

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China







DC Common Mode Choke Coil PLT09HN2003R0P1B Reference Specification

1. Scope

This reference specification applies to DC Common Mode Choke Coil (PLT09H Series).

2. Part Numbering

(Ex.)

PL	T	09	H	N	200	3R0	P	1	B
Product ID	Type	Applications	Structure	Safety	Inductance	Rated	Winding Mode	Lead	Packaging
				Standard		Current		Dimensions	(B:Bulk)
			1)	N:Not certifi	ed)	(P:Aligned Windir	ng)	

3. Rating

Item	Specification
Customer Part Number	
Murata Part Number	PLT09HN2003R0P1B
Rated Voltage	50 V(DC)
Rated Current	3 A
Withstand Voltage	125 V(DC) (1 minute)
Insulation Resistance	10 M Ω min.
Direct Current Resistance	0.03Ω max.
Inductance L1,L2	20 μH min.
Inductance Difference L1-L2	2 μH max.
Temperature Characteristic (Inductance change)	within ± 👸 %
Temperature Rise	30 °C max.
Operating Temperature Range (Ambient Temperature)	- 40 °C to + 85 °C
Storage Temperature Range	- 40 °C to + 85 °C

4. Standard Testing Conditions

< Unless otherwise specified >

< In case of doubt >

Temperature : Ordinary Temp. 15 °C to 35 °C Humidity : Ordinary Humidity 25 %(RH) to 85 %(RH)

Temperature : 20 °C ± 2 °C

Humidity: 60 %(RH) to 70 %(RH)

Atmospheric pressure: 86 kPa to 106 kPa

5. Appearance, Dimensions and Equivalent Circuit Diagram

See Fig.1.

6. Marking

(1) Inductance : 200(2) Manufacturer Identification : muRata

7. Electrical Performance

No.	Item	Specification	Test Method
7.1	Inductance	Meet item 3.	Measuring terminal: T1-T2(L1), T3-T4(L2)
	L1,L2 L1 - L2		Frequency: 1 kHz
7.2	Insulation		Measuring terminal: (T1,T2) - (T3,T4)
	Resistance		Test Voltage: 100 V(DC)
			Time: 1 minute
7.3	Direct Current		Measuring terminal: T1-T2, T3-T4
	Resistance		

No.	Item	Specification	Test Method
7.4	Temperature Characteristics	Meet item 3.	Inductance shall be measured at each step specified in Table 1 after reaching the thermal epuilibrium. The inductance change against the inductance at step 3 shall be calculated. Table 1 Step Temperature Step Temperature 1 +20 ± 2 °C 4 +85 ± 2 °C 2 -25 ± 2 °C 5 +20 ± 2 °C 3 +20 ± 2 °C
7.5	Temperature rise	The surface of coil : 30 °C max.	Applying Current : Rated Current
7.6	Withstand Voltage	Products shall be no failure.	Measuring terminal : (T1,T2) - (T3,T4) (between terminals) Test Voltage : 125 V(DC) (1 minute)

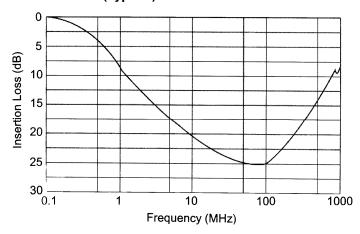
8. Mechanical Performance

No.	Item	Specification	Test Method	
8.1	Appearance and Dimensions	There shall not be a conspicuous dirt, crack,and so on. Dimensions shall be as shown in Fig.1.	Visual Inspection Measured with slide calipers	
8.2	Lead wire Strength	Products shall not be damaged. (cutting of lead wire, missing of pin, etc.)	The body of products shall be fixed, and the force of 5N shall be applied gradually and sustained for 30s to each lead wires in the axial direction of the lead wires.	
8.3	Solderability	The lead wires shall be covered with new solder at least 75% along the circumference of the immersed part.	Flux: Ethanol solution of rosin, 25(wt)% Pre-heat: 150 ± 10 °C, 60 ~ 90 s Solder: Sn-3Ag-0.5Cu Solder Temperature: 245 ± 5 °C Immersion Time: 2 ± 0.5 s Immersion Depth: 2.6 ± 0.8 mm from the root of lead wire	
8.4	Resistance to soldering heat	Meet Table 2. Table 2 Appearance No damage Inductance Change within ± 10 % Withstand Voltage Meet item 7.6	Flux: Ethanol solution of rosin, 25(wt)% Pre-heat: 150 ± 10 °C, 60 ~ 90 s Solder: Sn-3Ag-0.5Cu Solder Temperature: 260 ± 5 °C Immersion Time: 10 ± 1 s Immersion Depth: 2.6 ± 0.8 mm from the root of lead wire Then measured after exposure in the room condition for 4 to 24 hours.	
8.5	Vibration		Vibration Frequency : 10Hz to 55Hz to 10Hz for 1 minute Amplitude : 1.5 mm Time : A period of 2 hours in each of 3 mutually perpendicular directions. (Total 6 hours)	
8.6	Shock		Maximum Acceleration: 981 m/s² Normal Duration: 6 ms Wave form: Half-sine wave Velocity Change: 3.75 m/s Direction: along the three mutually perpendicular axes of the product Times: Three shocks in each directions (total 18 times)	

9. Enviromental Performance

No.	Item	Specification	Test Method
9.1	Temperature Cycle	Meet Table 2.	1 cycle: 1 step: -40 °C (+ 0 °C, -3 °C) / 30 min. 2 step: Ordinary Temp. / 3 min. max. 3 step: +85 °C (+3 °C, -0 °C) / 30 min. 4 step: Ordinary Temp. / 3 min. max. Total of 10 cycles Then measured after exposure in the room condition for 4 to 24 hours.
9.2	Humidity		Temperature: 40 °C ± 2 °C Humidity: 90 %(RH) to 95 %(RH) Time: 1000 h (+24h, -0h) Then measured after exposure in the room condition for 4 to 24 hours.
9.3	Cold Resistance		Temperature : - 40 °C ± 2 °C Time : 1000 h (+24h , -0h) Then measured after exposure in the room condition for 4 to 24 hours.
9.4	Heat Resistance		Temperature: 85 °C ± 2 °C Time: 1000 h (+24h, -0h) Then measured after exposure in the room condition for 4 to 24 hours.
9.5	Heat Life		Temperature: 85 °C ± 2 °C Test Voltage: 50 V(DC) Time: 1000 h (+24h, -0h) Then measured after exposure in the room condition for 4 to 24 hours.

10. Insertion Loss (Typical)



Measuring circuit (based on MIL-STD-220)

 $A = 20 \log(E1/E2)$

A: Insertion Loss (dB)

E1 : Level with Common mode choke coil
E2 : Level without Common mode choke coil

11. Specification of Packaging

11.1.Packing Quantity

Individual packaging 100pcs

11.2. Packing Method

Styrene foam of the stuck products on are placed in an Individual packaging . A quantity in an Outer packaging is depending on a quantity of an order.

11.3. Marking of packaging

(1) Individual packaing

The following items shall be marked on a label and the label is sticked on the Individual packaing.

Customer part number, MURATA part number, Inspection number (**1), RoHS marking (**2), Quantity, etc

**1) « Expression of Inspection No. »

 $\begin{array}{c|c} \square \square & OOOO & \times \times \times \\ \hline (1) & (2) & (3) \end{array}$

(1) Factory Code

(2) Date First digit : Year / Last digit of year

Second digit : Month / Jan. to Sep. \rightarrow 1 to 9, Oct. to Dec. \rightarrow O,N,D

Third, Fourth digit: Day

(3) Serial No.

•*2) « Expression of RoHS marking »

ROHS $-\underline{Y}(\underline{\Delta})$ (1) (2)

(1) RoHS regulation conformity parts.

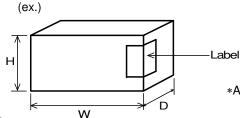
(2) MURATA classification number

(2) Marking for Outside package

The following items shall be marked on a label and the label is sticked on the outside package.

Customer name, Purchasing Order Number, Customer Part Number, MURATA part number, RoHS marking $(\cdot*2)$, Quantity, etc

11.4 Specification of Outer Case



Outer C	ase Dim (mm)	ensions	Standard Individual package Quantity
W	D	Н	in Outer Case
265	89	118	5

*Above Outer Case size is typical. It depends on a quantity of an order.

12. 🛆 Caution

Limitation of Applications

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property.

(1) Aircraft equipment

(7) Traffic signal equipment

(2) Aerospace equipment

(8) Transportation equipment (vehicles, trains, ships, etc.)

(3)Undersea equipment

(9) Data-processing equipment

(4)Power plant control equipment

(10) Applications of similar complexity and /or reliability requirements

(5) Medical equipment

to the applications listed in the above

(6) Disaster prevention / crime prevention equipment

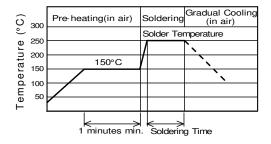
13. Notice

13.1. Soldering conditions

- (1) Flux, Solder
 - · Rosin-based flux should be used.

Do not use strong acidic flux with halide content exceeding 0.2(wt)% (chlorine conversion value.)

- · Use Sn-3.0Ag-0.5Cu solder.
- (2) Standard flow soldering profile.



Solder Temperature	Soldering Time
250 ~ 260 °C	4 ~ 6 s



(3) Resistance to soldering iron goes in the following condition that tip temperature is 350 °C max. and soldering time is 3 s max.

Products and the leads should not be subjected to any mechanical stress during soldering process. (and also while subjected to the equivalent high temperature.)

13.2. Cleaning

Avoid cleaning product due to non-waterproof construction.

13.3. Storage and Handling Requirements

(1) Storage period

Use the products within 12 months after delivered.

Solderability should be checked if this period is exceeded.

- (2) Storage conditions
 - Products should be stored in the warehouse on the following conditions.

Temperature : -10 °C to 40 °C

Humidity : 15 % to 85 % relative humidity No rapid change on temperature and humidity Don't keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of lead terminals resulting in poor solderability or corrosion of component windings.

- Products should be stored on the palette 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.
- (3) Handling Condition

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

14. **\(\lambda \)** Note

- (1) Please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.
- (2) You are requested not to use our product deviating from the reference specifications.
- (3) The contents of this reference specification are subject to change without advance notice. Please approve our product specifications or transact the approval sheet for product specifications before ordering.

Fig. 1

PLT09H Appearance and Dimensions

