

# Approval Specifications

Issue No. T1ST-05013  
Date of Issue Mar. 2. 2005  
Classification New

CUSTOMER : Digi-Key Corporation

PART NAME : LPF CHOKE COIL

CUSTOMER PART No. : ETQA17B□□□

PANASONIC PART No. : ETQA17B□□□

MODEL NAME / No. : \_\_\_\_\_

MANUFACTURED IN : INDONESIA

## CUSTOMER'S ACKNOWLEDGEMENT

NAME : \_\_\_\_\_

SIGN : \_\_\_\_\_

DATE : \_\_\_\_\_

**PLEASE RETURN ONE COPY**




MATSUSHITA ELECTRONIC COMPONENTS CO., LTD.

Power Supply and Inductive Products Business Unit

1006 KADOMA, KADOMA CITY, OSAKA, 571-8506, JAPAN

TEL : +81-6-6908-1215

FAX : +81-6-6908-7307

Approved	Checked	Designed
		

1. この製品の使用材料は、「化学物質の審査及び製造等の規制に関する法律」に基づき、すべて既存化学物質として記載されている材料です。

All the materials used in this product are registered material under the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances.

2. 本製品は、モントリオール議定書で規制されているオゾン層破壊物質(ODC)を製造工程及び購入部品・材料で一切使用していません。

This product has not been manufactured with any ozone depleting chemical controlled under the Montreal Protocol.

3. この製品に使用している全ての材料には、臭素系特定難燃物質「PBBOs、PBBs」を含有していません。

All the materials used in this product contain no brominated materials of PBBOs or PBBs as the flame-retardant.

4. 包装表示: 以下の項目をそれぞれ英語で表示しています。  
・品番   ・数量   ・ロットNo.   ・原産国

Package indication:

The following items are displayed in English, respectively/  
・Part No.   ・Quantity   ・Lot No.   ・Country of porigin

# SPECIFICATION

Spec.No. 111-ETQA17B[ ]-[ ]-S

Part Name **Low Pass Filter Choke Coil**

Customer's No. **ETQA17B[ ]** Product No. **ETQA17B[ ]** 4 - 1

## 1. 電気特性 (Electric Characteristics)

### 【ETQA17B100】

ITEMS	SPEC	MESURING EQUIPMENTS	REMARKS
Inductance	10 $\mu$ H $\pm$ 10%	HP4284A or equivalent	at(10KHz, 0.1V)
DC Resistance	17. 0m $\Omega$ max.	Agilent 3440A or equivalent	at 20 degree
Rated DC Current	11. 0A max.		at 40K
Inductance decrease current(DC)	21. 0A max.		at 100 degree

### 【ETQA17B150】

ITEMS	SPEC	MESURING EQUIPMENTS	REMARKS
Inductance	15 $\mu$ H $\pm$ 10%	HP4284A or equivalent	at(10KHz, 0.1V)
DC Resistance	17. 0m $\Omega$ max.	Agilent 3440A or equivalent	at 20 degree
Rated DC Current	10. 0A max.		at 40K
Inductance decrease current(DC)	15. 0A max.		at 100 degree

### 【ETQA17B220】

ITEMS	SPEC	MESURING EQUIPMENTS	REMARKS
Inductance	22 $\mu$ H $\pm$ 10%	HP4284A or equivalent	at(10KHz, 0.1V)
DC Resistance	17. 0m $\Omega$ max.	Agilent 3440A or equivalent	at 20 degree
Rated DC Current	8. 0A max.		at 40K
Inductance decrease current(DC)	11. 0A max.		at 100 degree

### 【ETQA17B330】

ITEMS	SPEC	MESURING EQUIPMENTS	REMARKS
Inductance	33 $\mu$ H $\pm$ 10%	HP4284A or equivalent	at(10KHz, 0.1V)
DC Resistance	17. 0m $\Omega$ max.	Agilent 3440A or equivalent	at 20 degree
Rated DC Current	6. 0A max.		at 40K
Inductance decrease current(DC)	7. 0A max.		at 100 degree

※Rated DC Current : 温度上昇値40Kになる電流値

Rated DC Current : Temperature rise 40K

## 2. 絶縁耐力 (Dielectric withstand Voltage)

AC150V 1min.

[AC 50/60Hz]

(Coil-Core , Cutoff Current = 0.5mA)

					Authorized Date	Mar. 2. 2005
					Issued Date	Mar. 2. 2005
					Approved	M.MIZUSHIMA
					Checked	H.YAMASHITA
Revision	Q'ty	Date	Ref.No	Note	Designed	T.MINAMIDE

# SPECIFICATION

Spec.No. 111-ETQA17B□□□-\*-S

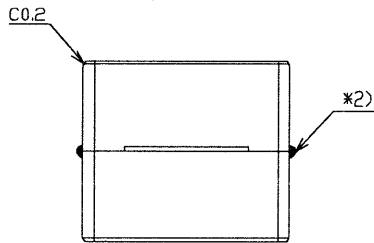
Part Name **Low Pass Filter Choke Coil**

Customer's No.  
ETQA17B□□□

Product No.  
ETQA17B□□□

4 - 2

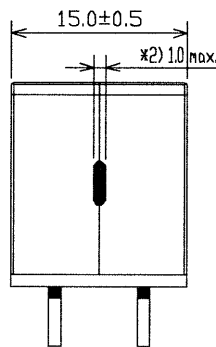
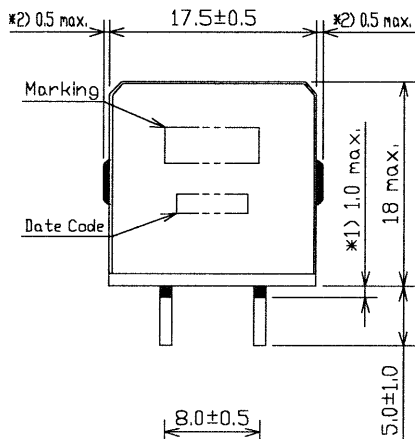
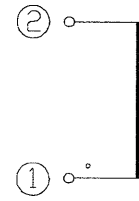
## 3. 外観・寸法 (Appearance and Dimensions)



\*1) 未半田付け部  
No soldering part

\*2) 接着剤  
Adhesive

### Connections

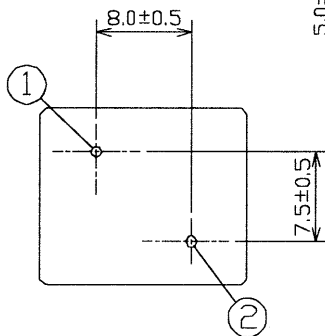
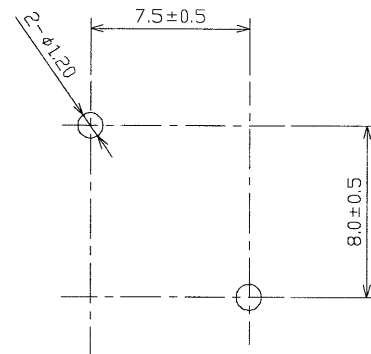


### Marking



□□□ : Inductance  
Ex.) ETQA17B220 : B220

### Mounting Details For PCB



※コアチップングに関してはJIS C 2514による。  
\* About a chip of a core, it is based on JIS-C-2514.

⚠					Authorized Date	Mar. 2. 2005
⚠					Issued Date	Mar. 2. 2005
⚠					Approved	M.MIZUSHIMA
⚠					Checked	H.YAMASHITA
Revision	Q'ty	Date	Ref.No	Note	Designed	T.MINAMIDE

<b>SPECIFICATION</b>		Spec.No. 111-ETQA17B□□□-*-S
Part Name	Low Pass Filter Choke Coil	
Customer's No.	Product No.	4 - 3
ETQA17B□□□	ETQA17B□□□	

#### 4. Environmental Characteristics

##### Moisture Life;

Appearance and structure shall not be remarkably damaged after stored for  $500 \pm 6$  hours of exposure to 80 to 85% RH at  $85 \pm 2^\circ\text{C}$  with rated current applied and left for 1 hour in room conditions.

##### Heat Life;

Appearance and structure shall not be remarkably damaged after stored for  $500 \pm 6$  hours at  $80 \pm 2^\circ\text{C}$  with rated current applied between coil and coil and left for 1 hour in room conditions.

##### Heat Resistance;

Appearance, Structure and Withstanding Voltage shall not be remarkably damaged after stored for  $96 \pm 4$  hours at  $120 \pm 2^\circ\text{C}$  and left for 1 hour in room conditions.

##### Cool Resistance;

Appearance, Structure and Withstanding Voltage shall not be remarkably damaged after stored for  $96 \pm 4$  hours at  $-20 \pm 2^\circ\text{C}$  and left for 1 hour in room conditions.

##### Moisture Resistance;

Appearance, Structure and Withstanding Voltage shall not be remarkably damaged after stored for  $96 \pm 4$  hours exposure to 95% RH at  $60 \pm 2^\circ\text{C}$  and left for 1 hour in room conditions.

##### Thermal Shock;

Appearance, Structure and Withstanding Voltage shall not be remarkably damaged after 20 cycles of storage at  $-20 \pm 3^\circ\text{C}$  for 1 hour, and  $120 \pm 3^\circ\text{C}$  1 hours. then left for 1 hour in room conditions.

#### 5. Physical Characteristics

##### Vibration Resistance;

Appearance and Structure shall have no abnormality after vibration at the frequency varying uniformly between the approximate limits of 10 and 55 Hz and the amplitude of 1.5 mm for 2 hours in each of 3 mutually perpendicular directions.

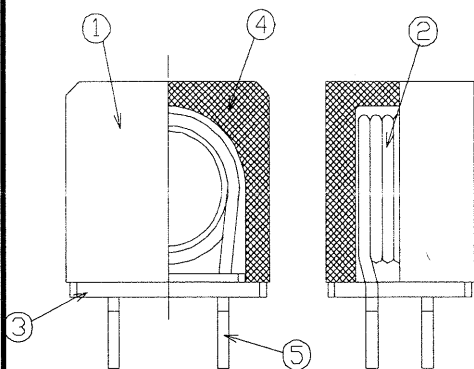
##### Solderability;

Solder shall be attached uniformly around the dipped portion after dipping into solder at  $255 \pm 5^\circ\text{C}$  for  $3 \pm 0.5$  seconds.

##### Solder Heat Resistance;

The electrical and mechanical characteristics shall not be deteriorated after dipping into solder at  $350 \pm 5^\circ\text{C}$  for  $3 \pm 0.5$  seconds.

#### 6. Material List



ITEM	PART NAME	MATERIALS
1	Core	Ferrite
2	Coil	Polyurethane Enameled Round Copper Wire of Class 1
3	Terminal bord	Polybuthilene Terephthalate
4	Adhesive	Epoxy or Sillicon
5	Solder	Lead free Solder

△					Authorized Date	Mar. 2. 2005
△					Issued Date	Mar. 2. 2005
△					Approved	M.MIZUSHIMA
△					Checked	H.YAMASHITA
Revision	Q'ty	Date	Ref.No	Note	Designed	T.MINAMIDE

**SPECIFICATION (Method of Packing)** Spec.No. 111-ETQA17B□□□-\*-S

Part Name **Low Pass Filter Choke Coil**

Customer's No. **ETQA17B□□□**      Product No. **ETQA17B□□□** **4 - 4**

**This is the packing specification for ETQA15B□□□□ type LPF choke coil.**

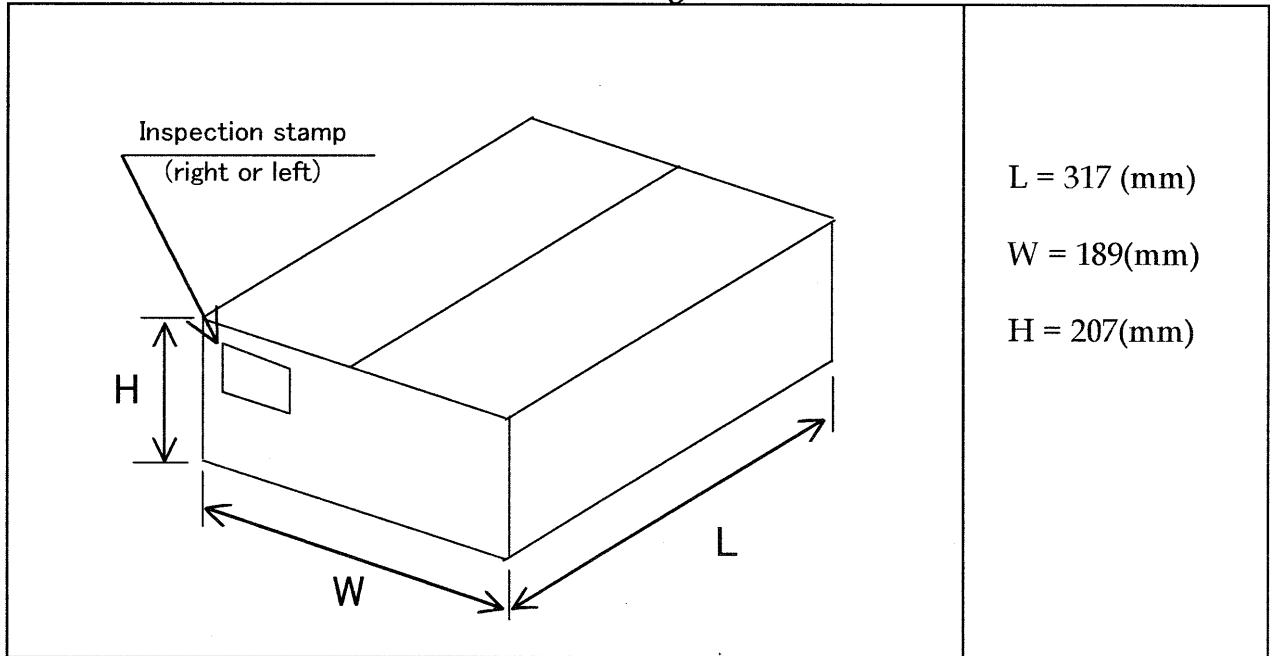
**Structure of packing**

Inside Packing	Single contents	50 pcs
Outside Packing	Single contents	500 pcs

**Contents of Packing**

Inside Packing	Blister Tray
Outside Packing	Packing case composed of 5 inside packing.

**Minimun Packing Dimension**



**Packing Indication;**

We shall indicate customer parts number,our parts number and other items on one side of the package.

**Notes;**

Please keep the products in the temperature -20 ~ 60°C

△					Authorized Date	Mar. 2. 2005
△					Issued Date	Mar. 2. 2005
△					Approved	M.MIZUSHIMA
△					Checked	H.YAMASHITA
Revision	Q'ty	Date	Ref.No	Note	Designed	T.MINAMIDE

SPECIFICATIONS(納入仕様書)

<Cautions for Safety (安全上の御注意(△注意)) >

1. Provision to Abnrmal Condition (異常対策)

This 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 protect.  
 (当チョークコイルは、過負荷及びショート・オープン等の異常時に対し、単品での保護装置を有しておりませんので必ずセットで保護装置、保護回路で対策し、発煙・発火、絶縁耐力、絶縁抵抗等の問題のない事を確認してください。)

2. Temperature Rise (温度上昇)

Temperature rise of choke coil depends on the installation condition in end products. It shall be confirmed in the actual end product that temperature rise of choke coil is in the limit of specified temperature.  
 (チョークコイルの温度上昇は実装状態によって変わりますので、必ずセット実装状態で規定の温度以下となる事を確認の上で御使用ください。)

3. Water (水)

This choke coil must not be used in wet condition by water, coffee or any liquid because insulation strength becomes very low in the condition.  
 (水、コーヒーなど液体に濡れた状態では絶縁性能が大幅に低下していますので、このような状態では使用しないで下さい。)

4. Potting (封止)

If this 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 choke coil.  
 (チョークコイルを樹脂などで封止されますと、銅線の絶縁被膜劣化などを引き起こす場合がありますので、このような場合は一度当社に御相談下さい。)

5. Detergent (洗浄剤)

Some detergent will damage the coating material of magnet wire. Please ask us if you would use any detergent to this choke coil.  
 (洗浄剤をチョークコイルに使用した場合、銅線の絶縁被膜劣化などを引き起こす場合がありますので、このような場合は一度当社に御相談下さい。)

6. 本製品はRoHS (電気電子機器に含まれる特定有害物質の使用制限に関する)指令(2002/95/EC)に対応しております。  
 This product complies with the RoHS Directive(Restriction of the use of certain Hazardous Substances in electrical and electronic equipment(DIRECTIVE 2002/95/EC))

				Customer's No. ETQA17B□□□□		Spec.No. (1/2) 151-ETQA17B□□□□- F-S		
				Authorized Date	Issued Date	Approved	Checked	Designed
				Mar. 2. 2005	R- Mar. 2. 2005	M.MIZUSHIMA	H.YAMASHITA	T.MINAMIDE
R	Qty.	Date	Ref. No.					

SPECIFICATIONS(納入仕様書)

< Cautions for Use (使用上の御注意) >

1.Storage Temperature (保存温度)

-20°C~60°C

2. Use Temperature (使用温度)

-Minimum Temperature (最低温度)

-20°C Ambient temperature of choke coil (チョークコイルの周囲温度)

-Maximum Temperature (最高温度)

Insulation class of choke coil

120°C

The value of temperature is including ambient of the choke coil and temperature rise of choke coil.(チョークコイルの周囲温度と温度上昇を含んだ値)

3. Model (使用機種)

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

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

(セットの類似展開などで他のセットに当チョークコイルを使用する場合、使用条件等の違いにより性能を全て満足しない場合があります。この様な場合は、一度当社に御相談下さい。)

5. Drop (落下)

If the choke coil suffered mechanical stress such as drop, characteristics may become poor (due to damage on coil bobbin, etc.).

Never use such stressed choke coil.

(落下等、機械的ストレスが加わったチョークコイルは、性能が大幅に低下している可能性があります(ボビン等に割れが発生する)ので、この様なチョークコイルは使用しないで下さい。)

6. Installation(取付け)

Please secure a regulated insulation distance between the choke coil and Peripheral parts.

チョークコイルと周辺部品の間には、規定の絶縁距離を確保して下さい。

7. Resistance to soldering heat (半田耐熱性)

Solder bath method (半田ディップ) : Soldering temperature (半田温度) 260±5°C. Immertion time (時間):10±1s(秒)

Soldering iron method (手半田) : Bit temperature (温度) 350±10°C.

Application time of soldering iron (時間):3+1s、-0s(秒)

8. Solderbility (半田付性)

230±5°C 3±0.5s 90% MIN. shall be smooth and bright. (90%以上なめらかで光沢のあること。)

当製品は鉛フリーです (Lead Free)

				Customer's No.		Spec.No. (2/2)		
				ETQA17B□□□		151-ETQA17B□□□- F-S		
				Authorized Date	Issued Date	Approved	Checked	Designed
				Mar. 2. 2005	R- Mar. 2. 2005	M.MIZUSHIMA	H.YAMASHITA	T.MINAMIDE
R	Qty.	Date	Ref. No.					