

CUSTOMER :
ALL

| | |
|----------|-----------|
| SPEC NO. | ST-0805 |
| DATE | 19-Jun-12 |

RoHS Compliant

SPECIFICATIONS

Product
Description: Common Mode Choke Coil

Part Number PWC0805ST Series

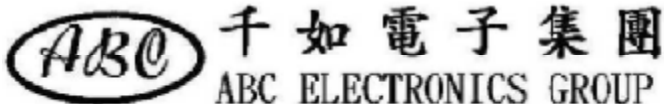
Customer
Part Number : _____

【For Customer approval Only】

Date:

| Approved By | Verified By | Rechecked By | Checked By |
|-------------|-------------|--------------|------------|
| | | | |

| Approved By | Verified By | Prepared By |
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Introduction

This specification is applicable to chip type wire wounded common mode chokes. The PWC series are widely used in notebook, PC, USB, HUB, etc. The wire wound features advance in lower DC resistance and higher current tolerance, and much stable performance.

Features

- * Operating temperature -55°C to +125°C
- * Excellent solderability and resistance to soldering heat.
- * Suitable for flow and reflow soldering.
- * Good dimensions, high reliability, and easy surface mount assembly.

Part Number

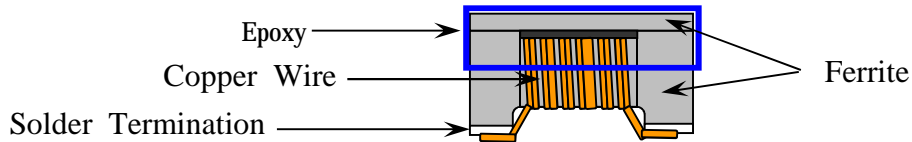
| | | | | | | |
|------------|-------------|----------|----------|------------|----------|-----------|
| PWC | 0805 | S | T | 900 | S | □□ |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |

- (1) Chip Common Mode Choke Coil
- (2) Chip Size

| CODE | L | W | H | UNIT |
|------|-------|-------|-------|------|
| EIA | 0.079 | 0.047 | 0.047 | Inch |
| JIS | 2.00 | 1.20 | 1.20 | mm |

- (3) General Characteristics
- (4) Taped In Reel. 2,000pcs/reel.
- (5) Typical Impedance at 100MHz
 900 = 90Ω 181 = 180Ω
- (6) Tolerance
 S = ± 25%
- (7) AOBA's Internal Code

Material Structure

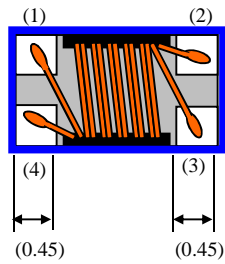
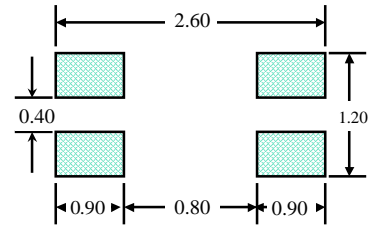
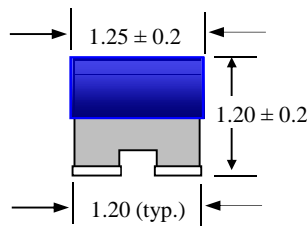
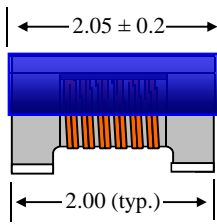


Reliability Specification

As attached.

**COMMON MODE CHOKE
WIRE WOUND TYPE**

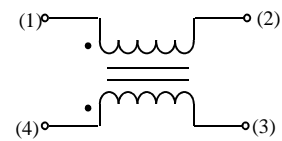
PWC0805ST (2012) SERIES WITH SHIELDING



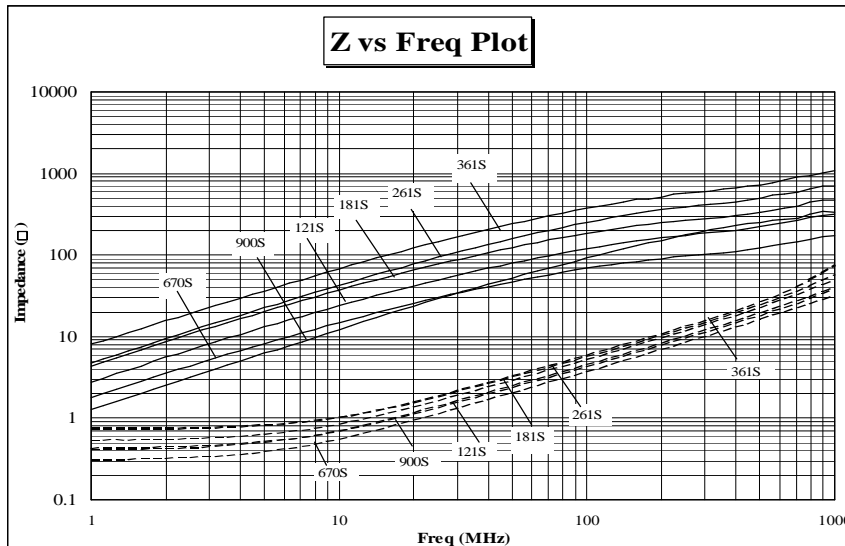
Remark : □ : Electrode
() : Reference Value
Unit: m/m

RECOMMENDED PCB PATTERN

EQUIVALENT CIRCUIT



No Polarity



Specification

| Part Number | Common Mode ¹ Impedance (Ω) at 100MHz | Rated Voltage V (DC) | Withstanding Voltage V (DC) | Rated ² Current max (MA) | DC Resistance max (Ω) | Insulation Resistance min (MΩ) |
|---------------|--|----------------------------|-----------------------------------|---|-----------------------------|--------------------------------------|
| PWC0805ST670S | 67 | 50 | 125 | 400 | 0.25 | 10 |
| PWC0805ST900S | 90 | 50 | 125 | 330 | 0.35 | 10 |
| PWC0805ST121S | 120 | 50 | 125 | 370 | 0.30 | 10 |
| PWC0805ST181S | 180 | 50 | 125 | 330 | 0.35 | 10 |
| PWC0805ST261S | 260 | 50 | 125 | 300 | 0.40 | 10 |
| PWC0805ST361S | 360 | 50 | 125 | 280 | 0.45 | 10 |

1. Impedance is measured in HP4287A at frequency of 100MHz.
2. For 15 °C rise.

COMMON MODE CHOKE

WIRE WOUND TYPE

RELIABILITY SPECIFICATION

1. Scope

This specification applies to wired wounded chip common mode choke of the following types used in electronic equipment :

Material : Ferrite

2. Construction

Configuration

& Dimension : Please refer to the attached figures and tables.

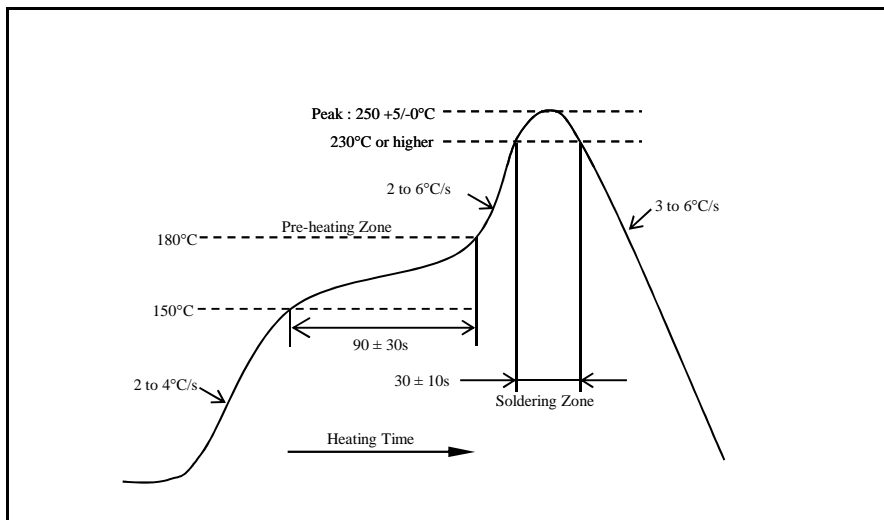
Terminals : PWC series shall consist of Ag followed by Nickel, then solder plating.

3. Operating Temperature Range

Operating Temperature Range is the scope of ambient temperature at which the common mode choke can be operated continuously at rated current.

Temp. Range : - 55 °C to + 125 °C

4. Recommended Soldering Conditions



5 Characteristics

Standard Atmospheric Conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests are as follows :

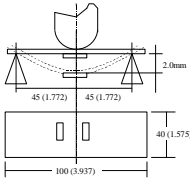
Ambient Temperatur : 25 °C (20 °C) ± 2 °C

Relative Humidity : 60% to 70% (RH)

Air Pressure : 86 Kpa to 106 Kpa

**COMMON MODE CHOKE
WIRE WOUND TYPE**

RELIABILITY SPECIFICATION

| | ITEM | CONDITION | SPECIFICATION |
|-----------------------------------|---|--|--|
| | Common Mode Impedance (Z_c) and Tolerance | Measuring Equipment : HP-4287A or equivalent. Measuring Frequency : $100 \pm 1\text{MHz}$ Measuring Temperature : $25 \pm 5^\circ\text{C}$ (Refer to Measurement Diagram) | Within $\pm 25\%$ |
| Electrical Characteristics | Insulation Resistance | Measuring Voltage : Rated Voltage Measuring Time : 1 minute max. (Refer to Measurement Diagram) | 10 mega ohms minimum |
| | Dielectric Withstanding Voltage | Test Voltage : 2.5 times to Rated Voltage Time : 1 to 5 seconds. Charge current : 1mA max. (Refer to Measurement Diagram) | No damage occurs when the test voltage is applied. |
| | Rated Current | Test Current : Rated Current (Refer to Measurement Diagram) | Temperature Rise : $\leq 15^\circ\text{C}$ |
| | DC Resistance (RDC) | Measured with current of 100mA max. In case of doubt, measured by four terminal method. (Refer to Measurement Diagram) | Within Specified Tolerance. |
| | Flexure Strength |  | <p>Table 1.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Change In Appearance Without distinct damage</p> <p>Change In Common Mode Impedance: Within $\pm 20\%$</p> <p>Insulation Resistance: 10MΩ min</p> <p>Withstanding Voltage: No damaged</p> </div> |
| Drop Test | Components shall be dropped three times on a concrete or steel board at height of 1 M naturally at any directions. | | |
| Vibration (Random) | Components shall be randomly vibrated at amplitude of 1.5mm and frequency of 10 - 55 Hz: 0.04 G / Hz, 1 minute at a period of 2 hours in each of the three mutually perpendicular directions. | | |
| Mechanical Characteristics | Solderability | Dip pads in flux and then in a solder bath at $240^\circ\text{C} \pm 5^\circ\text{C}$ for 5 seconds. | A minimum of 80% of the metalized area must be covered with new solder. |
| | Resistance to Soldering Heat | Preheat components at 80 to 120°C for 1 minute. Dip components into flux and then into a melted solder bath at $260 \pm 5^\circ\text{C}$ for 5 ± 1 seconds. Then components are to be tested after 4-48 hours at room temperature. | Meet Table 1. |
| | Component Adhesion (Push Test) | Components shall be reflow solder onto a P. C. Board ($240 \pm 5^\circ\text{C}$ for 20 seconds). Then a dynamometer force gauge shall be applied to any side of the component. | Components must withstand a minimum force of 1 Kg without any failure of the termination to component attachment. |

**COMMON MODE CHOKE
WIRE WOUND TYPE**

RELIABILITY SPECIFICATION

| | ITEM | CONDITION | SPECIFICATION |
|--------------------------------------|--|---|---|
| Endurance Characteristics | Cold Temperature Storage | Components shall be stored at temperature of $-55\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 1000 (+48 hours -0 hour). Then components shall be subjected to standard atmospheric conditions for 4-48 hours. After that, measurement shall be made. | Table 1. Change In Appearance Without distinct damage |
| | High Temperature Storage | Components shall be stored at temperature of $+125\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 1000 (+48 hours -0 hour). Then components shall be subjected to standard atmospheric conditions for 4-48 hour. After that, measurement shall be made. | Change In Common Mode Impedance: Within $\pm 20\%$ |
| | Moisture Resistance | Components shall be stored in the chamber at $40\text{ }^{\circ}\text{C}$ at 90 - 95% R. H. for 1000 (+48 hours -0 hour). Then components are to be tested after 4-48 hours at room temperature. | Insulation Resistance: $10\text{M}\Omega$ min |
| | Temperature Cycle | Each cycle shall consist of 30 minutes at -55°C followed by 30 minutes at $+125^{\circ}\text{C}$ with a 10-15 minutes maximum transition time between temperature extremes. Test duration is 100 cycles, then components are to be tested after 4-48 hours at room temperature. | Withstanding Voltage: No damaged |
| | High Temperature With Loaded (Rated Current) | Components shall be stored at temperature of $+125\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 1000 (+48 hours -0 hour) with rated current applied. Then components shall be subjected to standard atmospheric conditions for 4-48 hour. After that, measurement shall be made. | |

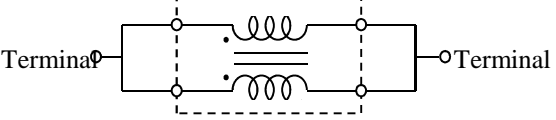
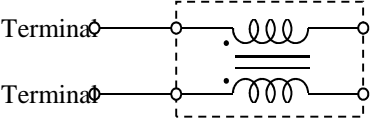
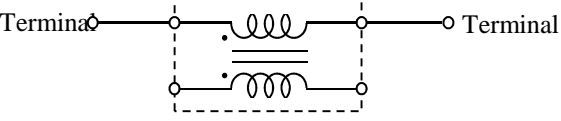
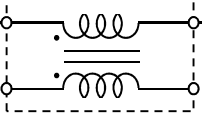
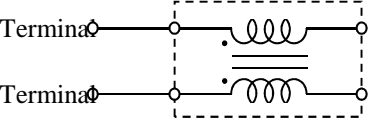
**COMMON MODE CHOKE
WIRE WOUND TYPE**

RELIABILITY SPECIFICATION

Measurement Diagram

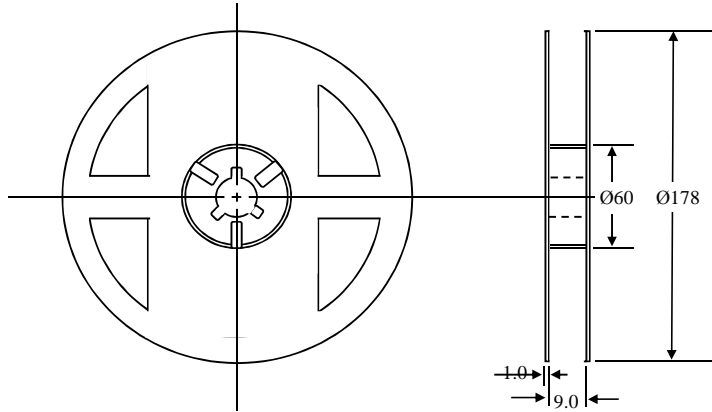
Terminal to be Tested

When measuring and supplying the voltage, the following terminal is applied.

| No. | Item | Terminal to be Tested |
|-----|---|--|
| 1 | Common Mode Impedance (Measurement Terminal) |  |
| 2 | Withstanding Voltage (Measurement Terminal) |  |
| 3 | DC Resistance (Measurement Terminal |  |
| 4 | Rated Current |  |
| 5 | Insulation Resistance |  |

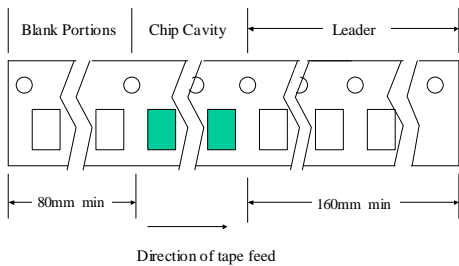
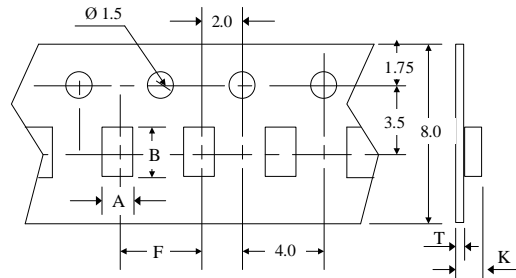
Packing Quantity

| Type | Pcs / Reel |
|---------|------------|
| PWC0805 | 2,000 |



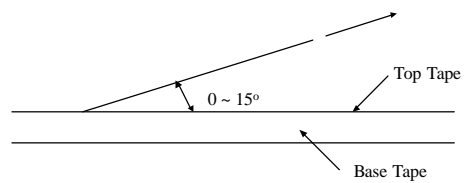
Dimensions (unit: m/m)

| Type | Chip Cavity | | Insert Pitch | Tape Thickness | |
|-----------|-------------|------|--------------|----------------|------|
| | A | B | F | K | T |
| Tolerance | ± 0.10mm | | | | |
| PWC0805 | 1.50 | 2.35 | 4.00 | 1.45 | 0.23 |



Top Tape Strength

The top tape requires a peel-off force of 0.2 to 0.7N in the direction of the arrow as illustrated below.



CHIP INDUCTOR SPECIFICATION

Operating Environment

Do not use this product under the following environmental conditions, on deterioration of performance, such as insulation resistance may result from the use.

1. In corrosive gases (acidic gases, alkaline gases, chlorine, sulfur gases, organic gases and etc.)
2. In the atmosphere where liquid such as organic solvent, may splash on the products.

Storage Condition

1. Storage period

Use the product within 12 months after delivered.

Solderability should be checked if this period is exceeded.

2. Storage environment conditions

- * Product should be store in the warehouse on the following conditions.

Temperature : -10 ~ +40°C

Humidity : 20 to 70% relative humidity. No rapid change on temperature and humidity.

- * Products should not be stored in corrosive gases, such as sulfurous, acid gases, alkaline gases, to prevent the following deterioration.

Poor solderability due to the oxidized electrode.

- * Products should be stored on the pallet for the prevention of the influence from humidity, dust and so on.

- * Products should be stored in the warehouse without heat shock, vibration, direct sunlight and so on.

- * Do not unpack the minimum package until immediately before use. After unpacking, re-seal promptly or store in desiccator with a desiccant.

Delivery

Care should be taken when transporting or handling product to avoid excessive vibration or mechanical shock.