

# Multilayer Chip Ferrite Large Current Inductors DFL Series



### Features

- Compact size and light weight
- Excellent solderability and heat resistance for either flow or reflow soldering
- No cross coupling between inductors due to magnetic shield
- Low RDC and High IDC

### Applications

- Cellular platform DC-DC converter circuit
- Portable AV equipment (digital camera, DVD Type)
- Cellular platform(handset Type)
- Memex(computer Type)

### **PRODUCT IDENTIFICATION**



DFL2012

#### Shape and Dimensions



Dimensions in mm				
TYPE	Α	В	С	D
DFL1608	1.6±0.2	0.8±0.2	0.8±0.2	0.3±0.2
			0.9±0.2	

1.25±0.2

1.25±0.2

#### **Recommended Pattern**



Dimensions in mm					
TYPE	Α	В	С		
1608	0.7 ~ 0.8	1.8 ~ 2.0	0.6 ~ 0.8		
2012	1.0~1.2	2.6~4.0	1.0~1.2		

2.0±0.2

0.5±0.3



### **Rating:**

## Storage Temperature: -2 5 $^{\circ}\text{C} \sim 8$ 5 $^{\circ}\text{C}$ (after PCB)

 $-5 \degree C \sim 4 \ 0 \degree C$ ,Humidity 4 0 %  $\sim 7 \ 0 \%$  (before PCB)

### **Standard Testing Condition**

	Unless otherwise specified	In case of doubt	
Temperature	Ordinary Temperature(15 to 35 )	20±2	
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70 % RH	

### **Electrical Characteristics**

				Rated		
Part No.	Inductance	Test Freq.	RDC	Current	Tolerance	
	(uH)		(Ω)Max.	(mA)Max.	(±%)	
DFL1608C1R0M	1	1 MHz,200 mV	0.12	1500	20	
DFL1608C2R2M	2.2	1 MHz,200 mV	0.2	1000	20	
DFL1608C4R7M	4.7	1 MHz,200 mV	0.50	500	20	
DFL1608F4R7M	4.7	1 MHz,200 mV	0.25	800	20	
DFL1608C100M	10	1 MHz,200 mV	0.9	90	20	
DFL1608F100M	10	1 MHz,200 mV	0.55	400	20	
DFL2012C1R0M	1	1 MHz,200 mV	0.06	2200	20	
DFL2012C2R2M	2.2	1 MHz,200 mV	0.19	1300	20	
DFL2012C3R3M	3.3	1 MHz,200 mV	0.12	1500	20	
DFL2012C4R7M	4.7	1 MHz,200 mV	0.3	900	20	
DFL2012C100M	10	1 MHz,200 mV	0.5	400	20	
DFL2012C220M	22	1 MHz,200 mV	0.7	300	20	

#### NOTE:

1.Operating temperature range - 2  $\,$  5  $^\circ C \sim 1 \,$  0  $\,$  5  $^\circ C$  (Including self - temperature rise)

2.Rate Current : Applied the current to coils, the temperature rise shall not be more than 30  $^\circ\!\mathbb{C}$ 



## **Construction:**



Material List:

NO	PART	MATERIAL
1	Ferrite Substance	NiO-CuO-ZnO-Ferrite
2	Silver electrode	Ag
3	Silver electrode	Ag
4	Cu plating	Cu
5	Ni plating	Ni
6	Sn plating	Sn



# **Reliability Of Ferrite Multilayer Chip Inductor**

### 1-1.Mechanical Performance

No	ltem	Specification	Test Method
1-1-1 Flexure Strength		The forces applied on the right	Test device shall be soldered on the substrate
		conditions must not damage	Substrate Dimension: 100x40x1.6mm
		the terminal electrode and the	Deflection: 2.0mm
		ferrite	Keeping Time: 30sec
			*For 100505, substrate dimension is 100x40x0.8mm
1-1-2 Vibration			Test device shall be soldered on the substrate
			Oscillation Frequency: 10 to 55 to 10Hz for 1min
			Amplitude: 1.5mm
			Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-3 Resistance	e to Soldering Heat	Appearance: No damage	Pre-heating: 150°C, 1min
		More than 75% of the terminal	Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free)
		electrode should be covered	Solder Temperature: 260±5°C
		with solder.	Immersion Time: 10±1sec
		Inductance: within ±20% of	
		initial value	
			_
1-1-4 Solder abil	ity	The electrodes shall be at	Pre-heating: 150°C, 1min
		least 95% covered with new	Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free)
		solder coating	Solder Temperature: 245±5°C(Pb-Free)
			Immersion Time: 4±1sec
1			

### **1-2.Environmental Performance**

No	ltem	Specification		Test Method	
1-2-1	Temperature Cycle	Appearance: No damage	One cycle:		
		Inductance:within±20% of	Step	Temperature()	Time (min)
		initial value	1	-25±3	30
			2	25±2	3
			3	85±3	30
			4	25±2	3
			Total: 100cycles		
			Measured after exposure in the room condition for 24hrs		
1-2-2	Humidity Resistance		Temperature: 40±2		
			Relative Humidity: 90 ~ 95% / Time: 1000hrs		
			Measured after exposure in the room condition for 24hrs		
1-2-3	High		Temperature: 85±3		
	Temperature Resistance		Relative Humidity: 20%		
			Applied Current: Rated Current / Time: 1000hrs		
			Measured after exposure in the room condition for 24hrs		
1-2-4	Low		Temperature: -25±3		
	Temperature Resistance		Relative Humidity: 0% / Time: 1000hrs		
			Measured after exposure in the room condition for 24hrs		



