Inductors for Power Circuits

Multilayer/STD • magnetic shielded

MLP series

Type:	**MLP1608**	**1608[0603 inch]***
	MLP2012	**2012[0805 inch]**
	MLP2016	**2016[0806 inch]**
	MLP2520	**2520[1008 inch]**

*** Dimensions Code JIS[EIA]**

Issue date: February 2012

- All specifications are subject to change without notice.
- 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.

TDK

Inductors for Power Circuits
Multilayer/STD • Magnetic Shielded

Conformity to RoHS Directive

MLP Series MLP1608

A choke coil which has high power efficiency while having a small size of 1.6 mm×0.8 mm, through optimization of the internal structure and adoption of a low-loss ferrite material.
Accommodates high-speed switching frequencies by lowering loss of the material.
Most suitable for application as choke coils for mobile devices or modules, which are becoming smaller in size, due to the above reasons.

FEATURES

- Most suitable for power lines with low output.
- Optimized ferrite materials enable the reduction of losses.
- Magnetically shielded configuration allowing for high-density mounting.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

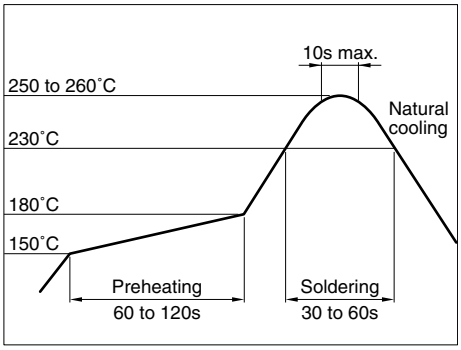
Cellular phones, power supply modules, etc.

SPECIFICATIONS

Operating temperature range	–40 to +125°C [Including self-temperature rise]
Storage temperature range	–40 to +85°C(After mount)

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLP	1608	V	1R0	B	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

1608	1.6×0.8mm

(3) Type name

V	Low core loss

(4) Inductance

1R0	1.0μH

(5) Thickness

B	t=0.95mm max.
D	t=0.75mm max.

(6) Packaging style

T	Taping [reel]

(7)TDK internal code

PACKAGING STYLE AND QUANTITIES

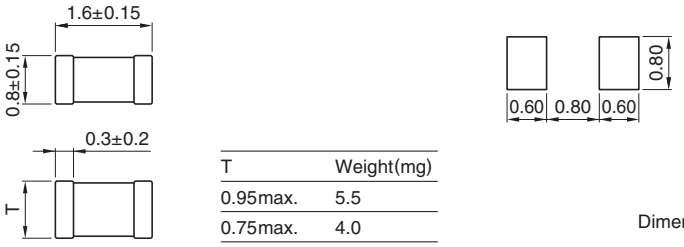
Packaging style	Quantity
Taping	4000 pieces/reel

HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- The inductance value may change due to magnetic saturation if the current exceeds the rated maximum.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

- 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.
- Please contact our Sales office when your application is considered the following:
  The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



T	Weight(mg)
0.95max.	5.5
0.75max.	4.0

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Classification	Part No.	Inductance (µH)	Inductance tolerance	Test frequency (MHz)	DC resistance (Ω)±30%	Rated current* (mA)max.	Thickness (mm)max.
Low core loss	MLP1608VR47D	0.47	±20%	2	0.22	800	0.75
	MLP1608V1R0D	1.0	±20%	2	0.30	700	0.75
	MLP1608VR47B	0.47	±20%	2	0.20	800	0.95
	MLP1608V1R0B	1.0	±20%	2	0.30	700	0.95
	MLP1608V2R2B	2.2	±20%	2	0.36	600	0.95

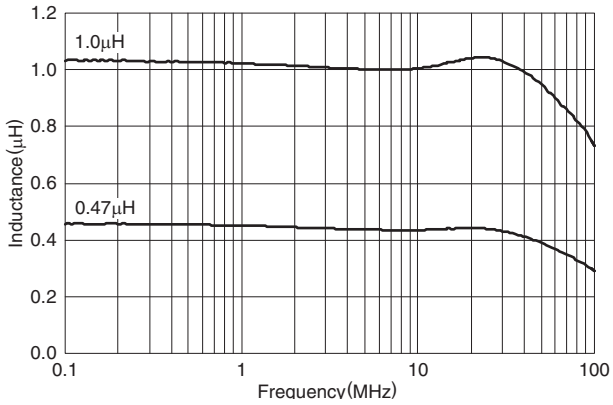
* Rated current: Current when temperature has risen to 40°C max.

TYPICAL ELECTRICAL CHARACTERISTICS

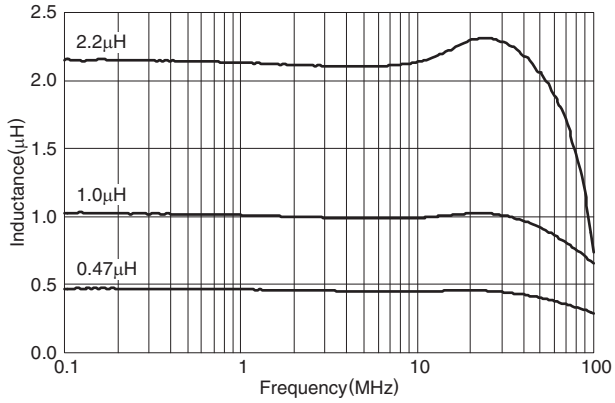
INDUCTANCE vs. FREQUENCY CHARACTERISTICS

MLP1608V SERIES

T=0.75mm max.

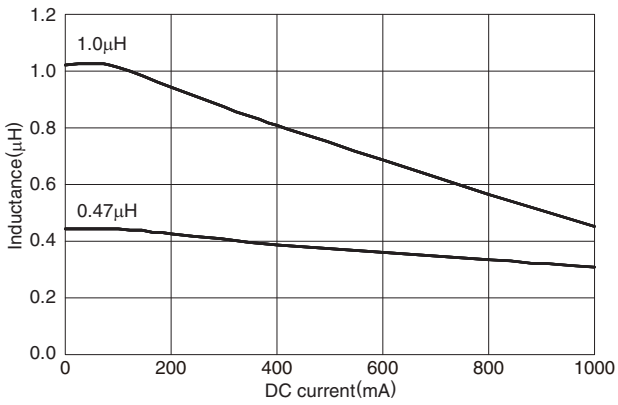


T=0.95mm max.

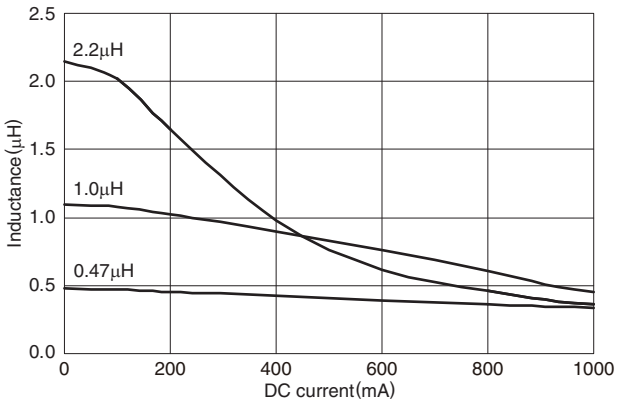


INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

T=0.75mm max.

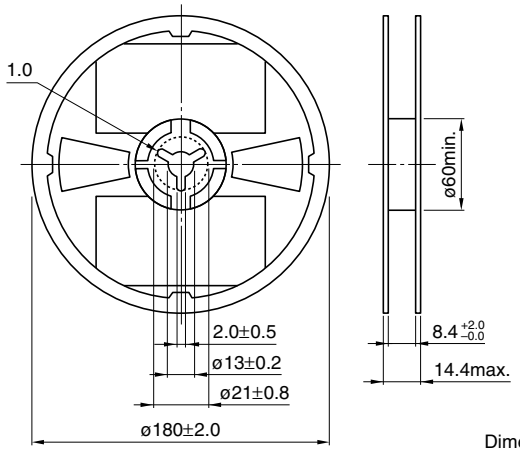


T=0.95mm max.



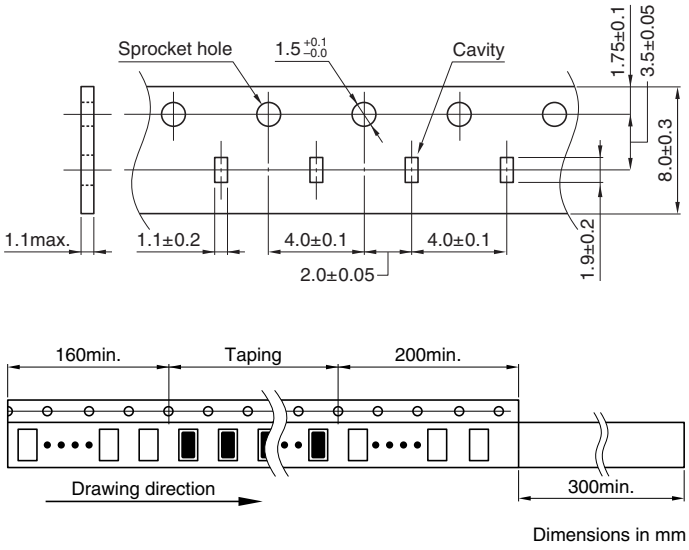
PACKAGING STYLES

REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

Inductors for Power Circuits
Multilayer/STD • Magnetic Shielded

Conformity to RoHS Directive

MLP Series MLP2012

With its internal structure optimized, the MLP2012 type has achieved DC superimposition characteristics that are comparable to those of the existing MLP2520 type.
In addition, because low-loss materials are used, the core loss of the coil can be minimized within a wide frequency range.
MLP2012's choke coils are therefore best suited to several MHz-drive switching power supplies, the use of which is especially prominent in mobile devices.

FEATURES

- MLP2012 has DC super imposition characteristics that are comparable to that of the existing MLP2520 type.
- Optimized ferrite materials enable the reduction of losses.
- Magnetically shielded configuration allowing for high-density mounting.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

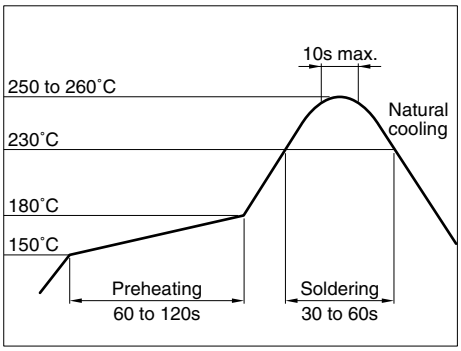
Cellular phones, DSCs, DVCs, HDDs, etc.

SPECIFICATIONS

Operating temperature range	–40 to +125°C [Including self-temperature rise]
Storage temperature range	–40 to +85°C(After mount)

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLP	2012	S	2R2	M	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

2012	2.0×1.25mm

(3) Type name

S	STD
V	Low core loss

(4) Inductance

2R2	2.2μH

(5) Thickness

T	t=0.55mm max.
M	t=1.0mm max.

(6) Packaging style

T	Taping [reel]

(7)TDK internal code

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	4000 pieces/reel

HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
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- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
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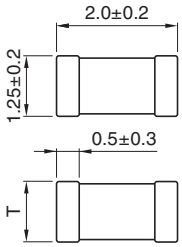
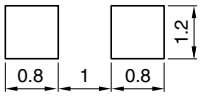
SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



T	Weight(mg)
0.55max.	7
1.0max.	10



Dimensions in mm

ELECTRICAL CHARACTERISTICS

Classification	Part No.	Inductance (µH)	Inductance tolerance	Test frequency (MHz)	DC resistance (Ω)±30%	Rated current* (mA)max.	Thickness (mm)max.
STD	MLP2012SR47MT	0.47	±20%	2	0.09	1200	1
	MLP2012S1R0MT	1.0	±20%	2	0.16	1000	1
	MLP2012S1R5MT	1.5	±20%	2	0.16	1000	1
	MLP2012S2R2MT	2.2	±20%	2	0.23	800	1
	MLP2012S3R3MT	3.3	±20%	2	0.19	900	1
	MLP2012S4R7MT	4.7	±20%	2	0.26	700	1
Low core loss	MLP2012VR47MT	0.47	±20%	2	0.11	1100	1
	MLP2012V1R0MT	1.0	±20%	2	0.20	900	1
Low profile	MLP2012SR47TT	0.47	±20%	6	0.13	1200	0.55
	MLP2012SR82TT	0.82	±20%	6	0.13	1200	0.55
	MLP2012S1R0TT	1.0	±20%	2	0.23	800	0.55
	MLP2012S1R5TT	1.5	±20%	2	0.27	700	0.55
	MLP2012S2R2TT	2.2	±20%	2	0.33	600	0.55

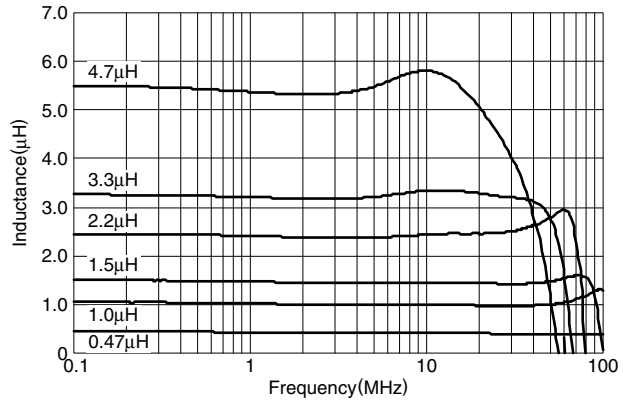
* Rated current: Current when temperature has risen to 40°C max.

TYPICAL ELECTRICAL CHARACTERISTICS

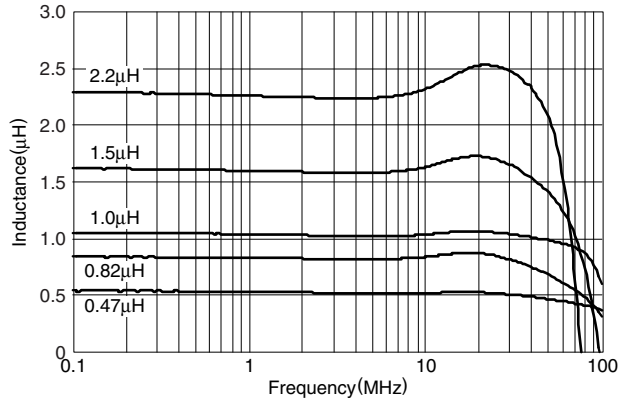
INDUCTANCE vs. FREQUENCY CHARACTERISTICS

MLP2012S SERIES

T=1.0mm max.

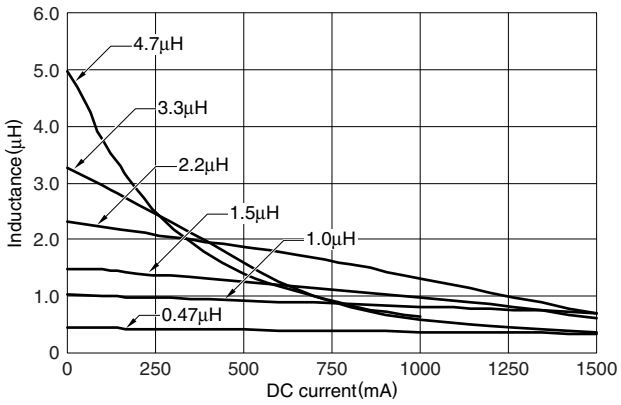


T=0.55mm max.

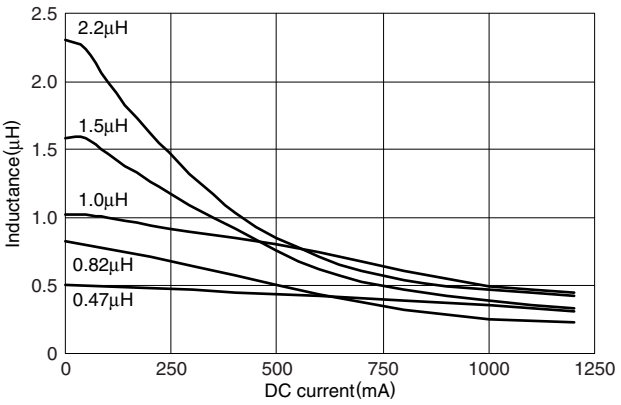


INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

T=1.0mm max.



T=0.55mm max.

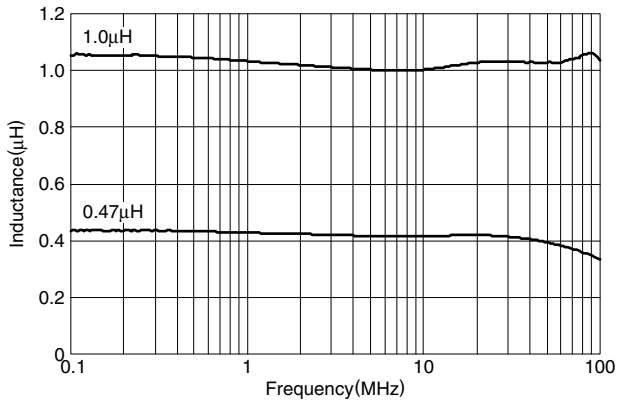


TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

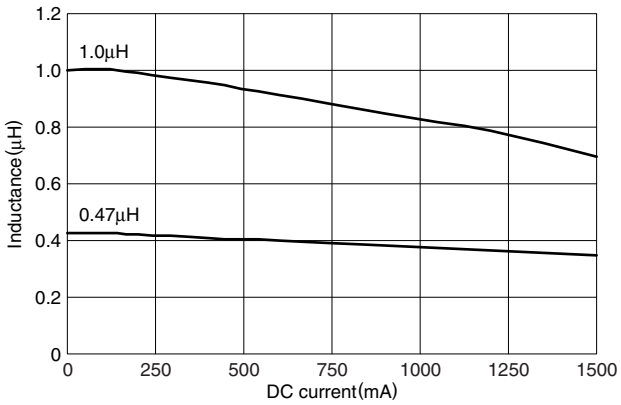
MLP2012V SERIES

T=1.0mm max.



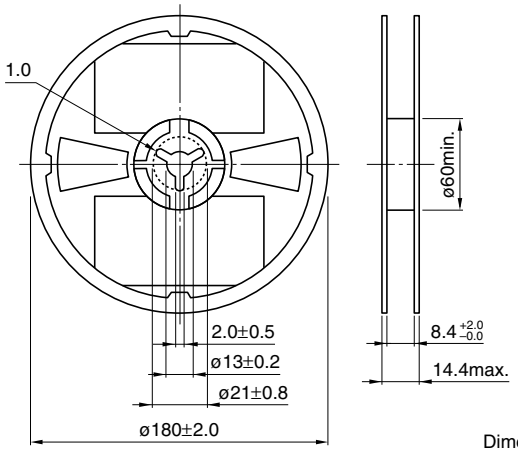
INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

T=1.0mm max.



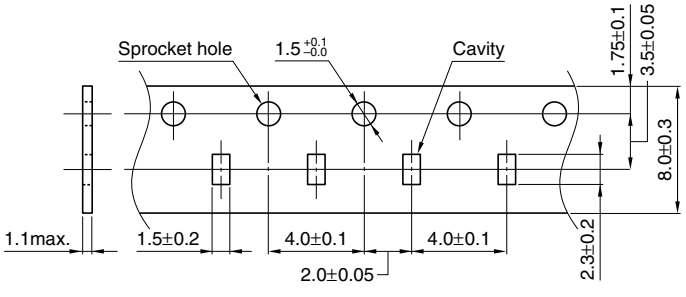
PACKAGING STYLES

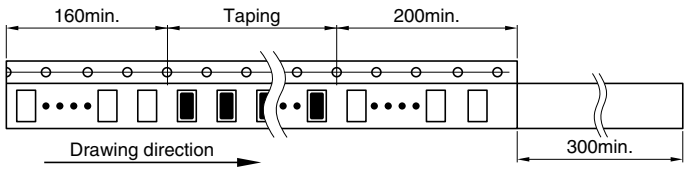
REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS





Dimensions in mm

Inductors for Power Circuits
Multilayer/STD • Magnetic Shielded

Conformity to RoHS Directive

MLP Series MLP2016

With its internal structure optimized, the MLP2016 type has achieved DC superimposition characteristics that are comparable to those of the existing MLP2520 type.
In addition, because low-loss materials are used, the core loss of the coil can be minimized within a wide frequency range.
MLP2016's choke coils are therefore best suited to several MHz-drive switching power supplies, the use of which is especially prominent in mobile devices.

FEATURES

- MLP2016 has DC super imposition characteristics that are comparable to that of the existing MLP2520 type.
- Optimized ferrite materials enable the reduction of losses.
- Magnetically shielded configuration allowing for high-density mounting.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

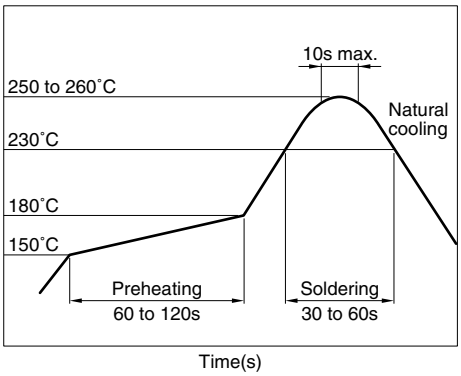
Cellular phones, DSCs, DVCs, HDDs, etc.

SPECIFICATIONS

Operating temperature range	–40 to +125°C [Including self-temperature rise]
Storage temperature range	–40 to +85°C(After mount)

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLP	2016	S	2R2	M	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

2016	2.0×1.6mm

(3) Type name

S	STD

(4) Inductance

2R2	2.2μH

(5) Thickness

M	t=1.0mm max.

(6) Packaging style

T	Taping [reel]

(7) TDK internal code

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	3000 pieces/reel

HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- The inductance value may change due to magnetic saturation if the current exceeds the rated maximum.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
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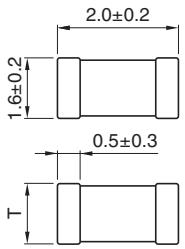
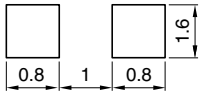
SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN





T	Weight(mg)
1.0max.	12

Dimensions in mm

ELECTRICAL CHARACTERISTICS

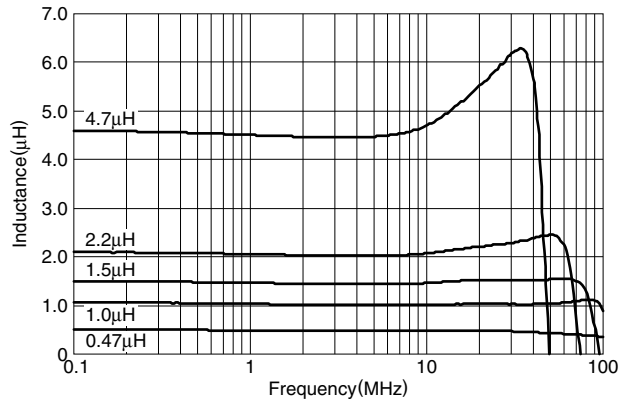
Classification	Part No.	Inductance (µH)	Inductance tolerance	Test frequency (MHz)	DC resistance (Ω)±30%	Rated current* (mA)max.	Thickness (mm)max.
STD	MLP2016SR47MT	0.47	±20%	2	0.05	1600	1
	MLP2016S1R0MT	1.0	±20%	2	0.09	1400	1
	MLP2016S1R5MT	1.5	±20%	2	0.09	1200	1
	MLP2016S2R2MT	2.2	±20%	2	0.11	1200	1
	MLP2016S4R7MT	4.7	±20%	2	0.27	800	1

* Rated current: Current when temperature has risen to 40°C max.

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

T=1.0mm max.



INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

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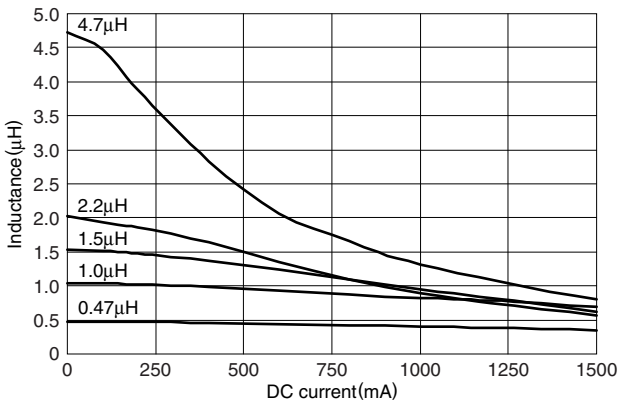
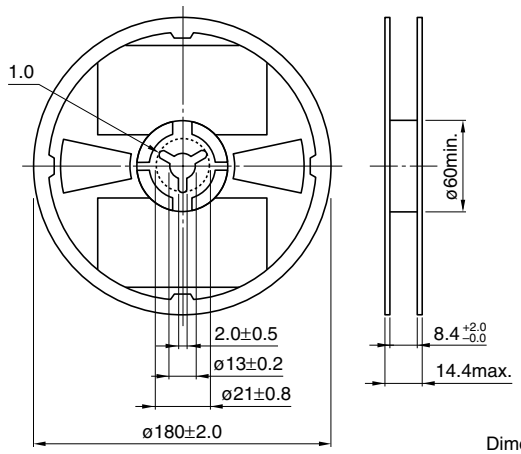


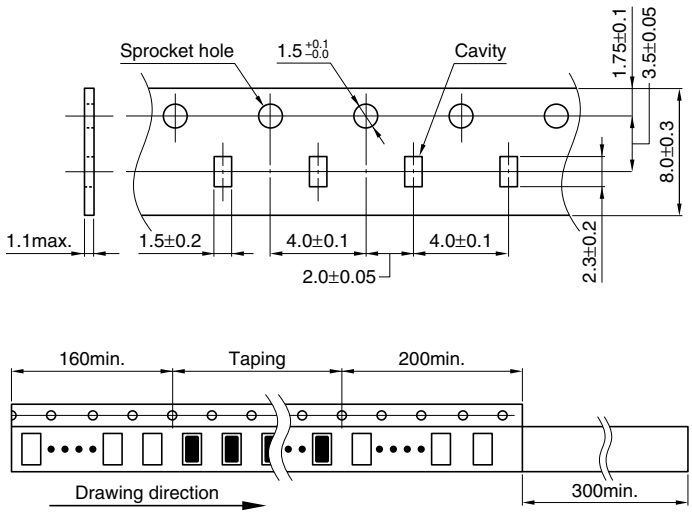
PACKAGING STYLES

REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

Inductors for Power Circuits
Multilayer/STD • Magnetic Shielded

Conformity to RoHS Directive

MLP Series MLP2520

In response to market demands for smaller mobile devices with a longer lasting life, mounted switching supply circuits with even higher frequencies are now being developed.
With optimized materials the MLP2520 type contributes to the improved efficiency of power sources, and reduces the losses caused by ferrite, even if the products are used for supply circuits with high drive frequencies.

FEATURES

- Optimized ferrite materials enable the reduction of losses.
- Compared to the existing MLP2520 type, DC superposition characteristics have been substantially improved.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

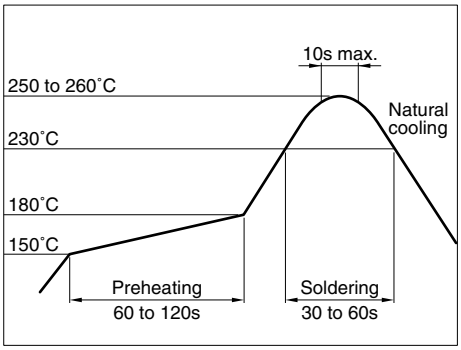
Cellular phones, DSCs, DVCs, HDs, etc.

SPECIFICATIONS

Operating temperature range	–40 to +125°C [Including self-temperature rise]
Storage temperature range	–40 to +85°C(After mount)

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLP	2520	S	1R0	M	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

2520	2.5×2.0mm

(3) Type name

S	STD
V	Low core loss (Emphasized direct current superimposition characteristics)
H	Low core loss (Emphasized direct current resistance)

(4) Inductance

1R0	1.0μH
1R5	1.5μH
2R2	2.2μH
3R3	3.3μH
4R7	4.7μH
100	10μH

• S1R0S: 1.2μH, S2R2S: 2.5μH

(5) Thickness

M	t=1.0mm max.
S	t=1.2mm max.

(6) Packaging style

T	Taping [reel]

(7)TDK internal code

PACKAGING STYLE AND QUANTITIES

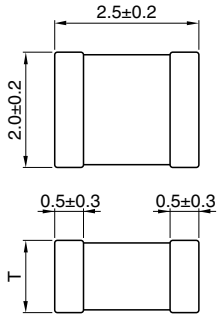
Packaging style	Thickness T(mm)	Quantity
Taping	1.0mm max.	3000 pieces/reel
	1.2mm max.	3000 pieces/reel

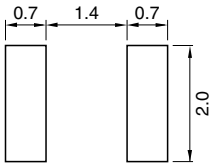
HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- The inductance value may change due to magnetic saturation if the current exceeds the rated maximum.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

- 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.
- Please contact our Sales office when your application is considered the following:
  The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

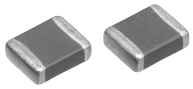
SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN





Dimensions in mm

T(Thickness)	Weight(mg)
1.0max.	15
1.2max.	25



ELECTRICAL CHARACTERISTICS

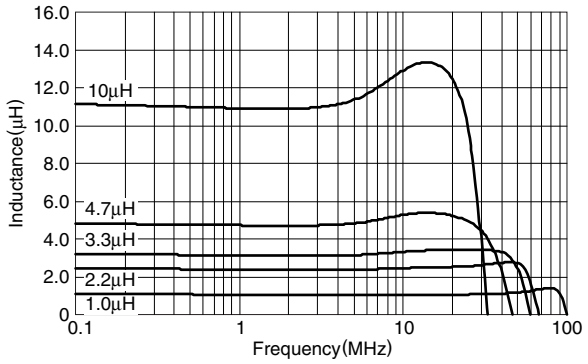
Type	Part No.	Inductance (µH)	Inductance tolerance	Test frequency (MHz)	DC resistance (Ω)±30%	Rated current* (mA)	Thickness (mm)max.
STD	MLP2520S1R0M	1.0	±20%	2	0.085	1500	1.0
	MLP2520S1R5M	1.5	±20%	2	0.09	1200	1.0
	MLP2520S2R2M	2.2	±20%	2	0.09	1200	1.0
	MLP2520S3R3M	3.3	±20%	2	0.13	1000	1.0
	MLP2520S4R7M	4.7	±20%	2	0.13	1000	1.0
	MLP2520S100M	10.0	±20%	2	0.28	700	1.0
Low core loss (Emphasized direct current resistance)	MLP2520H2R2M	2.2	±20%	2	0.09	1300	1.0
	MLP2520H4R7M	4.7	±20%	2	0.13	1000	1.0
STD	MLP2520S1R0S	1.2	±20%	2	0.08	1500	1.2
	MLP2520S2R2S	2.5	±20%	2	0.11	1200	1.2
	MLP2520S3R3S	3.3	±20%	2	0.11	1000	1.2
	MLP2520S4R7S	4.7	±20%	2	0.11	1000	1.2
	MLP2520S100S	10.0	±20%	2	0.28	700	1.2
Low core loss (Emphasized direct current superimposition characteristics)	MLP2520V4R7S	4.7	±20%	2	0.22	800	1.2

* Rated current: Current when temperature has risen to 40°C max.

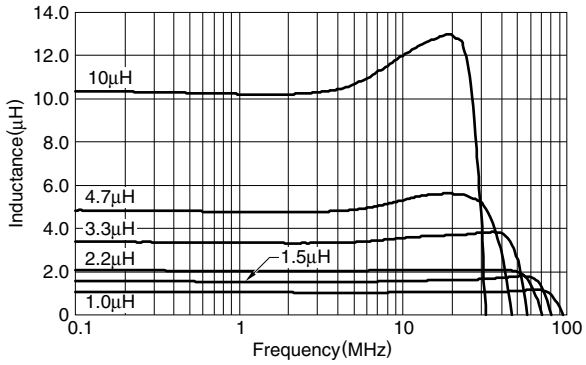
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

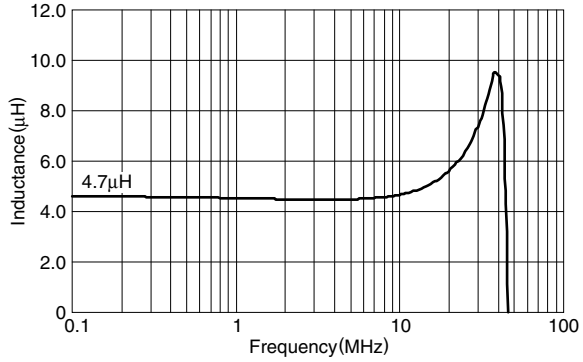
T=1.2mm max.
MLP2520S-S Series



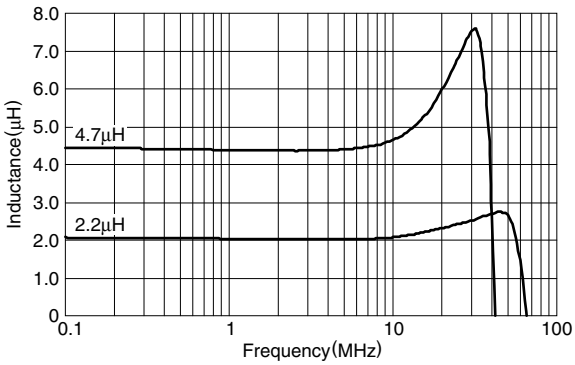
T=1.0mm max.
MLP2520S-M Series



T=1.2mm max.
MLP2520V-S Series



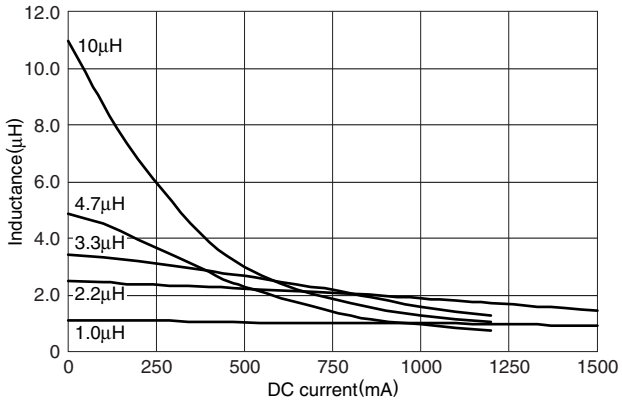
T=1.0mm max.
MLP2520H-M Series



TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

T=1.2mm max.
MLP2520S-S Series



T=1.0mm max.
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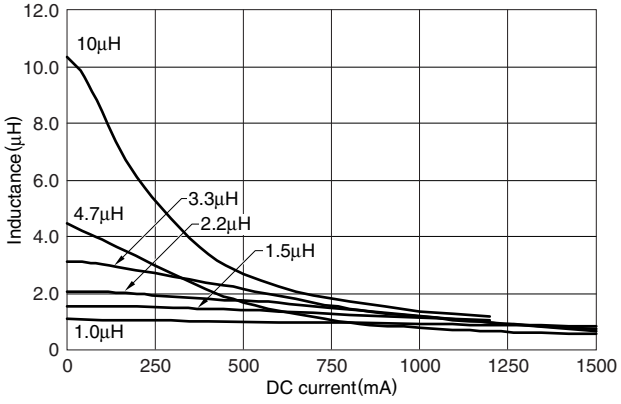
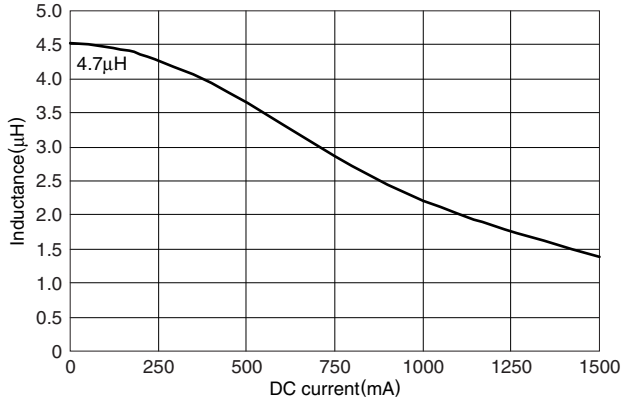
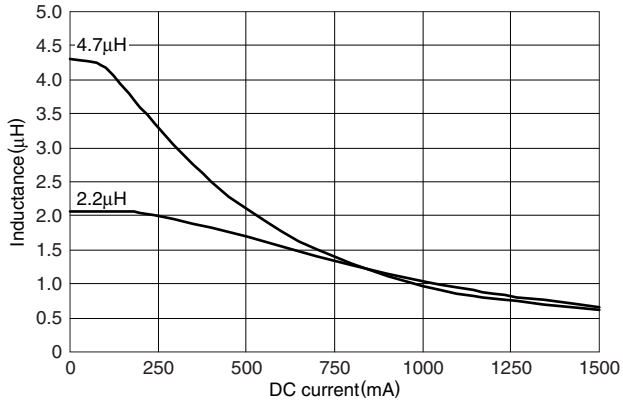


T=1.2mm max.
MLP2520V-S Series

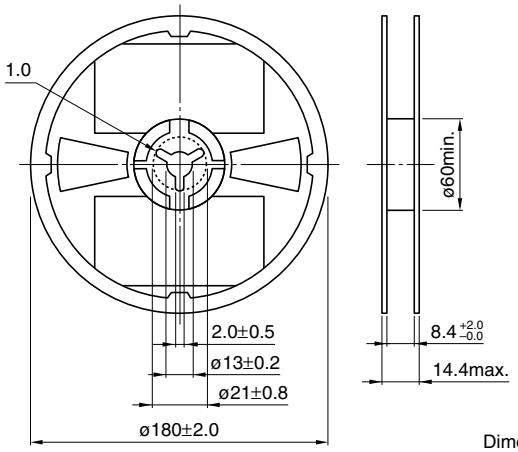


T=1.0mm max.
MLP2520H-M Series



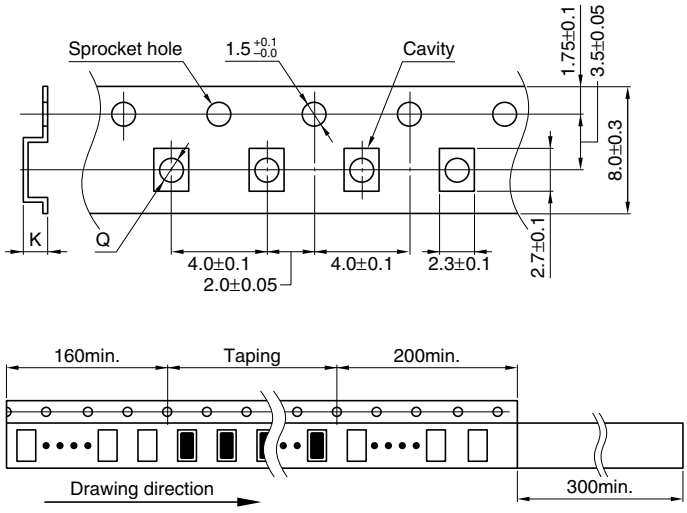
PACKAGING STYLES

REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

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Authorized Distributor

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