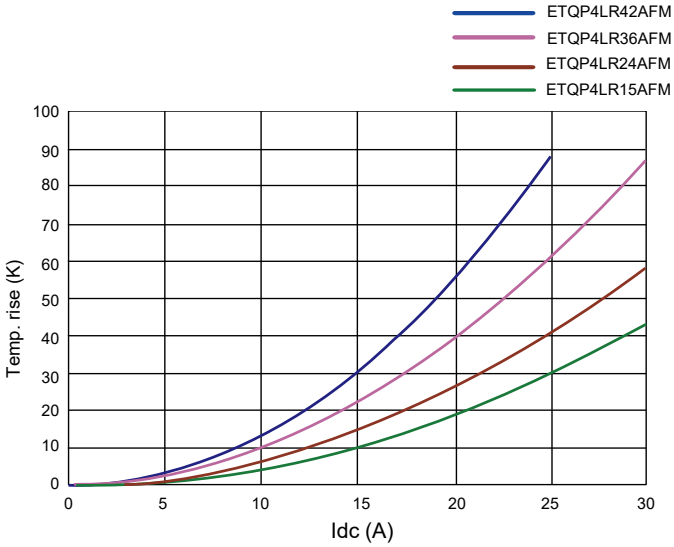
◆ Method A (PANASONIC's standard measurement conditions), Method B (high heat dissipation measurement) is different from Method A by the measurement methods. In normal application condition, the part's temperature depends on circuit design and heat dissipation condition. This condition shall be verified by the worst operational condition.

Performance characteristics (Reference)

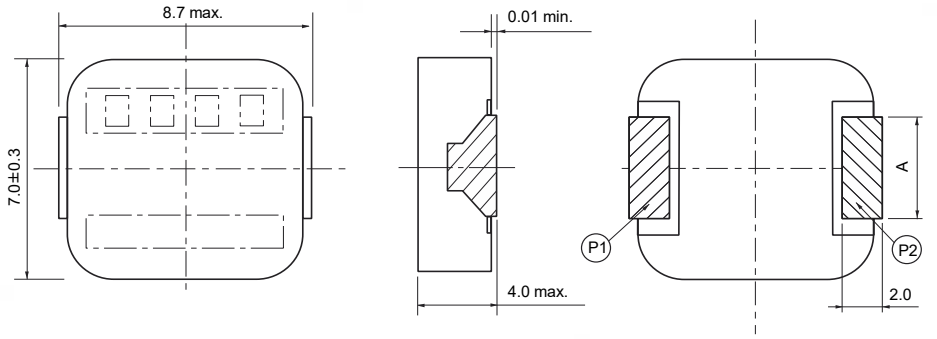
Inductance vs DC Current



Case Temperature vs DC Current（Method A）



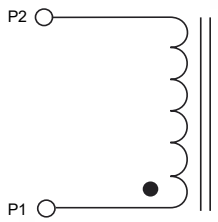
Dimensions in mm (not to scale)



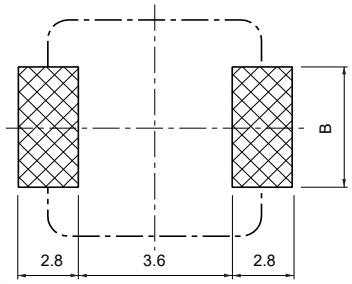
Unit : mm

Part No.	A
ETQP4LR15AFM	3.0±0.3
ETQP4LR24AFM	
ETQP4LR36AFM	2.0±0.3
ETQP4LR42AFM	

Connection



Recommended land patterns in mm (not to scale)



Unit : mm

Part No.	B
ETQP4LR15AFM	3.6
ETQP4LR24AFM	
ETQP4LR36AFM	2.6
ETQP4LR42AFM	

■ **As for soldering conditions and safety precautions (Power choke coils for consumer use), please see data files.**

Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

■ If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.

■ The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.

■ Please ensure the safety by means of protection circuit, redundant circuit etc. in your system design in order to prevent the occurrence of life crisis and other serious damages due to the failure of our products.

■ The products and product specifications described in this online catalog are subject to change for improvement without prior notice. Therefore, please be sure to request and confirm the latest product specifications which explain the specifications of our products in detail, before you finalize the design of your applications, purchase, or use our products.

■ The technical information in this online catalog provides examples of our products' typical operations and application circuits. We do not guarantee the non-infringement of third party's intellectual property rights and we do not grant any license, right, or interest in our intellectual property.

■ If any of our products, product specifications and/or technical information in this catalog is to be exported, the laws and regulations of the exporting country, especially with regard to security and export control, shall be observed.

<Regarding the Certificate of Compliance with the EU RoHS Directive/REACH Regulations>

■ The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.

■ When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

Please note that we do not owe any liability and responsibility if our products are used beyond the description of this catalog or without complying with precautions in this catalog.

⚠ Application Guidelines (For consumer)

1. Safety precautions

- When using our products, no matter what sort of equipment they might be used for, be sure to make a written agreement on the specifications with us in advance. The design and specifications in this catalog are subject to change without prior notice.
- Do not use the products beyond the specifications described in this catalog.
- This catalog explains the quality and performance of the products as individual components. Before use, check and evaluate their operations when installed in your products.
- Install the following systems for a failsafe design to ensure safety if these products are to be used in equipment where a defect in these products may cause the loss of human life or other significant damage, such as damage to vehicles (automobile, train, vessel), traffic lights, medical equipment, aerospace equipment, elec tric heating appliances, combustion/gas equipment, rotating equipment, and disaster/crime prevention equipment.
  ✻ Systems equipped with a protection circuit and a protection device.
  ✻ Systems equipped with a redundant circuit or other system to prevent an unsafe status in the event of a single fault.

2. Precautions for use

2-1. Provision to abnormal condition

This power choke coil itself does not have any protective function in abnormal condition such as overload, short-circuit and open-circuit conditions, etc.
Therefore, it shall be confirmed as the end product that there is no risk of smoking, fire, dielectric withstand voltage, insulation resistance, etc. in abnormal conditions to provide protective devices and/or protection circuit in the end product.

2-2. Temperature rise

Temperature rise of power choke coil depends on the installation condition in end products. It shall be confirmed in the actual end product that temperature rise of power choke coil is in the limit of specified temperature class.

2-3. Dielectric strength

Dielectric withstanding test with higher voltage than specific value will damage Insulating material and shorten its life.

2-4. Water

This Power choke coil must not be used in wet condition by water, coffee or any liquid because insulation strength becomes very low in such condition.

2-5. Potting

If this power choke coil is potted in some compound, coating material of magnet wire might be occasionally damaged. Please ask us if you intend to pot this power choke coil.

2-6. Solvent

If this power choke coil is dipped in the cleaning agent, and the coating agent of the toluene and the xylene system, there is a possibility that the performance decreases greatly. Please ask us if you intend to pot this power choke coil.

2-7. Static electricity measures

① Circuit design
Please set up the ESD measures parts such as capacitors in the former steps of this power choke coil for static electricity when there is a possibility that static electricity is impressed to the choke coil on the circuit.
Moreover, please consult our company about such a case once.

② Treatment with single
(Processes and Equipment) If a voltage of 200 V or more is applied to the power choke coil, the characteristics may change. Take measures against static electricity when handling the power choke coil alone.
Operate at 200 V or less.

2-8. Core Chipping and Core Crack

This choke coil has a possibility to make partial chipping or crack in the core due to excessive mechanical stress from outside, and might have initially a partial chipping and/or cracks that do not affect the quality.

2-9. Storage temperature

−5 ℃ to +35 ℃

2-10. Operating temperature

Minimum temperature : −40 ℃ (Ambient temperature of the power choke coil)

Maximum temperature : 130 ℃ (Ambient temperature of the power choke coil plus the temperature rise)
100 ℃ (Only series : PCC-F126F(N6))

2-11. Model

When this power choke coil is used in a similar or new product to the original one, it might be unable to satisfy he specifications due to difference of condition of usage.

Please ask us if you use this power choke coil in the manner such as above.

When using this product for amusement purposes, contact our sales representative as it is necessary to fix the font in order to display the seal.

2-12. Drop

If the power choke coil receives mechanical stress such as drop, characteristics may become poor (due to damage on coil bobbin, etc.). Never use such stressed power choke coil.

＜Package markings＞

Package markings include the product number, quantity, and country of origin.

In principle, the country of origin should be indicated in English.