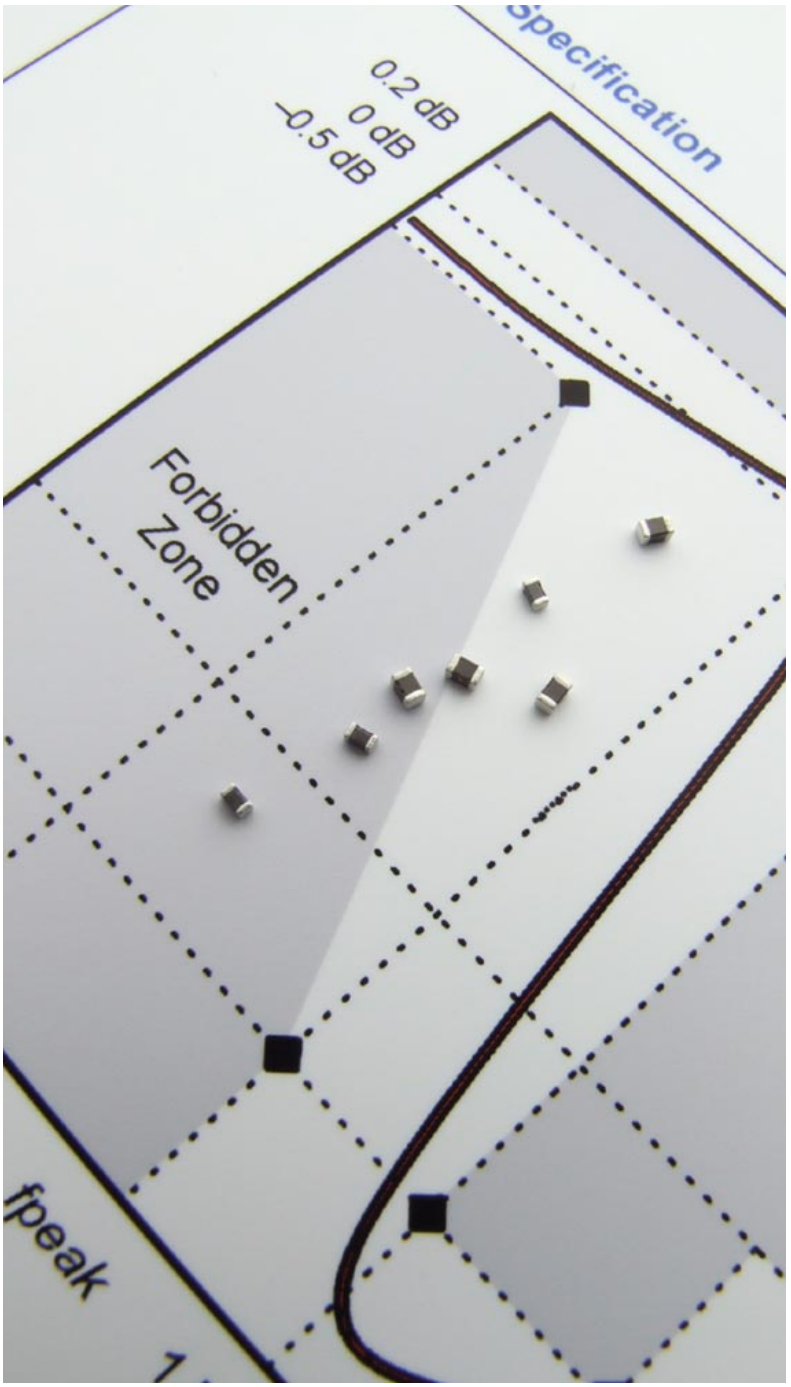
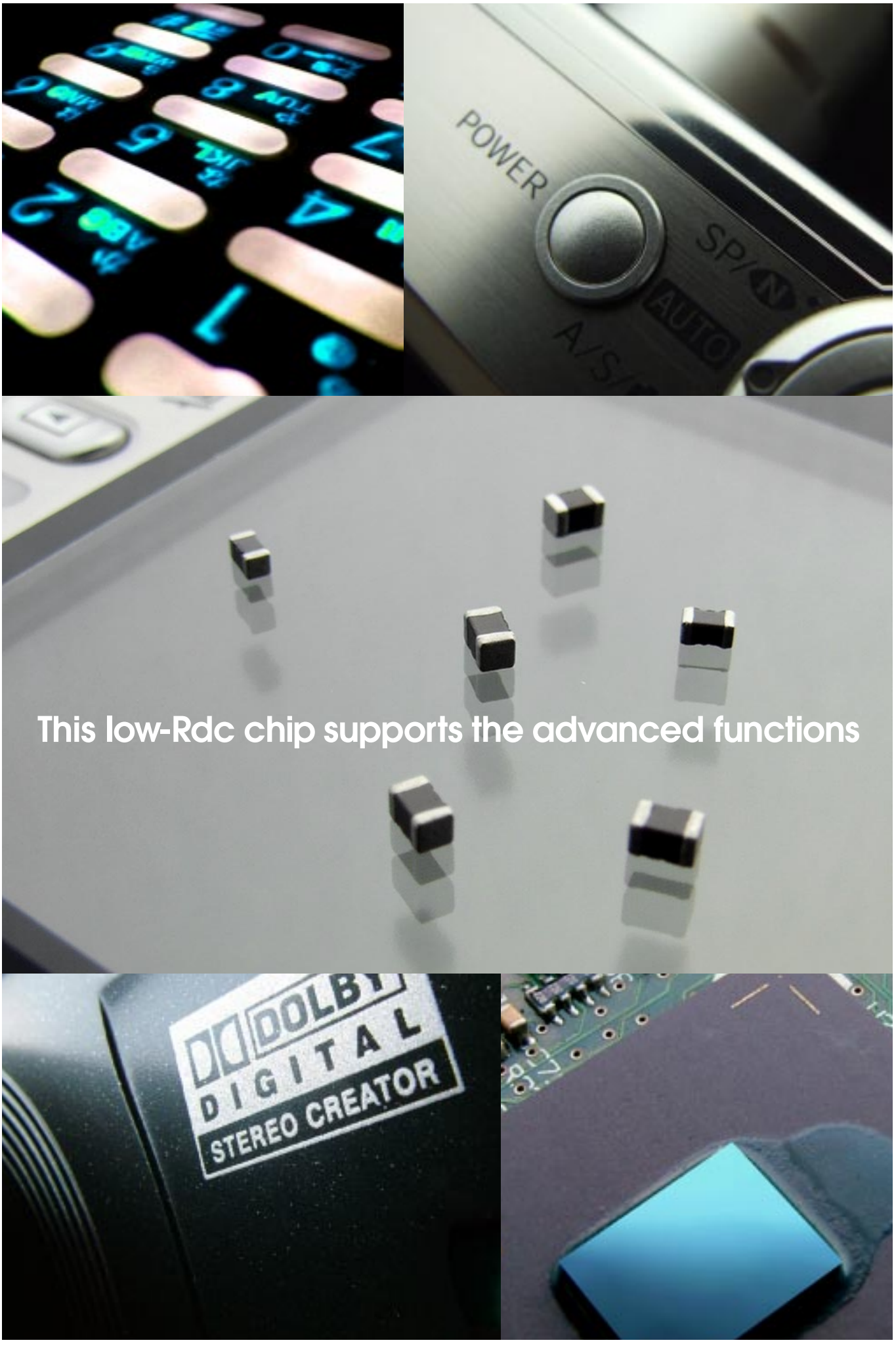
Wire-wound Surface Mount Small Inductors For DC Power Lines

GLFR

series




POWER
SP/
AUTO
A/S/
This low-Rdc chip supports the advanced functions
DOLBY
DIGITAL
STEREO CREATOR

Wire-wound Surface Mount Small Inductors For DC Power Lines

GLFR series

We developed optimal shapes and characteristics for the DC power lines of cutting-edge digital devices, where downsizing and increased, multified functionality are sought, such as high-end mobile phones with diverse features, digital still cameras, portable digital video cameras, diverse mobile audio-visual devices, PDAs, laptop PCs, and so forth.

Unprecedented advantages of low-Rdc and reduced implementation area are offered to MPUs, for which rigorous management of voltage dip is required; to choke coils for the Vcc-line decoupling of diverse LSI; and to the stepup/stepdown inductors of mobile phones' DC-DC converter circuits.

GLFR series 1608 type

With the technology drastically reducing the Rdc value of GLF series 1608 type by 49-67%, the 1608 type, which is in the industry's smallest class as winding type, has achieved a value of 47μH. E3 series offers a total of 6 products ranging from 1μH to 47μH. The almost identical specification and inductance frequency characteristic as GLF series 2012 type allows designing of high-density patterns through replacement.

GLFR series 2012 type

The Rdc value of GLF series 2012 type, which is proudly on the industry's smallest level, was reduced by 12-30%, offering further freedom in designing the patterns of the Vcc lines of the MPUs of laptop computers and the image processing LSIs for digital still cameras, and digital video cameras where voltage dip is severely managed. Similarly to GLF series 2012 type, E3 series offers a total of 7 products ranging from 1μH to 100μH.

All products conform to the RoHS Directive.*

The high-temperature reflow process is supported through our original terminal electrode structure, which supports mold resin and diverse lead-free soldering which are superior in physical property and heat resistance.

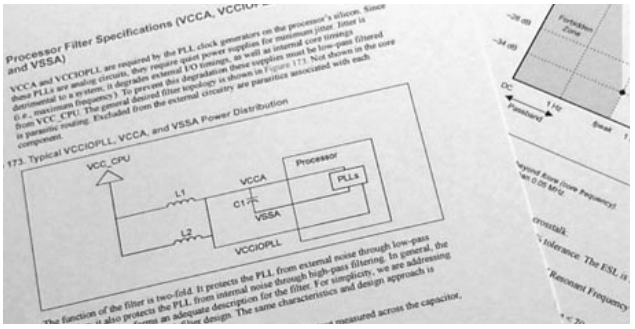
* Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

The world's smallest Rdc value as winding type chip inductor was sought. We respond to the advanced needs of DC power line designs.

The most important characteristic required for electronic parts indispensable to DC power lines

Generally, the range of the voltage fluctuation which CPUs, various LSIs, and ICs can tolerate is set around ±5%. However, with the involvement of the inductance element parasitizing on the Vcc line when the load capacity (consumption current) changes and the choke coils inserted in the line for decoupling, the output voltage of the DC-DC converter on the circuit is expected to drop by about 1-2% before it's supplied to the Vcc terminal of the IC. To avoid such voltage dip and to ensure the stable operation of CPUs, LSIs, and ICs, appropriate consideration has been made in designing the patters of Vcc lines.

However, as devices become smaller and slimmer and circuits become denser, wiring rules are further narrowed and the fluctuation amount of consumption current tends to increase. With mobile devices such as multi-functional high-end mobile phones and small digital still cameras, digital videocameras, and so on where diverse circuit units are assembled in three dimensional, there have been an increasing number of circumstances where the existing countermeasures against voltage dip are not enough. Further reduction of Rdc is required for the stepup/stepdown inductors for mobile phones' DC-DC converter circuits as well as the decoupling choke coils, which are heavily used for reduction and removal of the high-frequency noise elements superimposed in Vcc lines.



GLFR/GLF series

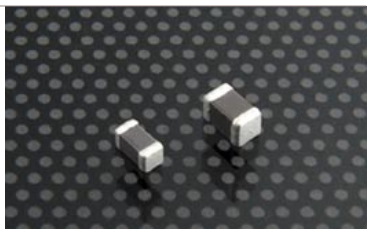
Comparative tables of DC resistance value and rated current value (Categorized by shape type)

Idc (Rated current) notations: "10%" when nominal value L decreased by 10%; "20°C" when the temperature rose to 20°C by self heating

Series / Shape type	1 μH			2.2 μH			4.7 μH			10 μH			22 μH			47 μH			100 μH		
	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C	Rdc(Ω)	Idc(mA) 10%	Idc(mA) 20°C
L1.6 x W0.8 x T0.8 mm																					
GLFR1608	0.08	230	900	0.17	160	600	0.24	110	500	0.36	80	400	1	50	200	2.3	35	100			
GLF1608	0.17	125	400	0.33	75	275	0.55	70	220	0.7	50	180	3	35	100						
Rdc reduction amount	−52.9%			−48.5%			−56.4%			−48.6%			−66.7%								
L2.0 x W1.25 x T1.25 mm																					
GLFR2012	0.058	300	1150	0.088	240	900	0.2	140	600	0.3	75	300	0.7	75	300	1.38	50	230	3	30	160
GLF2012	0.07	300	1000	0.1	240	850	0.24	140	550	0.36	100	450	1	75	300	1.7	50	180	4	30	120
Rdc reduction amount	−17.1%			−12%			−16.7%			−16.7%			−30%			−18.8%			−25%		
L2.0 x W1.25 x T0.8 mm																					
GLF201208	0.15	340	560	0.36	220	380	0.66	160	300	1.1	130	230	2.6	80	130	5.3	60	100			
L2.5 x W1.8 x T1.8 mm																					
GLF2518	0.05	500	1200	0.08	340	950	0.11	240	800	0.2	165	600	0.45	115	400	0.85	85	275	1.9	55	175
GLC2518*	0.08	850	980	0.13	650	750	0.2	475	600	0.36	350	470	0.9	225	300	1.9	170	200	3.5	110	150
L2.5 x W1.8 x T1.25 mm																					
GLF251812	0.1	650	900	0.2	450	625	0.38	275	450	0.6	200	350	1.2	140	250	2.5	100	175	4.7	80	125

*GLC series : High Current Type

GLFR
series



TDK's consistent efforts: Simultaneous pursuit of downsizing and reduced Rdc

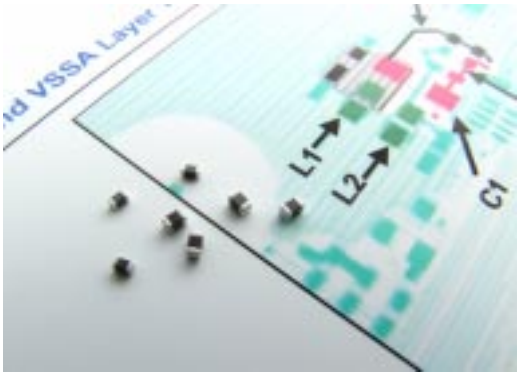
Responding to these technological trends, TDK has been making consistent and concurrent effort toward downsizing and reduced Rdc of DC power line decoupling choke coils. Also, since early 2002, we have been developing and supplying GLF, GLC series as the second-generation ultra-small series following NLC, NLCV, NLFC, and NLFV series, which were highly acclaimed worldwide with the original structural designs and the rich product lineup as the small SMD type inductor for DC power lines.

Since the development of NL453232 (in 1981), the NL family has continued to receive worldwide high recognition with the sales of over 34 billion units in the cumulative total with 3 characteristic groups and 5 shapes covering 0.01-10000 μH. The GLF and GLC series were realized through a new structural design and production processes where the reliable technologies cultivated in the NL family were implemented in a further downsized shape. These 2 series belong to the world's smallest group as the winding mold type.

* 1982.12-2006.12

A new chip structure seeking the limit in minimization and reducing Rdc of winding inductors

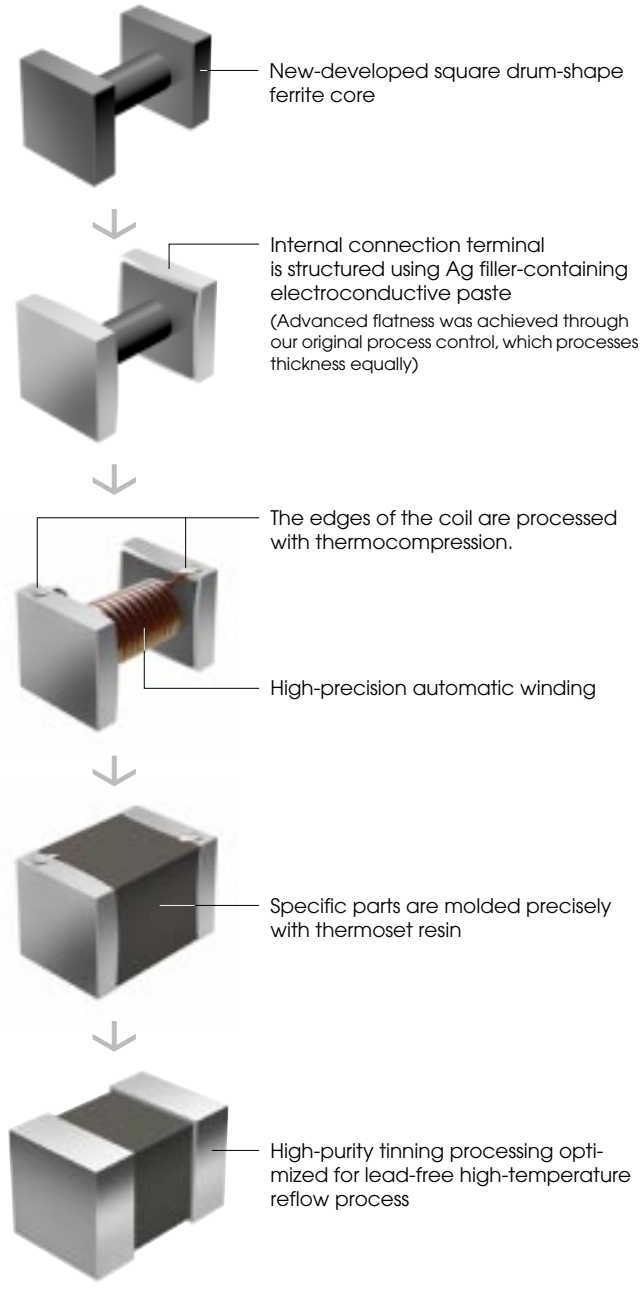
To respond quickly to the needs of the latest circuit designs of high-end mobile phones, digital still cameras, digital video cameras , and so forth, which bring a huge impact on the global electronics market with their continuous downsizing and heightened functions, we present you the most advanced series GLFR, which further improved GLF and GLC's fundamental concept: "Downsizing to the world's smallest level and realization of low-Rdc".



As shown in the DC resistance values and rated-current comparative table, the biggest advantage of GLFR series is the low Rdc which is even lower than GLF series. Despite the fact that its structure allows mass production in the same production processes and lines as GLF and GLC series, Rdc was reduced by 12-30% in 2012 type and by as much as 49-67% in 1608 type. The technological "core" which made that possible literally lies within the built-in ferrite core.

Original structure and production processes

A homogeneous and precise crystal structure was realized by making the starting materials minute and by optimizing the burning process. Not to mention that the magnetic characteristic was improved, a robust physical characteristic was achieved. As a result, the thickness of both edges (brim) could be made even thinner than the existing limit, which drastically increased the volume of the winding with a similar outside dimension to that of the conventional core for GLF series, achieving a similar inductance value with a thicker winding than before.

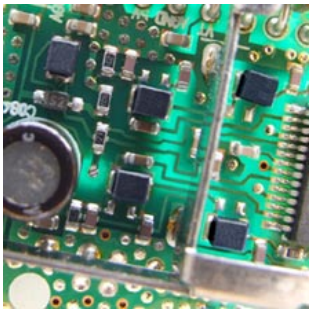


Main product types of winding SMD type small inductors

Idc (rated current) notation: A smaller value between the one based on inductance changing rate (Decreased by 10% to the nominal value L) and the one based on temperature rise (temperature rise by 20 degrees C by self heating) is specified.

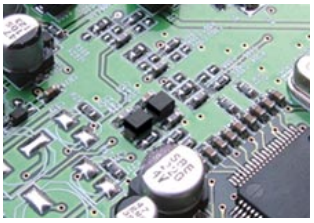
For signal lines

Wide L-value range/High Q
Narrow tolerances



Applicational example of NL series : Digital TV tuner (Signal lines of tuner IC/DC power lines)

Applicational example of NL series : ETC on-board unit (Signal lines of receiving circuit)



Applicational example of NL series : Portable DVD player (Analogue video signal input lines)

NLV25
L2.5×W2.0×T1.8 mm

Inductance(μH) ±5% E12 series
0.01 1 33 100 470 1000 1200 10000
Rdc : 21Ω / Idc : 60 mA
Rdc : 0.26Ω / Idc : 530 mA

NLV32
L3.2×W2.5×T2.2 mm

Inductance(μH) ±5% E12 series
0.01 1 33 100 470 1000 1200 10000
Rdc : 40Ω / Idc : 25 mA
Rdc : 0.13Ω / Idc : 450 mA

NL453232
L4.5×W3.2×T3.2 mm

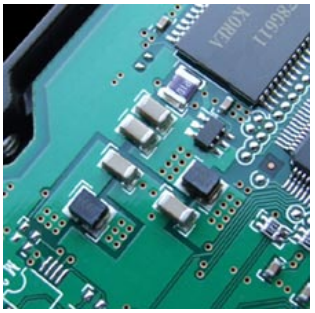
Inductance(μH) ±5% E12 series
0.01 1 33 100 470 1000 1200 10000
Rdc : 40Ω / Idc : 30 mA
Rdc : 0.5Ω / Idc : 450 mA

NL565050
L5.6×W5.0×T5.0 mm

Inductance(μH) ±5% E12 series
0.01 1 33 100 470 1000 1200 10000
Rdc : 17Ω / Idc : 75 mA
Rdc : 150Ω / Idc : 25 mA

For power line chokes

For large current



Applicational example of NLCV series : ATA-compatible HDD (Vdd lines of HDD controllers)

GLCR2012
L2.0×W1.25×T1.25 mm

Inductance(μH) E3 series
~4.7μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 4.5Ω / Idc : 40 mA
Rdc : 0.09Ω / Idc : 490 mA

Applicational example of NLC series : Car navigation system (DC power lines)

GLC2518
L2.5×W1.8×T1.8 mm

Inductance(μH) E3 series
~4.7μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 3.5Ω / Idc : 110 mA
Rdc : 0.08Ω / Idc : 850 mA

NLCV25
L2.5×W2.0×T1.8 mm

Inductance(μH) E6 series
~ 6.8μH : ±20% / 10μH~ : ±10%
0.15 1 33 100 330 1000
Rdc : 4.2Ω / Idc : 120 mA
Rdc : 0.34Ω / Idc : 475 mA

NLCV32
L3.2×W2.5×T2.2 mm

Inductance(μH) E6 serie
~6.8μH : ±20% / 10μH~ : ±10%
0.15 1 33 100 330 1000
Rdc : 12.3Ω / Idc : 70 mA
Rdc : 0.028Ω / Idc : 1450 mA

NLC453232
L4.5×W3.2×T3.2 mm

Inductance(μH) ±10% E12 series
0.15 1 33 100 330 1000
Rdc : 13Ω / Idc : 90 mA
Rdc : 0.11Ω / Idc : 1050 mA

NLC565050
L5.6×W5.0×T5.0 mm

Inductance(μH) ±10% E12 series
0.15 1 33 100 330 1000
Rdc : 15Ω / Idc : 85 mA
Rdc : 0.03Ω / Idc : 1800 mA

Low Rdc

GLF1608
L1.6×W0.8×T0.8 mm

Inductance(μH) ±20% E3 series
1 22 47 100 330 1000
Rdc : 3Ω / Idc : 35 mA
Rdc : 0.17Ω / Idc : 125 mA

GLF201208
L2.0×W1.25×T0.8 mm

Inductance(μH) ±20% E3 series
1 22 47 100 330 1000
Rdc : 5.3Ω / Idc : 60 mA
Rdc : 0.15Ω / Idc : 340 mA

GLF2012
L2.0×W1.25×T1.25 mm

Inductance(μH) E3 series
~4.7μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 4Ω / Idc : 30 mA
Rdc : 0.07Ω / Idc : 300 mA

GLF251812
L2.5×W1.8×T1.8 mm

Inductance(μH) ±20% E3 series
1 22 47 100 330 1000
Rdc : 4.7Ω / Idc : 80 mA
Rdc : 0.1Ω / Idc : 650 mA

GLF2518
L2.5×W1.8×T1.8 mm

Inductance(μH) E3 series
~4.7μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 1.9Ω / Idc : 55 mA
Rdc : 0.05Ω / Idc : 500 mA

NLFV25
L2.5×W2.0×T1.8 mm

Inductance(μH) E6 series
~6.8μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 4Ω / Idc : 40 mA
Rdc : 0.07Ω / Idc : 455 mA

NLFC322522
L3.2×W2.5×T2.2 mm

Inductance(μH) E6 series
~6.8μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 24Ω / Idc : 15 mA
Rdc : 0.06Ω / Idc : 500 mA

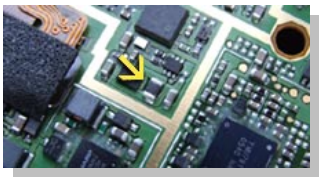
NLFC453232
L4.5×W3.2×T3.2 mm

Inductance(μH) E6 series
~6.8μH : ±20% / 10μH~ : ±10%
1 22 47 100 330 1000
Rdc : 6Ω / Idc : 45 mA
Rdc : 0.05Ω / Idc : 800 mA

Applicational example of NLFC series : Vcc lines of DSC

GLFR1608 New Series
L1.6×W0.8×T0.8 mm

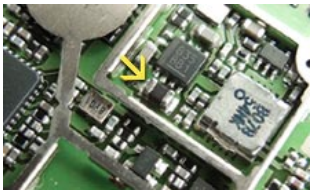
Inductance(μH) ±20% E3 series
1 22 47 100 330 1000
Rdc : 2.3Ω / Idc : 35 mA
Rdc : 0.08Ω / Idc : 230 mA

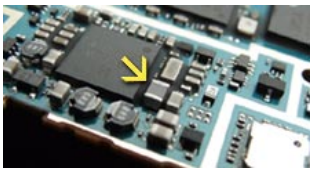


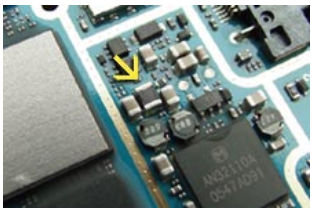
GLFR2012 New Series
L2.0×W1.25×T1.25mm

Inductance(μH) ±20% E3 series
1 22 47 100 330 1000
Rdc : 3Ω / Idc : 30 mA
Rdc : 0.058Ω / Idc : 300 mA

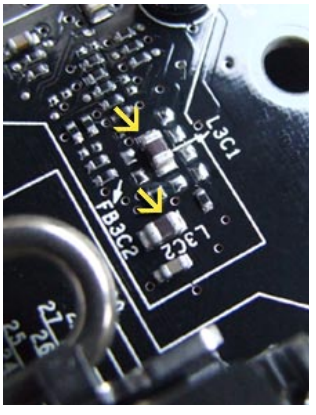
Applicational example of GLF series : Vcc lines of cellular phone





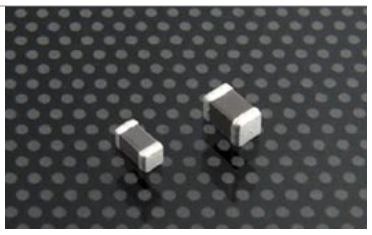


Applicational example of GLF series : Vcc lines of Notebook PC



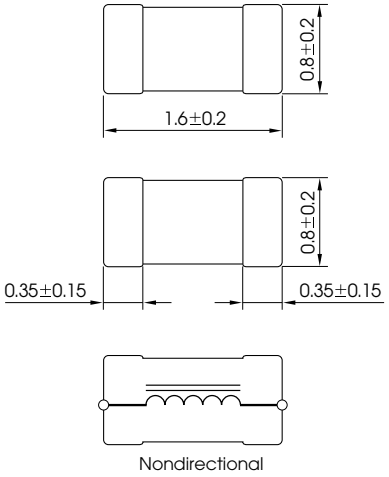
Shapes and dimensions/Equivalent circuit
Recommended PC board pattern
Basic specifications

GLFR series



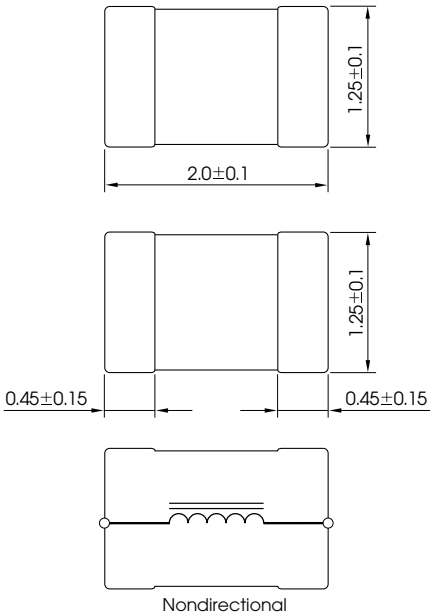
Shapes and dimensions
Equivalent circuit

GLFR1608



Weight : 5mg
Dimensions in mm

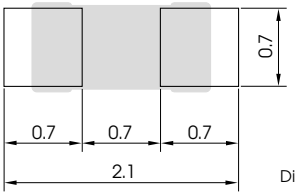
GLFR2012



Weight : 15mg
Dimensions in mm

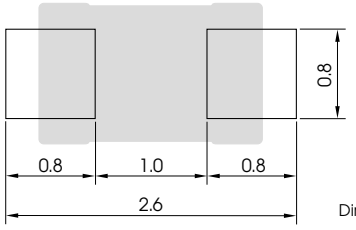
Recommended PC board pattern
Reflow process

GLFR1608



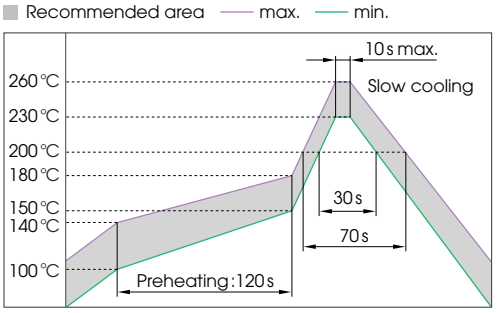
Dimensions in mm

GLFR2012



Dimensions in mm

Recommended soldering conditions
Lead-free solder/High-temperature reflow process



Temperature range

Operating : −30 to +105°C	Storage* : −40 to +105°C

*Single product

Electrical characteristics
Frequency characteristics
DC superposition characteristics

GLFR1608

Electrical characteristics

1.6 0.8 0.8 (mm)

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω)±30%	Rated current (mA) max. Inductance changing rate*1		Temperature rise*2	Part No.
				at 10%	at 30%	at 20°C	
1	±20	7.96	0.08	230	360	900	GLFR1608T1R0M-LR
2.2	±20	7.96	0.17	160	240	600	GLFR1608T2R2M-LR
4.7	±20	7.96	0.24	110	170	500	GLFR1608T4R7M-LR
10	±20	2.52	0.36	80	120	400	GLFR1608T100M-LR
22	±20	2.52	1	50	70	200	GLFR1608T220M-LR
47	±20	2.52	2.3	35	50	100	GLFR1608T470M-LR

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 30% : The value when the rate decreased by 30% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

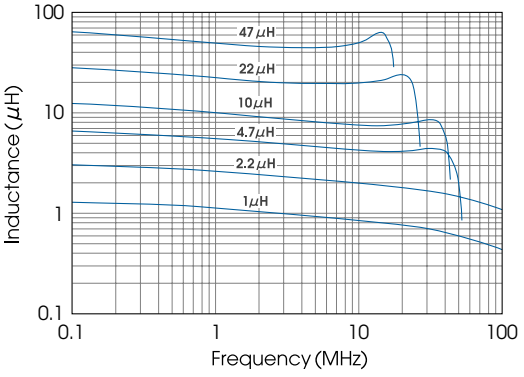
L : Agilent Technologies 4294A Impedance analyzer +16197A Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLFR1608

Inductance vs. frequency characteristics

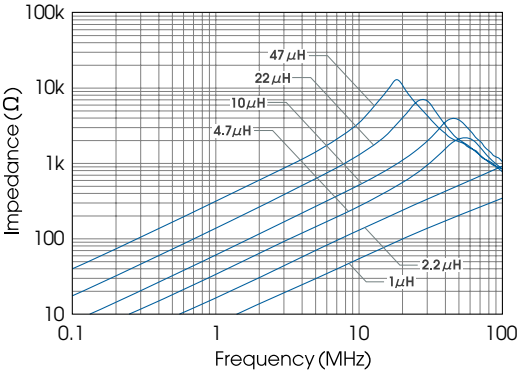
HP 4194A



GLFR1608

Impedance vs. frequency characteristics

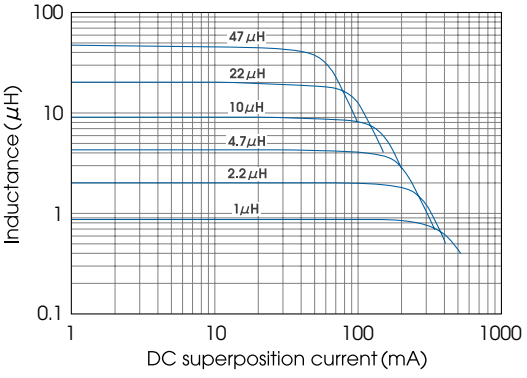
HP 4194A



GLFR1608

Inductance change vs. DC superposition characteristics -1

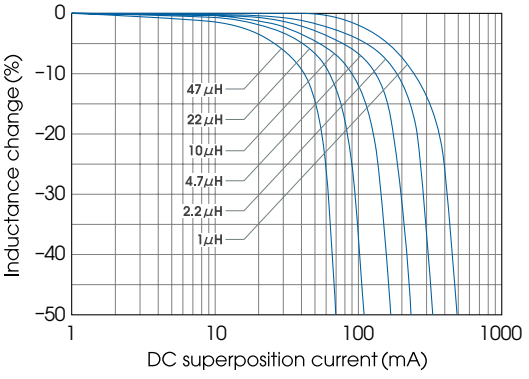
HP 4194A

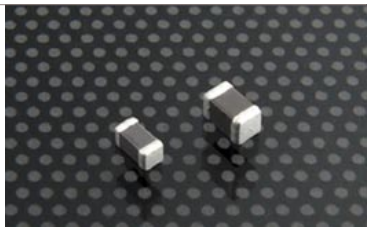


GLFR1608

Inductance change vs. DC superposition characteristics -2

HP 4194A





GLFR2012

Electrical characteristics

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω) ±30%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 30%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.058	300	550	1150	GLFR2012T1R0M-LR
2.2	±20	7.96	0.088	240	400	900	GLFR2012T2R2M-LR
4.7	±20	7.96	0.2	140	280	600	GLFR2012T4R7M-LR
10	±20	2.52	0.3	100	180	500	GLFR2012T100M-LR
22	±20	2.52	0.7	75	110	300	GLFR2012T220M-LR
47	±20	2.52	1.38	50	85	230	GLFR2012T470M-LR
100	±20	0.796	3	30	60	160	GLFR2012T101M-LR

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 30% : The value when the rate decreased by 30% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

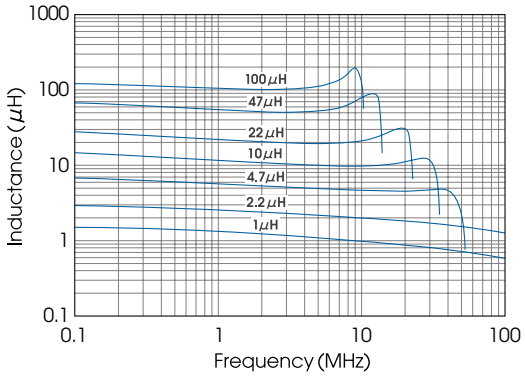
L : Agilent Technologies 4294A Impedance analyzer +16197A Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLFR2012

Inductance vs. frequency characteristics

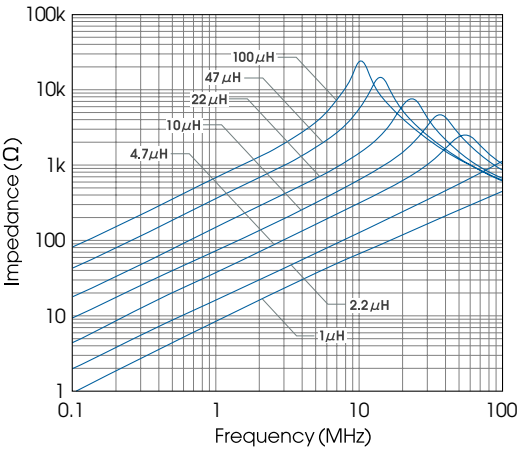
HP 4194A



GLFR2012

Impedance vs. frequency characteristics

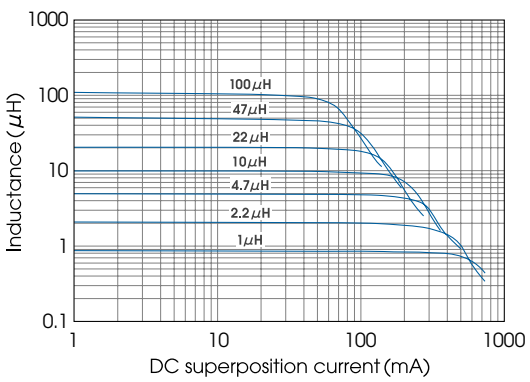
HP 4194A



GLFR2012

Inductance change vs. DC superposition characteristics -1

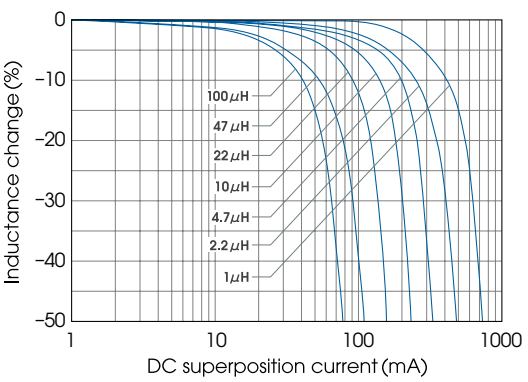
HP 4194A



GLFR2012

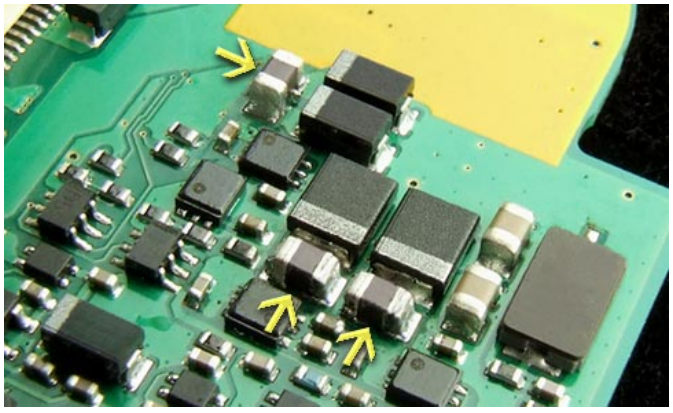
Inductance change vs. DC superposition characteristics -2

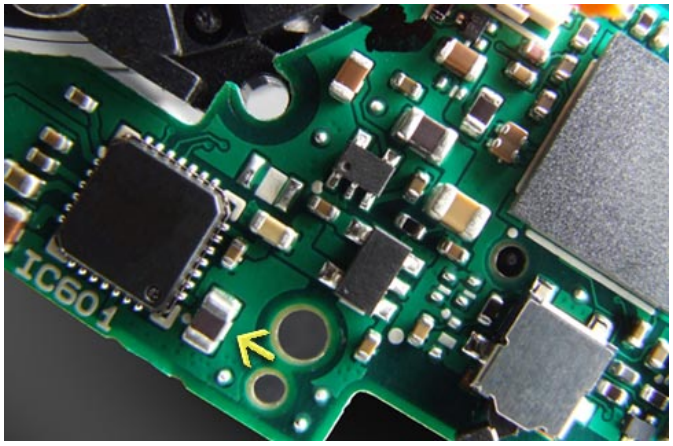
HP 4194A

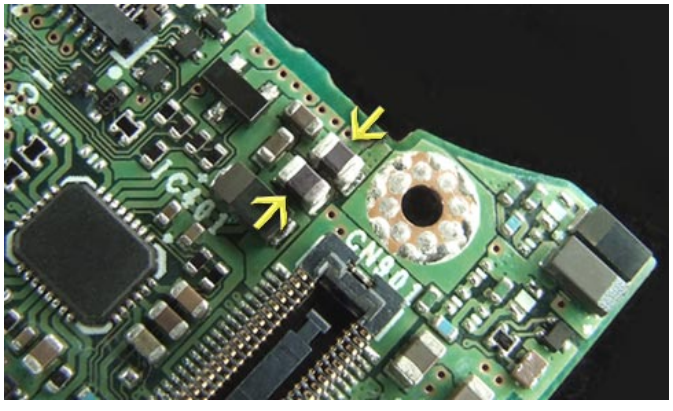


Example of application

Digital still camera

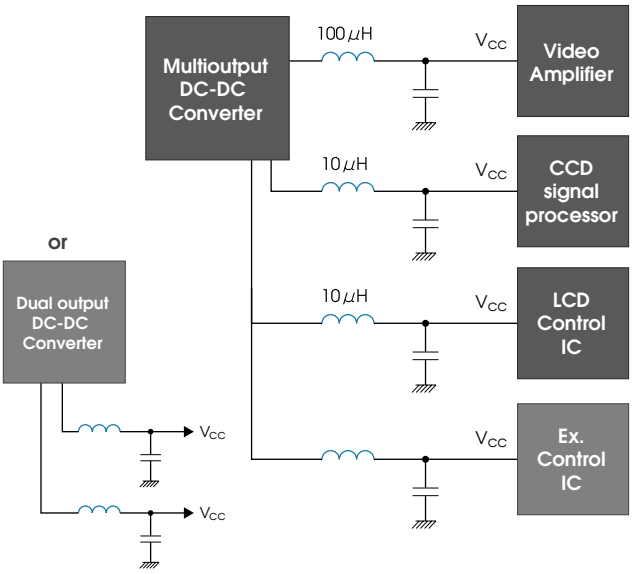


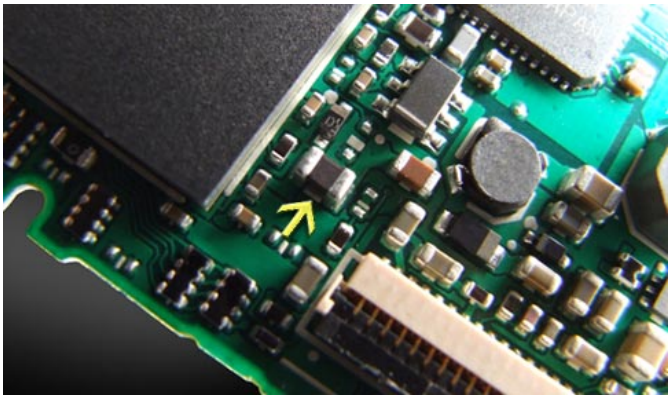


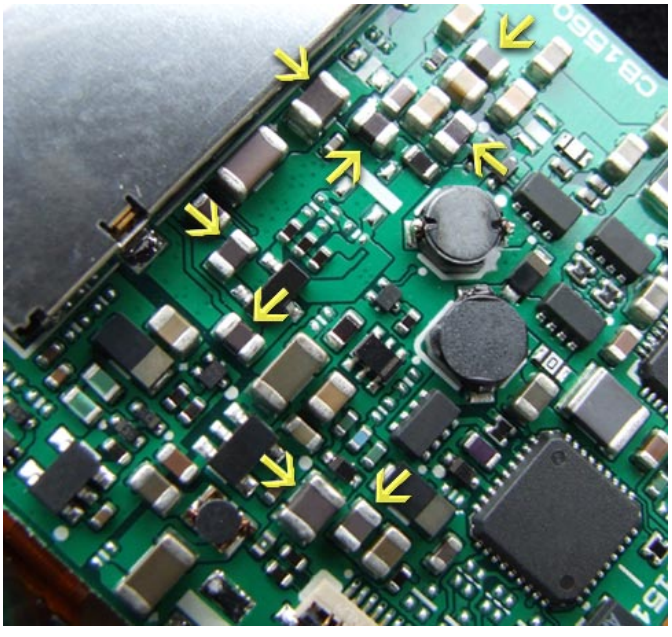


Representative example of use

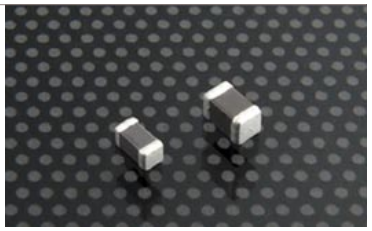
Decoupling of diverse IC Vcc lines (LC filter circuit structure)







GLFR series

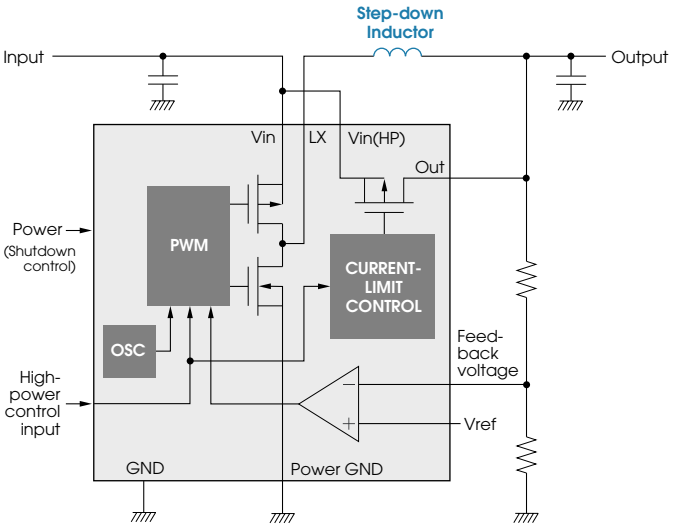


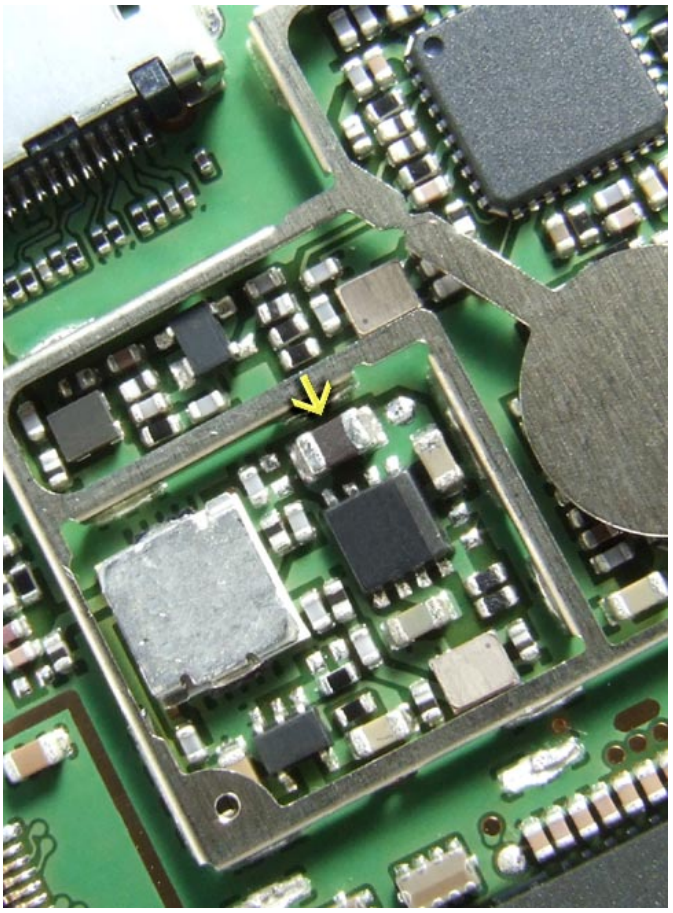
Example of application

Cellular phone

Representative example of use -1

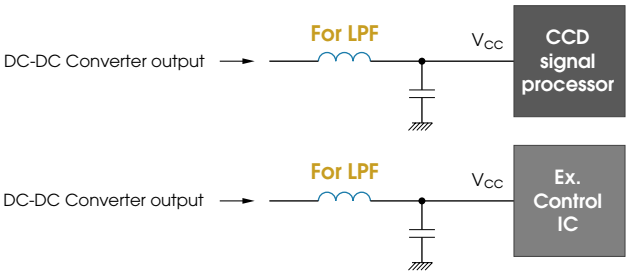
Step-up inductor/step-down inductor for DC-DC converter circuits

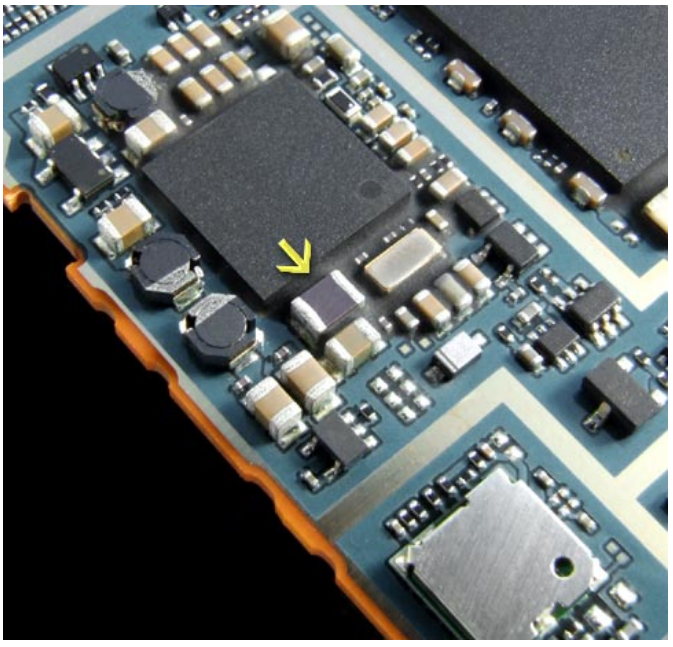


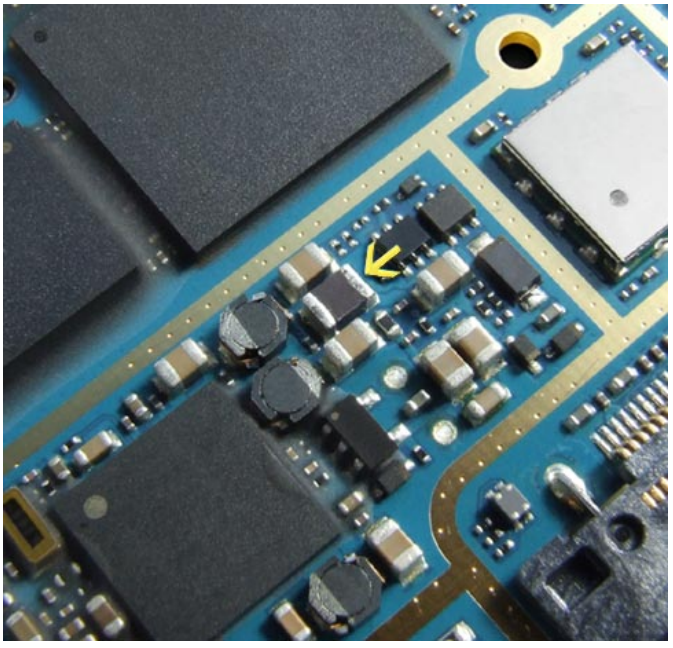


Representative example of use -2

Decoupling of diverse IC Vcc lines (LC filter circuit structure)







Related products / GLF series
Electrical characteristics

Low Rdc Type

GLF1608

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω)±30%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 20%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.17	125	220	400	GLF1608T1R0M
2.2	±20	7.96	0.33	75	160	275	GLF1608T2R2M
4.7	±20	7.96	0.55	70	115	220	GLF1608T4R7M
10	±20	2.52	0.7	50	90	180	GLF1608T100M
22	±20	2.52	3	35	60	100	GLF1608T220M

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer+16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLF2012

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω)±30%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 20%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.07	300	400	1000	GLF2012T1R0M
2.2	±20	7.96	0.1	240	300	850	GLF2012T2R2M
4.7	±20	7.96	0.24	140	200	550	GLF2012T4R7M
10	±10	2.52	0.36	100	140	450	GLF2012T100K
22	±10	2.52	1	75	100	300	GLF2012T220K
47	±10	2.52	1.7	50	75	180	GLF2012T470K
100	±10	0.796	4	30	50	120	GLF2012T101K

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

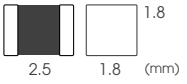
*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer+16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLF2518



Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω)	Rated current (mA) max. Inductance changing rate*1 at 10%	at 20%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.05±30%	500	675	1200	GLF2518T1R0M
2.2	±20	7.96	0.08±30%	340	450	950	GLF2518T2R2M
4.7	±20	7.96	0.11±30%	240	320	800	GLF2518T4R7M
10	±10	2.52	0.2±20%	165	210	600	GLF2518T100K
22	±10	2.52	0.45±20%	115	150	400	GLF2518T220K
47	±10	2.52	0.85±20%	85	100	275	GLF2518T470K
100	±10	0.796	1.9±20%	55	75	175	GLF2518T101K

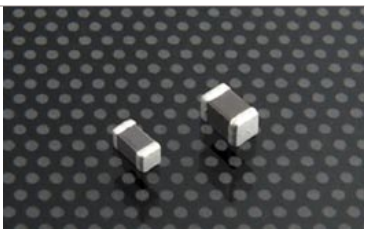
*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer+16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product



Low Profile Type

GLF201208

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω) ±20%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 20%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.15	340	460	560	GLF201208T1R0M
2.2	±20	7.96	0.36	220	300	380	GLF201208T2R2M
4.7	±20	7.96	0.66	160	230	300	GLF201208T4R7M
10	±20	2.52	1.1	130	170	230	GLF201208T100M
22	±20	2.52	2.6	80	110	130	GLF201208T220M
47	±20	2.52	5.3	60	80	100	GLF201208T470M

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer + 16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLF251812

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω) ±20%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 20%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.1	650	800	900	GLF251812T1R0M
2.2	±20	7.96	0.2	450	600	625	GLF251812T2R2M
4.7	±20	7.96	0.38	275	450	450	GLF251812T4R7M
10	±20	2.52	0.6	200	325	350	GLF251812T100M
22	±20	2.52	1.2	140	250	250	GLF251812T220M
47	±20	2.52	2.5	100	175	175	GLF251812T470M
100	±20	0.796	4.7	80	125	125	GLF251812T101M

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer + 16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

Related products / GLCR, GLC series
Electrical characteristics

High Current Type

GLCR2012

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω) ±30%	Rated current (mA) max. Inductance changing rate*1 at 10%	at 30%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.09	490	850	900	GLCR2012T1R0M
2.2	±20	7.96	0.2	350	550	600	GLCR2012T2R2M
4.7	±20	7.96	0.29	225	420	500	GLCR2012T4R7M
10	±20	2.52	0.5	155	270	380	GLCR2012T100M
22	±20	2.52	1	105	180	250	GLCR2012T220M
47	±20	2.52	2.4	70	120	170	GLCR2012T470M
100	±20	0.796	4.5	40	85	130	GLCR2012T101M

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 30% : The value when the rate decreased by 30% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer+16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product

GLC2518

Inductance (μH)	Inductance tolerance (%)	Inductance test frequency (MHz)	DC resistance (Ω)	Rated current (mA) max. Inductance changing rate*1 at 10%	at 30%	Temperature rise*2 at 20°C	Part No.
1	±20	7.96	0.08 ±30%	850	—	980	GLC2518T1R0M
2.2	±20	7.96	0.13 ±30%	650	—	750	GLC2518T2R2M
4.7	±20	7.96	0.2 ±30%	475	—	600	GLC2518T4R7M
10	±10	2.52	0.36 ±20%	350	—	470	GLC2518T100K
22	±10	2.52	0.9 ±20%	225	—	300	GLC2518T220K
47	±10	2.52	1.9 ±20%	170	—	200	GLC2518T470K
100	±10	0.796	3.5 ±20%	110	—	150	GLC2518T101K

*1. Based on inductance changing rate
at 10% : The electric current value when the rate decreased by 10% to the nominal value L; at 20% : The value when the rate decreased by 20% to the nominal value L

*2. Based on temperature rise
at 20°C : The electric current value when it reached 20°C by self heating

Measuring Instruments

L : Agilent Technologies 4294A Impedance analyzer+16034E Test fixture or a similar product

Rdc : MATSUSHITA VP-2941A Digital milliohm meter or a similar product