

## Power Choke Coil (Automotive Grade)

Series: **PCC-M0854MS (MC)**  
**PCC-M1050MS (MC)**



High heat resistance and high reliability  
 Using metal composite core (MC)

Industrial Property : patents 18 (Registered 10/Pending 8)

### Features

- The vibration-resistant structure achieves a vibration acceleration-resistance of 50 G or higher in 150 °C environments
- Reduce core loss in high frequency band (More than 2 MHz)
- High heat resistance : Operation up to 150 °C including self-heating
- SMD type
- High-reliability : High vibration resistance as result of newly developed integral construction; under severe reliability conditions of automotive and other strenuous applications
- High bias current : Excellent inductance stability using ferrous alloy magnetic material
- Temp. stability : Excellent inductance stability over broad temp. range
- Low audible (buzz) noise : New metal composite core technology
- High efficiency : Low  $R_{DC}$  of winding and low eddy-current loss of the core
- Shielded construction
- AEC-Q200 Automotive qualified
- RoHS compliant

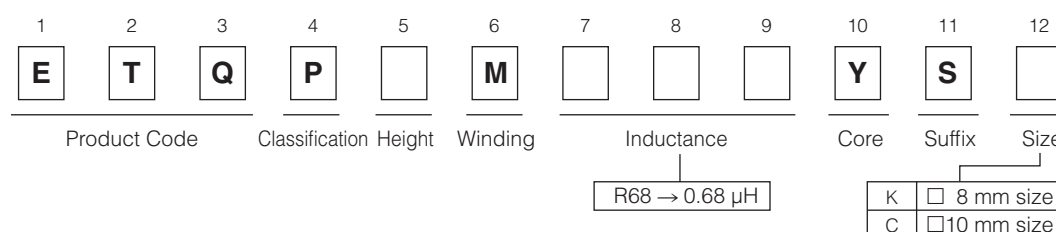
### Recommended Applications

- ECU placed in the engine itself, mechanical-electrical-integrated ECU
- Noise filter for various drive circuitry requiring high temp. operation and peak current handling capability
- Boost-Converter, Buck-Converter DC/DC

### Standard Packing Quantity (Minimum Quantity/Packing Unit)

- 1,000 pcs/box (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.

## Standard Parts

Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)			Series
	L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	ΔT=40K		ΔL=−30%	
					(*2)	(*3)	(*4)	
ETQP5M2R5YSK	2.45	±20	7.40 (8.14)	±10	12.0	14.1	21.7	PCC-M0854MS [8.5×8.0×5.4(mm)]
ETQP5MR68YSC	0.68		1.66 (1.83)		27.0	32.3	40.0	PCC-M1050MS [10.9×10.0×5.0(mm)]

(\*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. 30 K/W measured on 8.5×8.0×5.4 mm case size and approx. 20 K/W measured on 10.9×10.0×5.0 mm case size. See also (\*5)

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

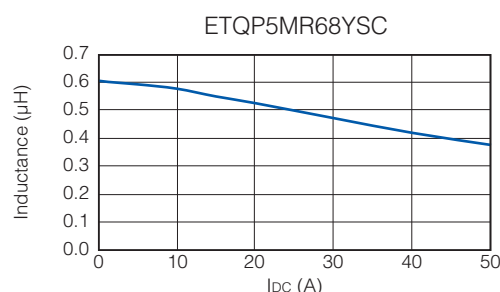
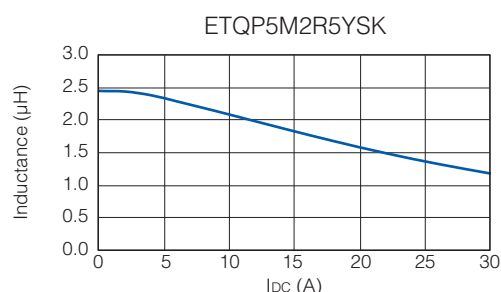
(\*5) Within a suitable application, the part's temperature depends on circuit design and certain heat dissipation conditions. This should be double checked in a worst case operation mode.

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)

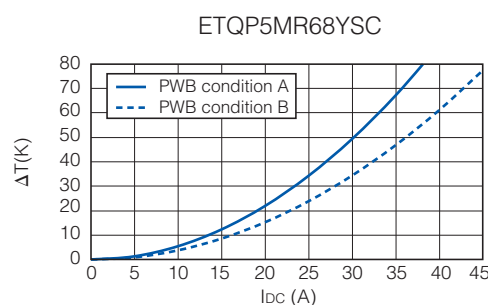
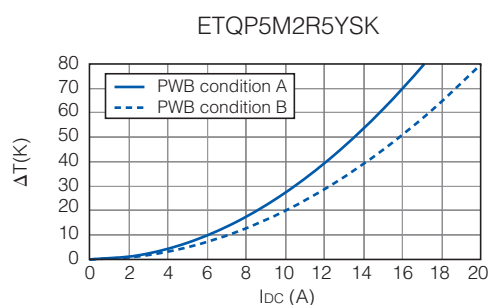
### ● Inductance vs DC Current



### ● Case Temperature vs DC Current

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

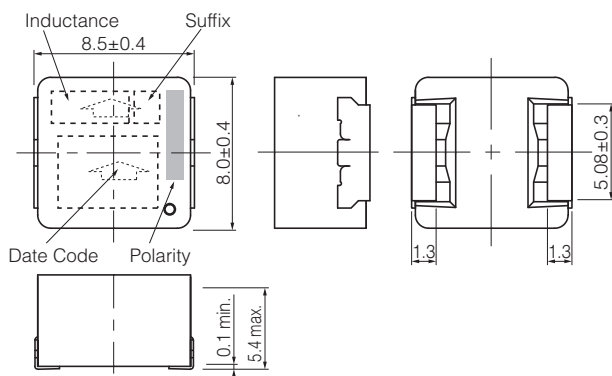
PWB condition B : Multilayer PWB with high heat dissipation performance. See also (\*3)



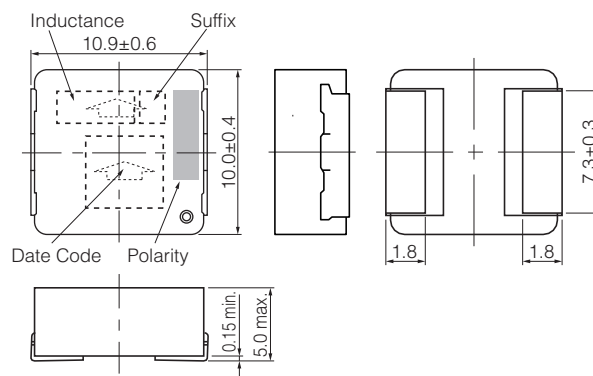
## Dimensions in mm (not to scale)

Dimensional tolerance unless noted : ±0.5

### Series PCC-M0854MS (ETQP5M□□□YSK)



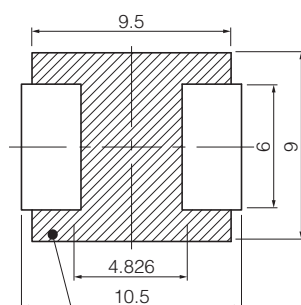
### Series PCC-M1050MS (ETQP5M□□□YSC)



## Recommended Land Pattern in mm (not to scale)

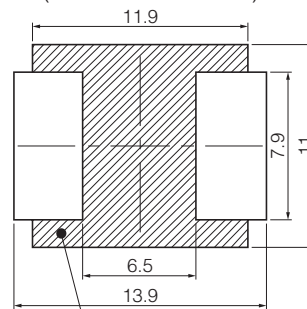
Dimensional tolerance unless noted :  $\pm 0.5$

Series PCC-M0854MS  
(ETQP5M□□□YSK)



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

Series PCC-M1050MS  
(ETQP5M□□□YSC)



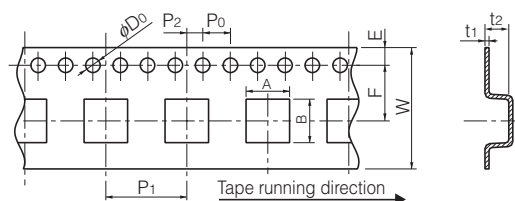
The same as the left.

## As for Soldering Conditions and Safety Precautions (Power Choke Coils (Automotive Grade)),

Please see Data Files

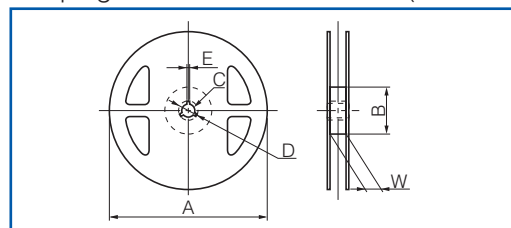
## Packaging Methods (Taping)

### ● Embossed Carrier Tape Dimensions in mm (not to scale)



Series	A	B	W	E	F	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	φD <sub>0</sub>	t <sub>1</sub>	t <sub>2</sub>
PCC-M0854MS	9.1	8.6	16.0	1.75	7.5	12.0	2.0	4.0	1.5	0.4	6.0
PCC-M1050MS	10.65	11.75	24.0		11.5	16.0				0.5	6.35

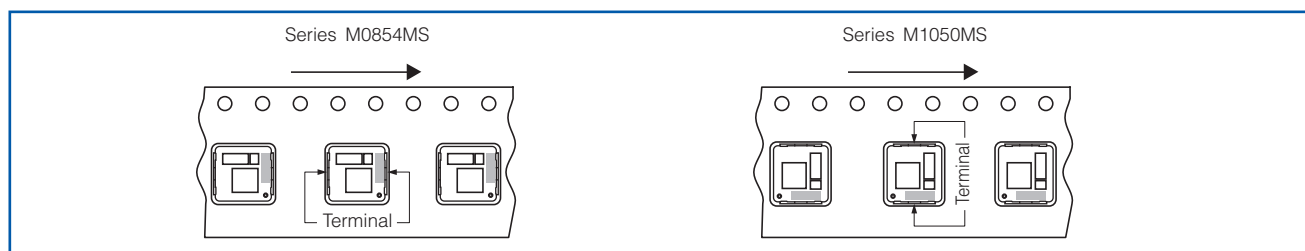
### ● Taping Reel Dimensions in mm (not to scale)



Standard Reel Dimensions

Series	A	B	C	D	E	W
PCC-M0854MS	330	100	13	21	2	17.5
PCC-M1050MS						25.5

## Component Placement (Taping)



## Standard Packing Quantity/Reel

Series	Part No.	Minimum Quantity / Packing Unit	Quantity per reel
PCC-M0854MS	ETQP5M□□□YSK	1,000 pcs / box (2 reel)	500 pcs
PCC-M1050MS	ETQP5M□□□YSC	1,000 pcs / box (2 reel)	500 pcs

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