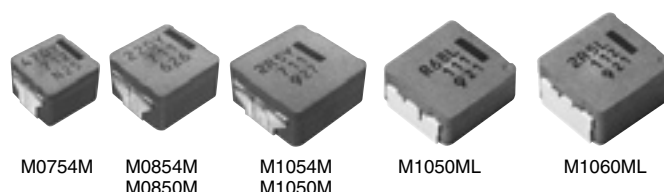


## Power Choke Coil for Automotive application

Series: **PCC-M0754M (MC)**  
**PCC-M0854M (MC)**  
**PCC-M0850M (MC)**  
**PCC-M1054M (MC)**  
**PCC-M1050M (MC)**  
**PCC-M1050ML (MC)**  
**PCC-M1060ML (MC)**



Realize high heat resistance and high reliability with metal composite core(MC)

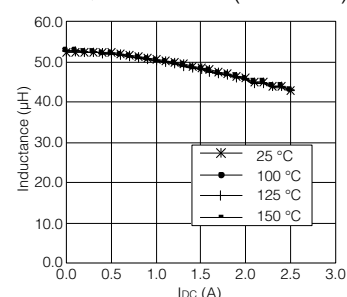
Industrial Property : patents 21 (Registered 2/Pending 19)

### ■ Features

- High heat resistance : Operation up to 150 °C
- High-reliability : High vibration resistance due to newly developed integral construction and severe reliability condition of automotive application is covered
- High bias current : Excellent inductance stability by using ferrous alloy magnetic material(Fig.1)
- Temp. stability : Excellent inductance stability in wide temp. range (Fig.1)
- Low buzz noise : New metal composite core technology
- High efficiency : Low  $R_{DC}$  of winding and low eddy-current loss of the core
- AEC-Q200 qualified
- RoHS compliant

● Fig.1 Inductance v.s. DC current, Temp.

ETQP5M470YFM(reference)



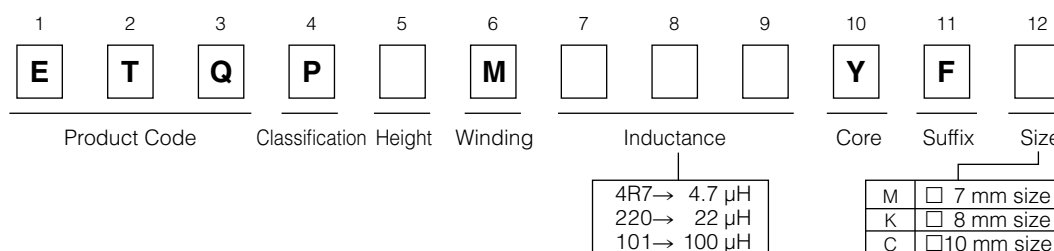
### ■ Recommended Applications

- Noise filter for various drive circuitry requiring high temp. operation and peak current handling capability
- DC-DC converters

### ■ Standard Packing Quantity

- 1000 pcs./2 Reel

### ■ Explanation of Part Numbers



### ■ Temperature rating

Operating temperature range		Tc : -40 °C to +150 °C(Including self-temperature rise)
Storage condition	After PWB mounting	
	Before PWB mounting	Ta : -5 °C to +35 °C 85%RH max.

## 1. Series PCC-M0754M (ETQP5M□□□YFM)

### ■ Standard Parts

Series	Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)		
		L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	ΔT=40K		ΔL=-30%
						(*2)	(*3)	(*4)
PCC-M0754M [7.5×7.0×5.4(mm)]	ETQP5M4R7YFM	4.7	±20	20(23)	±10	6.3	8.0	13.1
	ETQP5M220YFM	22		92(102)		3.0	3.7	5.8
	ETQP5M330YFM	34		120(132)		2.6	3.3	4.8
	ETQP5M470YFM	48		156(172)		2.3	2.9	4.1

(\*1) Measured at 100 kHz.

(\*2) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on four-layer PWB (1.6 mm FR4) and measured at room temperature. See also (\*5)

(\*3) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on multilayer PWB with high heat dissipation performance. Note: Heat radiation constant is approx. 31 K/W measured on 7.5×7.0×5.4 mm case size. See also (\*5)

(\*4) Saturation rated current : DC current which causes L(0) drop -30 %.

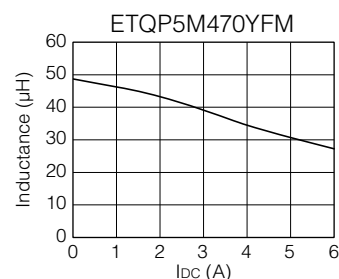
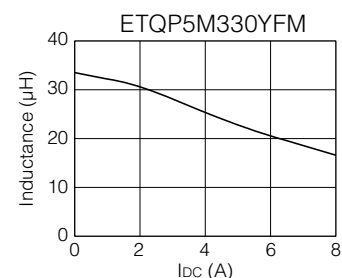
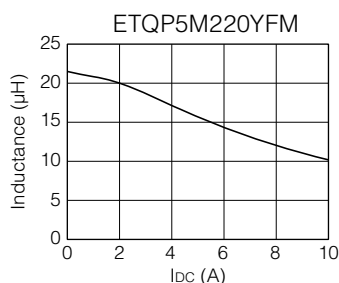
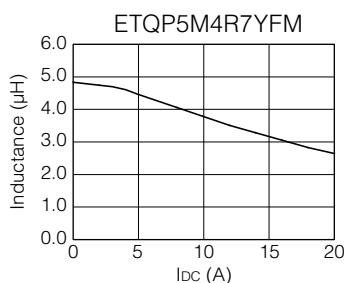
(\*5) Within a suitable application, the part's temperature depends on circuit design and certain heat dissipation conditions. This should be double checked in a worst case operation mode.

In normal case, the max. standard operating temperature of +150 °C should not be exceeded.

For higher operating temperature conditions, please contact Panasonic representative in your area.

### ■ Performance Characteristics (Reference)

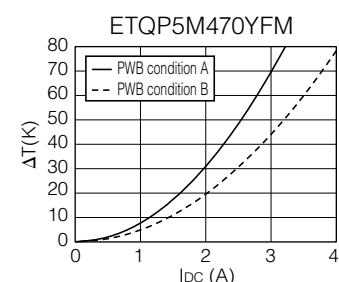
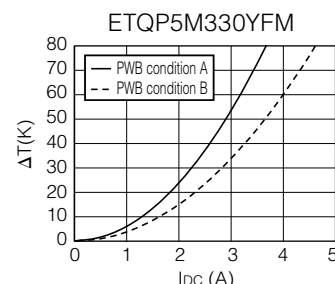
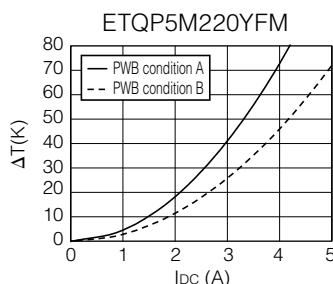
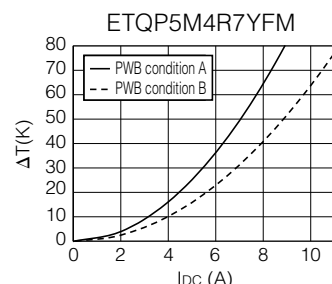
#### ● Inductance vs DC Current



#### ● Case Temperature vs DC Current

PWB condition A : Four-layer PWB (1.6 mm FR4), See also (\*2)

PWB condition B : Multilayer PWB with high heat dissipation performance. See also (\*3)



## 2. Series PCC-M0854M/PCC-M0850M (ETQP5M□□□YFK/ETQP5M□□□YGK)

### ■ Standard Parts

Series	Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)		
		L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	ΔT=40K		ΔL=-30%
						(*2)	(*3)	
PCC-M0854M [8.5×8.0×5.4(mm)]	ETQP5M2R5YFK	2.5	±20	7.6(8.4)	±10	11.9	14.0	20.1
	ETQP5M100YFK	10		33(37)		5.7	6.7	13.0
	ETQP5M220YFK	22		63(70)		4.1	4.8	6.9
	ETQP5M470YFK	48		125(138)		2.9	3.4	5.4
PCC-M0850M [8.5×8.0×5.0(mm)]	ETQP5M101YGK	100	±20	302(333)	±10	1.7	2.1	3.0

(\*1) Measured at 100 kHz.

(\*2) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on four-layer PWB (1.6 mm FR4) and measured at room temperature. See also (\*5)

(\*3) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on multilayer PWB with high heat dissipation performance. Note: Heat radiation constant are approx. 27 K/W measured on 8.5×8.0×5.4 mm case size and approx. 29 K/W measured on 8.5×8.0×5.0 mm case size. See also (\*5)

(\*4) Saturation rated current : DC current which causes L(0) drop -30 %.

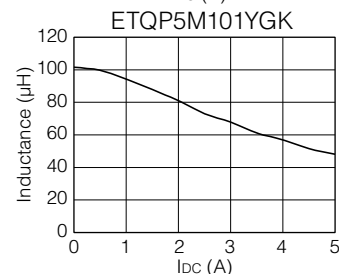
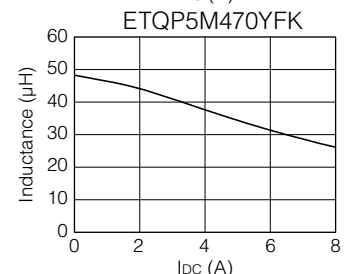
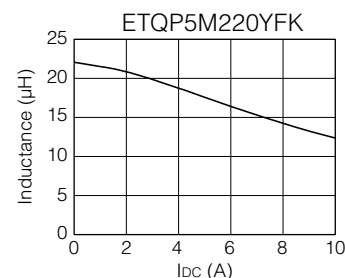
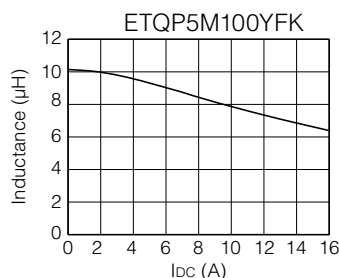
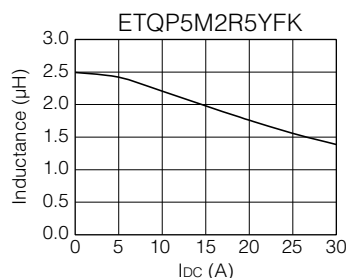
(\*5) Within a suitable application, the part's temperature depends on circuit design and certain heat dissipation conditions. This should be double checked in a worst case operation mode.

In normal case, the max.standard operating temperature of + 150 °C should not be exceeded.

For higher operating temperature conditions, please contact Panasonic representative in your area.

### ■ Performance Characteristics (Reference)

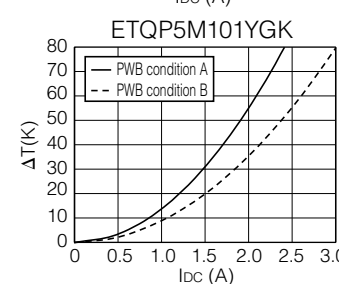
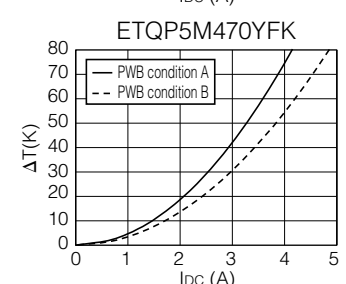
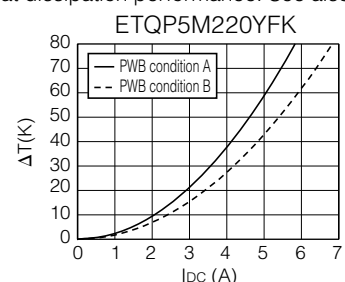
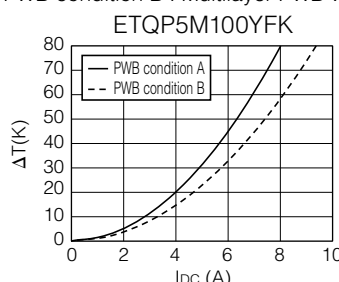
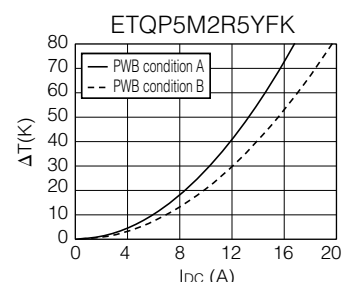
#### ● Inductance vs DC Current



#### ● Case Temperature vs DC Current

PWB condition A : Four-layer PWB (1.6 mm FR4), See also (\*2)

PWB condition B : Multilayer PWB with high heat dissipation performance. See also (\*3)



## 3. Series PCC-M1054M/PCC-M1050M (ETQP5M□□□YFC/ETQP5M□□□YGC)

### ■ Standard Parts

Series	Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)		
		L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	ΔT=40K		ΔL=-30%
						(*2) (*)	(*3) (*)	
PCC-M1054M [10.7×10.0×5.4(mm)]	ETQP5M2R5YFC	2.5	±20	5.3(5.9)	±10	15.1	18.1	27.2
	ETQP5M3R3YFC	3.3		7.1(7.9)		13.1	15.7	22.7
	ETQP5M4R7YFC	4.7		10.2(11.3)		10.9	13.1	20.0
	ETQP5M100YFC	10		23.8(26.2)		7.1	8.5	10.7
	ETQP5M220YFC	22		45(50)		5.2	6.2	6.7
PCC-M1050M [10.7×10.0×5.0(mm)]	ETQP5M101YGC	97	±20	208(229)	±10	2.2	2.7	3.0

(\*1) Measured at 100 kHz.

(\*2) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on four-layer PWB (1.6 mm FR4) and measured at room temperature. See also (\*5)

(\*3) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on multilayer PWB with high heat dissipation performance. Note: Heat radiation constant are approx. 23 K/W measured on 10.7×10.0×5.4 mm case size and approx. 26 K/W measured on 10.7×10.0×5.0 mm case size. See also (\*5)

(\*4) Saturation rated current : Dc current which causes L(0) drop -30 %.

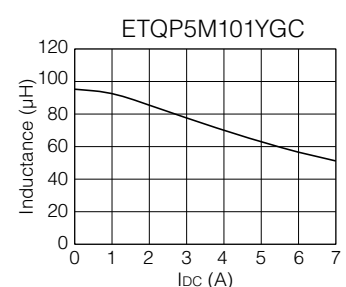
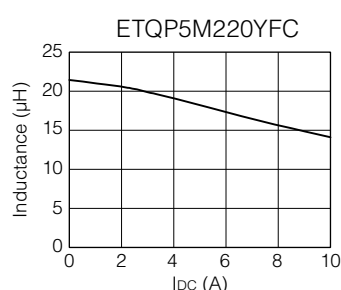
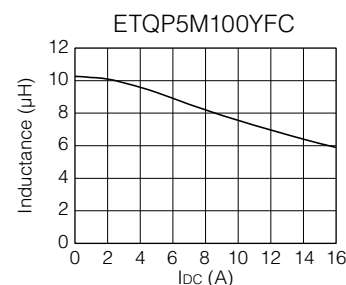
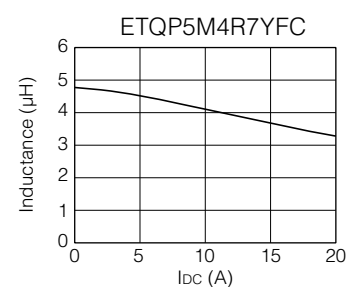
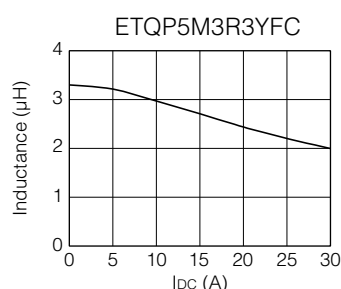
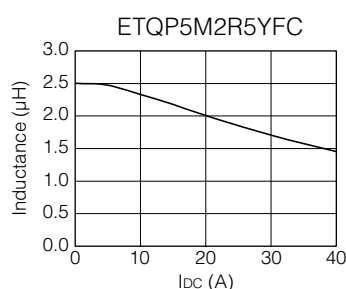
(\*5) Within a suitable application, the part's temperature depends on circuit design and certain heat dissipation conditions. This should be double checked in a worst case operation mode.

In normal case, the max.standard operating temperature of +150 °C should not be exceeded.

For higher operating temperature conditions, please contact Panasonic representative in your area.

### ■ Performance Characteristics (Reference)

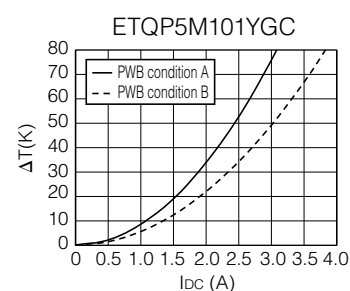
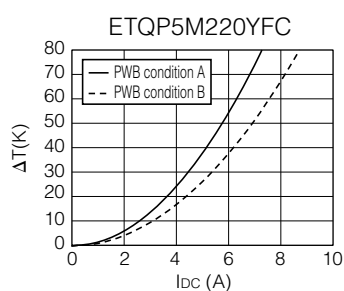
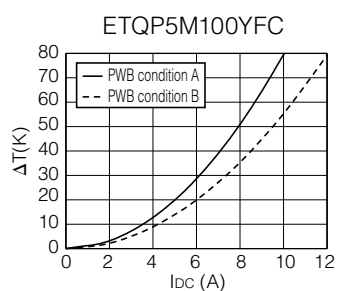
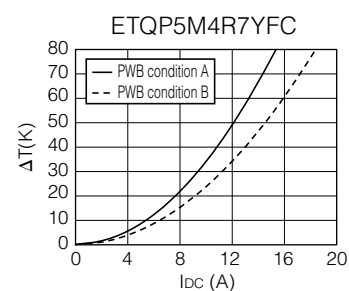
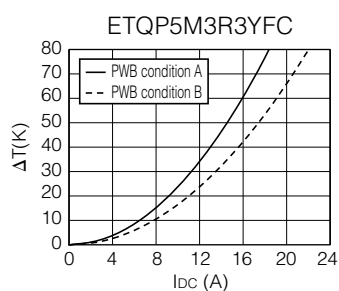
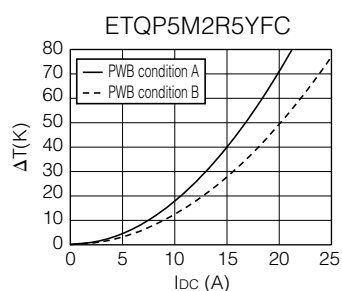
#### ● Inductance vs DC Current



### ● Case Temperature vs DC Current

PWB condition A : Four-layer PWB (1.6 mm FR4), See also (\*2)

PWB condition B : Multilayer PWB with high heat dissipation performance. See also (\*3)



## 4. Series PCC-M1050ML/PCC-M1060ML (ETQP5M□□□YLC/ETQP6M□□□YLC)

### ■ Standard Parts

Series	Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)		
		L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	ΔT=40K		ΔL=−30% (*4)
						(*2)	(*3)	
PCC-M1050ML [10.9×10.0×5.0(mm)]	ETQP5MR68YLC	0.68	±20	1.75 (1.93)	±10	26.3	31.5	42.0
PCC-M1060ML [10.9×10.0×6.0(mm)]	ETQP6M2R5YLC	2.5	±20	4.5 (5.0)	±10	16.3	19.6	27.0

(\*1) Measured at 100 kHz.

(\*2) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on four-layer PWB (1.6 mm FR4) and measured at room temperature. See also (\*5)

(\*3) DC current which causes temperature rise of 40 K. Parts are soldered by reflow on multilayer PWB with high heat dissipation performance. Note: Heat radiation constant are approx. 23 K/W measured on 10.9×10.0×5.0 mm case size and approx. 23 K/W measured on 10.9×10.0×6.0 mm case size. See also (\*5)

(\*4) Saturation rated current : Dc current which causes L(0) drop −30 %.

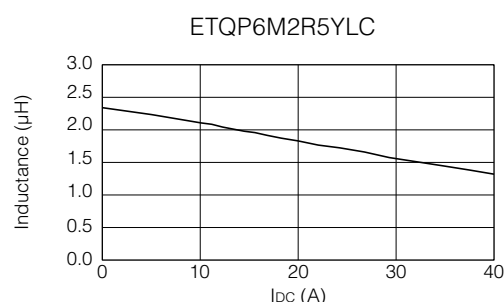
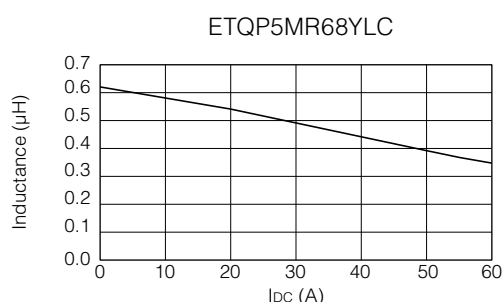
(\*5) Within a suitable application, the part's temperature depends on circuit design and certain heat dissipation conditions. This should be double checked in a worst case operation mode.

In normal case, the max.standard operating temperature of +150 °C should not be exceeded.

For higher operating temperature conditions, please contact Panasonic representative in your area.

### ■ Performance Characteristics (Reference)

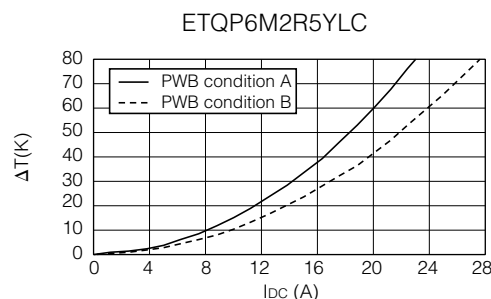
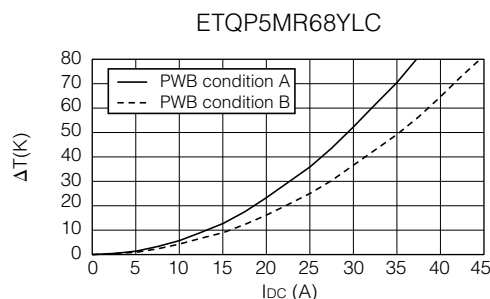
#### ● Inductance vs DC Current



#### ● Case Temperature vs DC Current

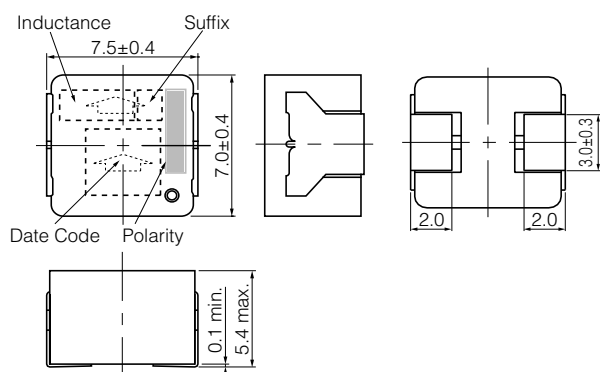
PWB condition A : Four-layer PWB (1.6 mm FR4), See also (\*2)

PWB condition B : Multilayer PWB with high heat dissipation performance. See also (\*3)

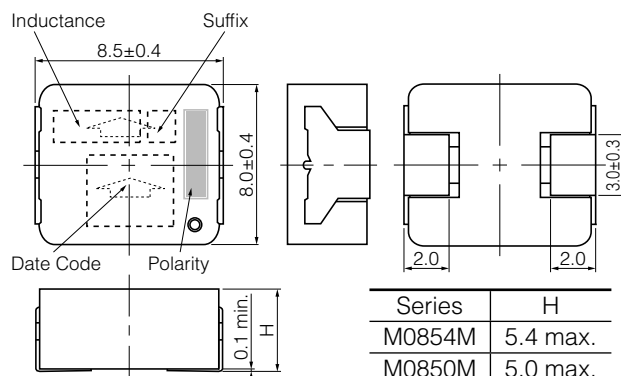


- Dimensions in mm (not to scale)  
Dimensional tolerance unless noted :  $\pm 0.5$

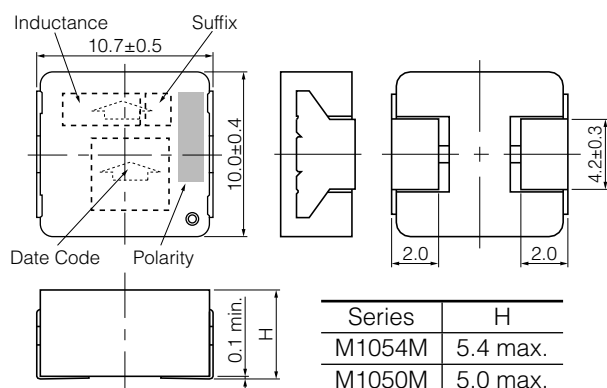
Series PCC-M0754M  
(ETQP5M□□□YFM)



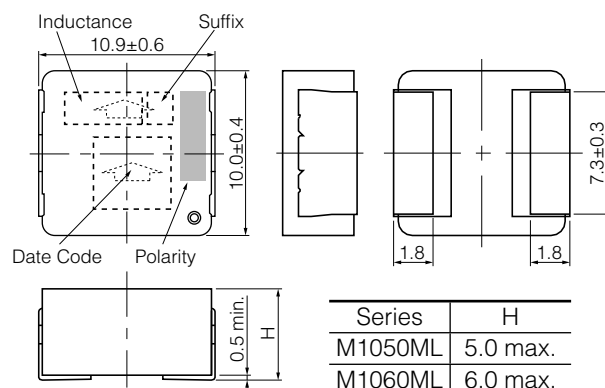
Series PCC-M0854M  
Series PCC-M0850M  
(ETQP5M□□□YFK/YGK)



Series PCC-M1054M  
Series PCC-M1050M  
(ETQP5M□□□YFC/YGC)

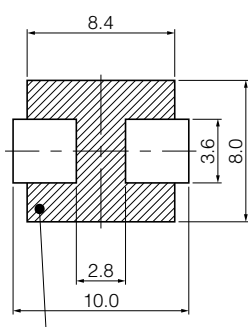


Series PCC-M1050ML  
Series PCC-M1060ML  
(ETQP5M□□□YLC/ETQP6M□□□YLC)



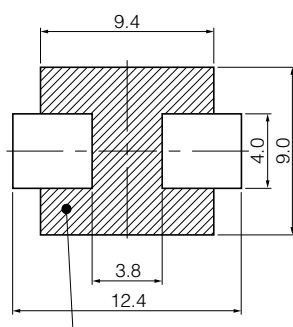
- Recommended Land Pattern in mm (not to scale)  
Dimensional tolerance unless noted :  $\pm 0.5$

Series PCC-M0754M  
(ETQP5M□□□YFM)



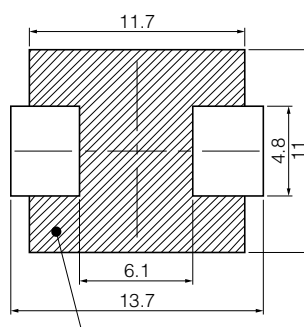
Don't wire on the pattern on shaded portion the PWB.

Series PCC-M0854M  
Series PCC-M0850M  
(ETQP5M□□□YFK/YGK)



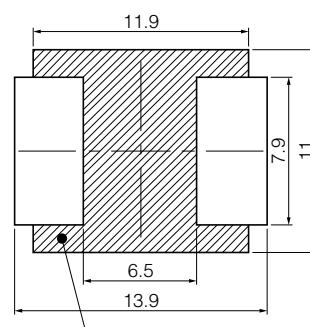
The same as the left.

Series PCC-M1054M  
Series PCC-M1050M  
(ETQP5M□□□YFC/YGC)



The same as the left.

Series PCC-M1050ML  
Series PCC-M1060ML  
(ETQP5M□□□YLC/ETQP6M□□□YLC)



The same as the left.

- Packaging Methods, Soldering Conditions and Safety Precautions (Power Choke Coils for high reliability use)  
Please see Data Files



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.