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

1	2	3	4	5	6	7	8	9	10	11	12
E	T	Q	P		M				Y	S	
Product Code			Classification	Height	Winding	Inductance			Core	Suffix	Size

R68 → 0.68 µH

K	□ 8 mm size
C	□10 mm size

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

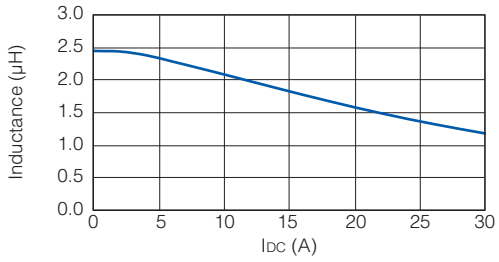
Part No.	Inductance *1		DCR (at 20 °C) (mΩ)		Rated Current (Typ. : A)			Series
	L0 (μH)	Tolerance (%)	Typ. (max.)	Tolerance (%)	△T=40K (*2)	△T=40K (*3)	△L=–30% (*4)	
NEW ETQP5M2R5YSK	2.45	±20	7.40 (8.14)	±10	12.0	14.1	21.7	PCC-M0854MS [8.5×8.0×5.4(mm)]
ETQP5MR68YSC	0.68		1.66 (1.83)		27.0	32.3	40.0	PCC-M1050MS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

ETQP5M2R5YSK



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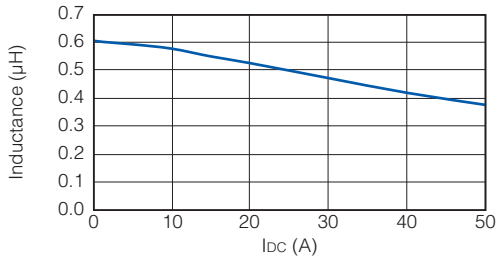
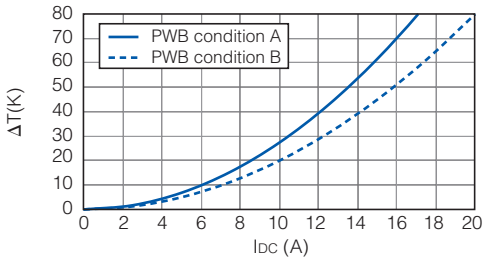


● Case Temperature vs DC Current

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)

ETQP5M2R5YSK



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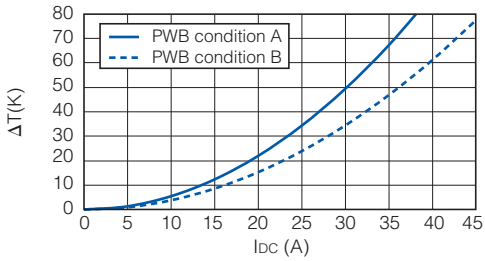
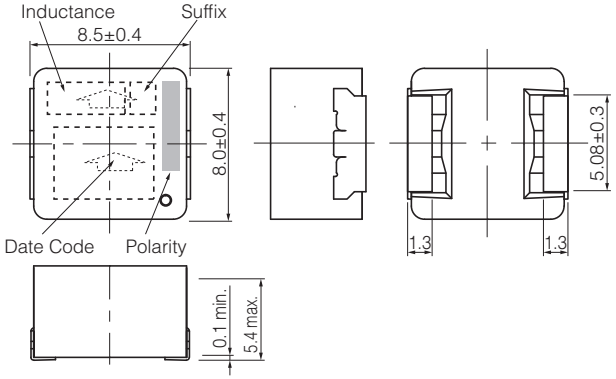


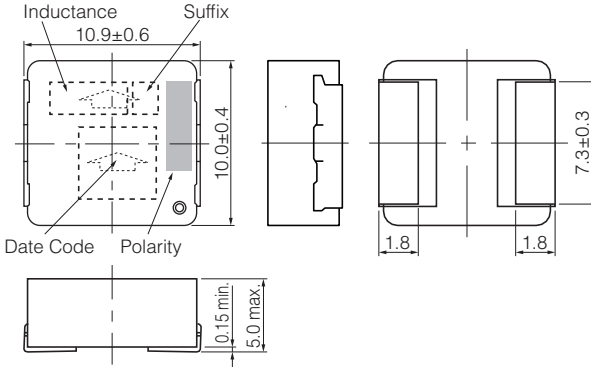
Dimensions in mm (not to scale)

Dimensional tolerance unless noted : ±0.5

Series PCC-M0854MS
(ETQP5M□□□YSK)



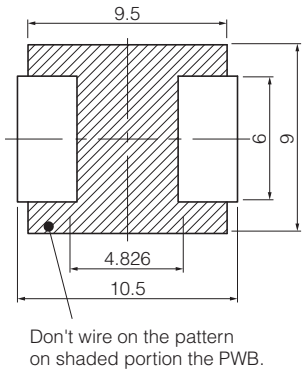
Series PCC-M1050MS
(ETQP5M□□□YSC)



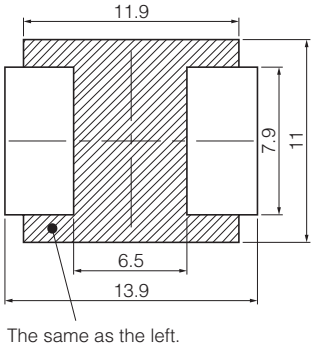
Recommended Land Pattern in mm (not to scale)

Dimensional tolerance unless noted : ±0.5

Series PCC-M0854MS
(ETQP5M□□□YSK)



Series PCC-M1050MS
(ETQP5M□□□YSC)

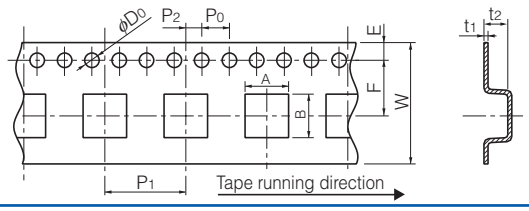


■ As for Soldering Conditions and Safety Precautions (Power Choke Coils (Automotive Grade)),

Please see Data Files

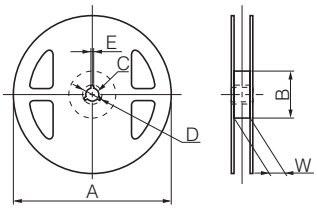
Packaging Methods (Taping)

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



Series	A	B	W	E	F	P_1	P_2	P_0	ϕD_0	t_1	t_2
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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