

Power Choke Coil for Automotive application

Series: **PCC-M1280MF (MC)**



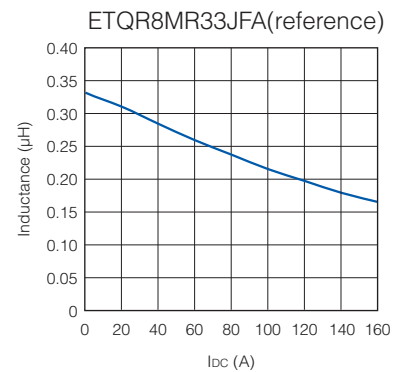
High heat resistance and high reliability
Using metal composite core (MC)

Industrial Property : patents 3 (Registered 1/Pending 2)

Features

- High heat resistance : Operation up to 160 °C including self-heating
- Large current Power : 53 A (R33 type)
- High vibration resistance : 30G
- 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 (Fig.1)
- 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
- AEC-Q200 Automotive qualified
- RoHS compliant

● Fig.1 Inductance v.s. DC current



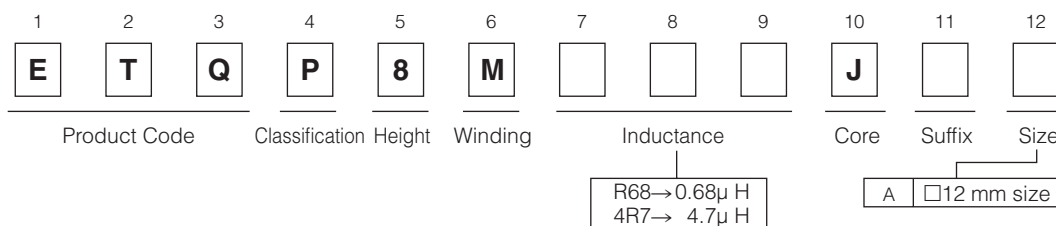
Recommended Applications

- 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)

- 500 pcs./box (2 reel)

Explanation of Part Numbers



Temperature rating

Operating temperature range		Tc : -40 °C to +160 °C(Including self-temperature rise)
Storage condition	After PWB mounting	
	Before PWB mounting	Ta : -5 °C to +35 °C 85%RH max.

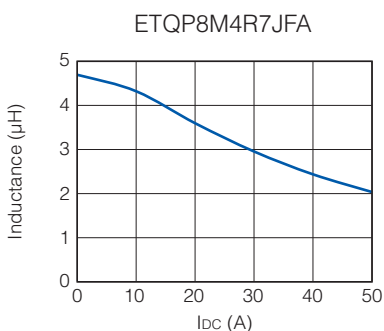
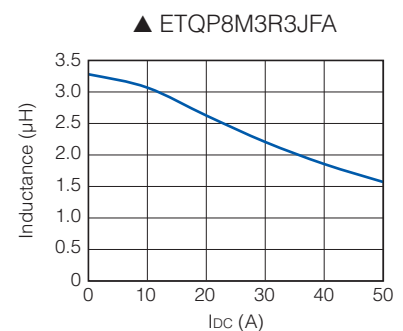
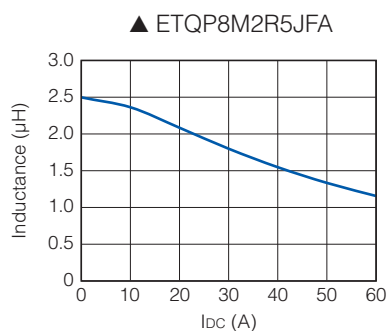
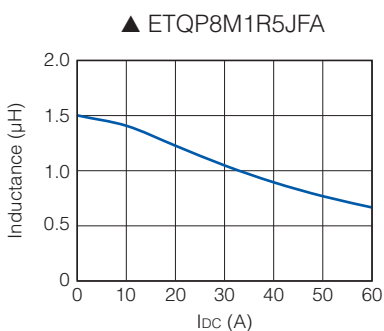
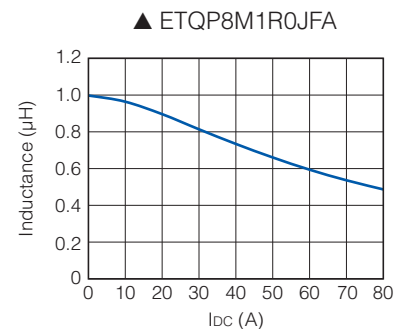
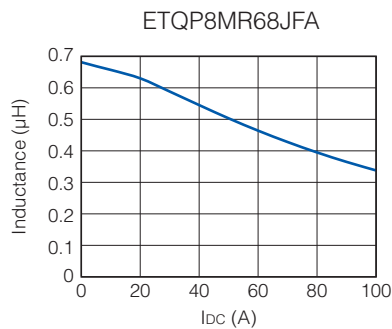
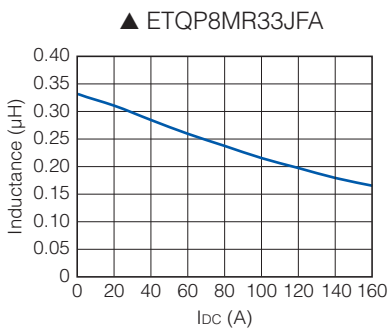
Standard Parts

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-M1280MF [12.6×12.8×8.0(mm)]	▲ ETQP8MR33JFA	0.33	±20	0.70 (0.77)	±10	44.4	53.5	84.5
	ETQP8MR68JFA	0.68		1.10 (1.21)		35.4	42.6	56.9
	▲ ETQP8M1R0JFA	1.0		1.36 (1.50)		31.8	38.3	44.4
	▲ ETQP8M1R5JFA	1.5		1.80 (1.98)		27.7	33.3	29.9
	▲ ETQP8M2R5JFA	2.5		2.60 (2.86)		23.0	27.7	32.1
	▲ ETQP8M3R3JFA	3.3		3.60 (3.96)		19.6	23.6	27.6
	ETQP8M4R7JFA	4.7		4.90 (5.39)		16.8	20.2	24.7

- (*1) Measured at 100k Hz. ▲ Under development
- (*2) DC current which causes temperature rise of 40K. 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 40K. Parts are soldered by reflow on multilayer PWB with high heat dissipation performance. Note: Heat radiation constant are approx. 20 K/W measured. 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 +160 °C should not be exceeded.
For higher operating temperature conditions, please contact Panasonic representative in your area.

Performance Characteristics (Reference)

● Inductance vs DC Current



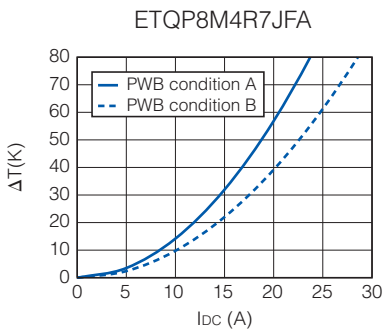
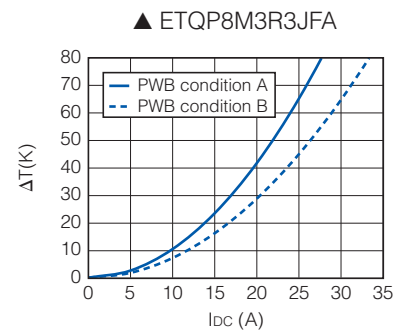
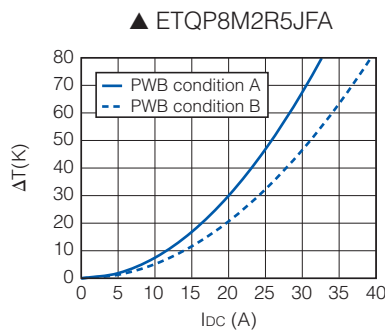
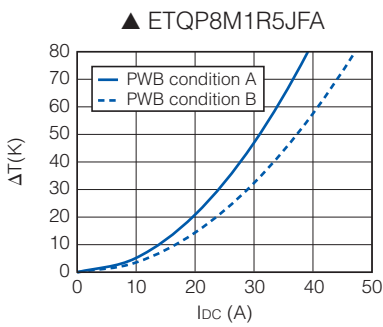
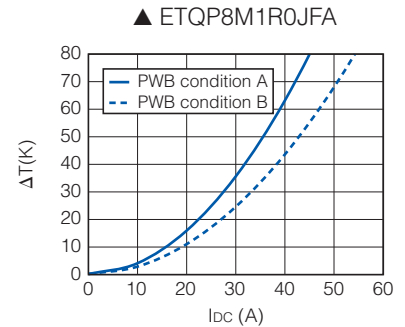
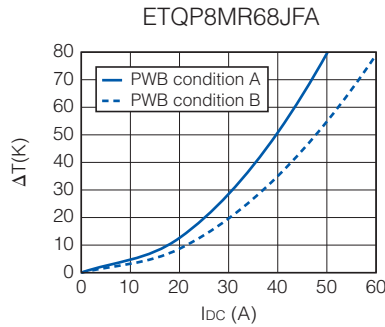
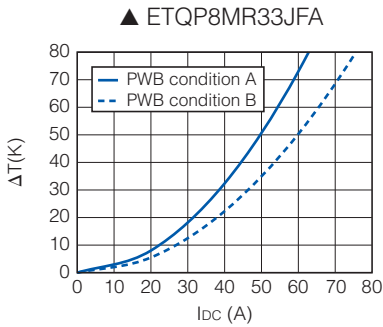
▲ Under development

Performance Characteristics (Reference)

● 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)

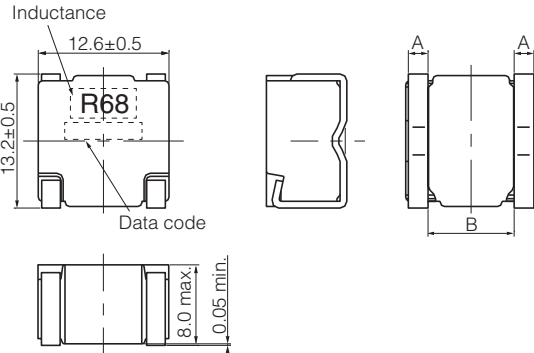


▲ Under development

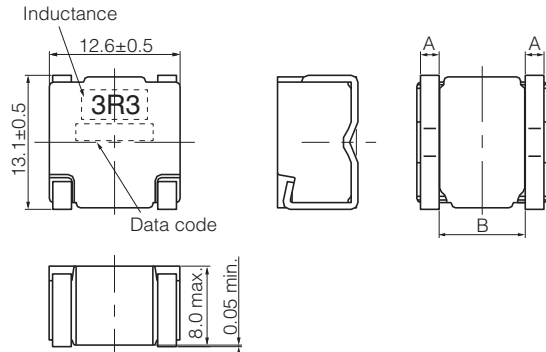
Dimensions in mm (not to scale)

Dimensional tolerance unless noted : ± 0.5

- ETQP8MR33JFA
- ETQP8M1R5JFA
- ETQP8M3R3JFA
- ETQP8MR68JFA
- ETQP8M2R5JFA
- ETQP8M4R7JFA
- ETQP8M1R0JFA



Part No.	A	B
ETQP8MR33JFA	2.15 \pm 0.4	7.3 \pm 1.0
ETQP8MR68JFA	2.1 \pm 0.4	8.0 \pm 1.0
ETQP8M1R0JFA	2.1 \pm 0.4	8.0 \pm 1.0
ETQP8M1R5JFA	2.1 \pm 0.4	8.0 \pm 1.0
ETQP8M2R5JFA	1.8 \pm 0.4	8.6 \pm 0.85

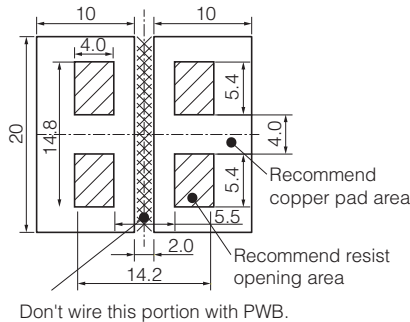


Part No.	A	B
ETQP8M3R3JFA	1.5 \pm 0.4	8.8 \pm 1.05
ETQP8M4R7JFA	1.25 \pm 0.4	9.0 \pm 1.25

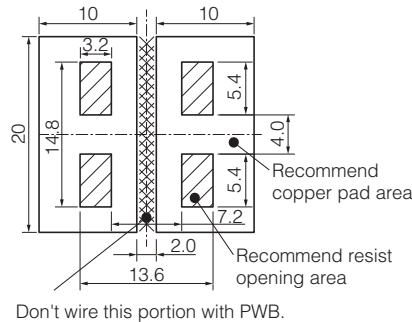
Recommended Land Pattern in mm (not to scale)

Dimensional tolerance unless noted : ± 0.5

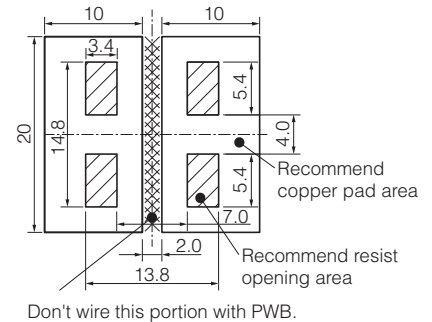
● ETQP8MR33JFA



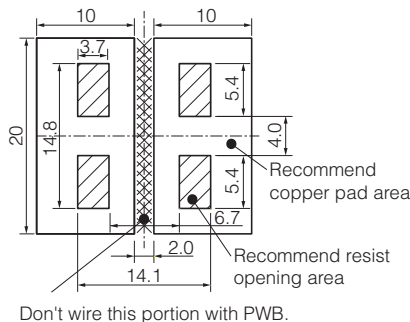
● ETQP8M4R7JFA



● ETQP8M3R3JFA



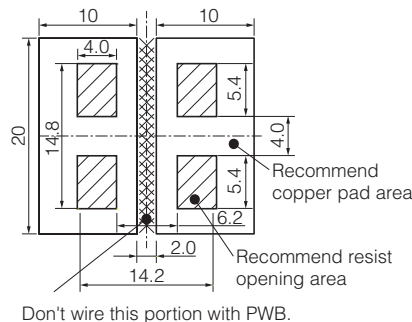
● ETQP8M2R5JFA



● ETQP8MR68JFA

● ETQP8M1R0JFA

● ETQP8M1R5JFA

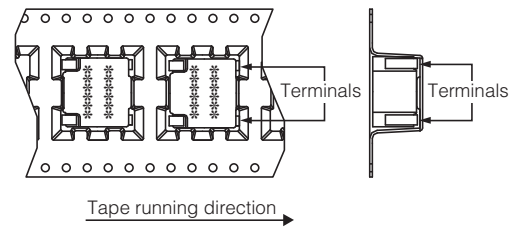
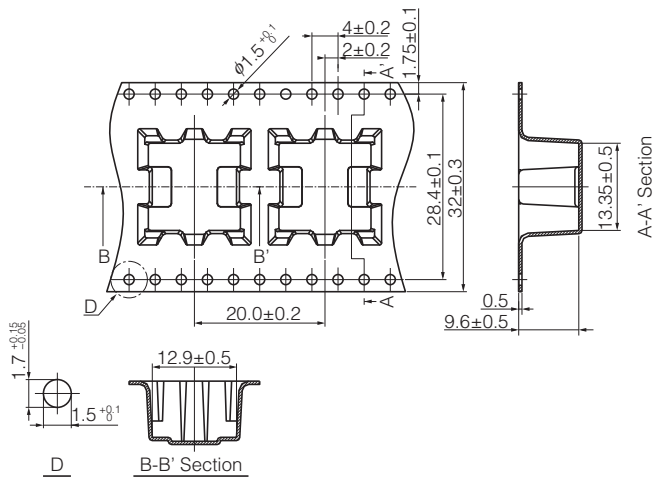


■ As for Soldering Conditions and Safety Precautions (Power Choke Coils for Automotive application),

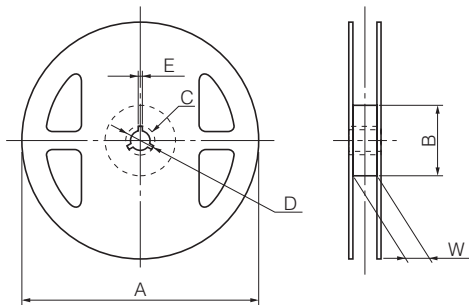
Please see Data Files

Packaging Methods (Taping)

- Embossed Carrier Tape Dimensions in mm (not to scale)
- Component Placement (Taping)



- Taping Reel Dimensions in mm (not to scale)



Standard Reel Dimensions

Series	A	B	C	D	E	W
PCC-M1280MF	330	(100)	13	21	2	33.5