TDK

SMD Inductors(Coils)
For Power Line(Multilayer, Magnetic Shielded)

Conformity to RoHS Directive

MLZ Series MLZ2012

The MLZ Series is a line of multilayer choke coils for decoupling power circuits.
The MLZ2012-W Series, a line of the MLZ Series, has increased its DC superimposition characteristics by up to 250%* compared with existing products through the use of TDK's proprietary ferrite material technology.
Also available is the MLZ2012-L Series. This series has lowered its resistance by up to 50% compared with existing products through the adoption of a new ferrite material and dense electrodes. This series includes the E6 Series, which handles 1.0 to 15µH, hence it is extremely useful in the power-supply design of low-voltage circuits.

FEATURES

- The W Series (IDC UP type) is a line of products that have achieved the industry's best* DC superimposition characteristics.
  * According to research conducted in August 2010.
- The L Series (Low-resistance type) has lowered its resistance by up to 50% compared with existing products.
- The D Series (High frequency type) is a line of decoupling coil products for high frequencies. It can handle higher noise frequencies.
- With its wider inductance range (0.1 to 46µH) and the addition of the E6 Series, this series can satisfy a wide variety of requirements.

APPLICATIONS

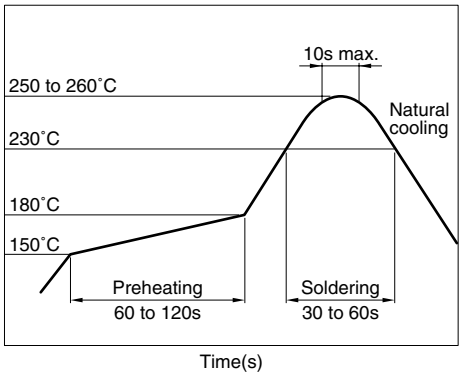
Modules such as digital cellular phone and camera module, Netbooks, note PCs, DSCs, DVCs, video games, portable memory audio devices, navigation systems, PNDs, TVs, W-LANs, solid state drives

SPECIFICATIONS

Operating temperature range	–55 to +125°C [including its own temperature rise]
Storage temperature range	–55 to +125°C

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLZ	2012	A	1R0	W	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions L×W

2012	2.0×1.25mm

(3) Management symbol

(4) Inductance value

R10	0.1µH
1R0	1.0 µH
100	10.0 µH

(5) Types of characteristics

D	High frequency type
W	IDC-UP type
L	Low-resistance type

(6) Packaging style

T	Taping [reel]

PACKAGING STYLE AND QUANTITIES

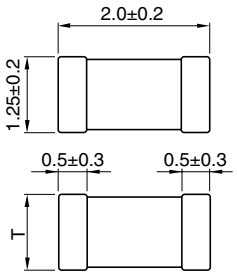
Packaging style	Thickness T(mm)	Quantity
Taping	0.85	4000 pieces/reel
	1.25	2000 pieces/reel

HANDLING AND PRECAUTIONS

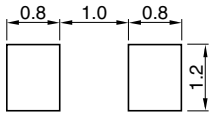
- Before soldering, be sure to preheat components.
  The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board 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 are 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.)

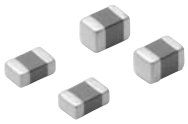
SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



T(Thickness)	Weight(mg)
0.85±0.2	10
1.25±0.2	14



Dimensions in mm



ELECTRICAL CHARACTERISTICS

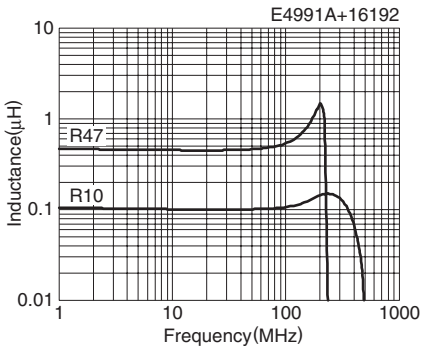
Classification	Part No.	Inductance (µH)	Inductance tolerance	Thickness (mm)	Test frequency L (MHz)	Test current L (mA)	Self-resonant frequency (MHz)typ.	DC resistance (Ω)±30%	Rated current*1 (mA)	Rated current*2 (mA)
High frequency type	MLZ2012DR10DT	0.10	±20%	0.85	25	1.0	500	0.07	1000	1150
	MLZ2012DR22DT	0.22	±20%	0.85	25	1.0	330	0.13	800	900
	MLZ2012DR47DT	0.47	±20%	1.25	25	1.0	230	0.18	550	700
IDC-UP type	MLZ2012A1R0WT	1.00	±20%	0.85	10	1.0	160	0.10	280	900
	MLZ2012A1R5WT	1.50	±20%	0.85	10	1.0	140	0.13	250	750
	MLZ2012A2R2WT	2.20	±20%	0.85	10	1.0	120	0.15	210	650
	MLZ2012A3R3WT	3.30	±20%	0.85	10	1.0	90	0.34	200	450
	MLZ2012M4R7WT	4.70	±20%	0.85	2	0.1	70	0.30	180	500
	MLZ2012M6R8WT	6.80	±20%	1.25	2	0.1	60	0.40	160	400
	MLZ2012M100WT	10.0	±20%	1.25	2	0.1	50	0.47	150	350
	MLZ2012M150WT	15.0	±20%	1.25	2	0.1	40	0.95	120	250
	MLZ2012M220WT	22.0	±20%	1.25	2	0.1	35	2.00	60	220
	MLZ2012M330WT	33.0	±20%	1.25	2	0.1	28	2.60	55	190
	MLZ2012M470WT	47.0	±20%	1.25	2	0.1	20	3.70	50	170
Low-resistance type	MLZ2012N1R0LT	1.00	±20%	0.85	2	0.1	160	0.06	220	1150
	MLZ2012N1R5LT	1.50	±20%	0.85	2	0.1	140	0.10	190	900
	MLZ2012N2R2LT	2.20	±20%	0.85	2	0.1	120	0.12	170	800
	MLZ2012N3R3LT	3.30	±20%	0.85	2	0.1	90	0.15	130	750
	MLZ2012N4R7LT	4.70	±20%	0.85	2	0.1	70	0.18	130	600
	MLZ2012N6R8LT	6.80	±20%	0.85	2	0.1	60	0.25	110	550
	MLZ2012N100LT	10.0	±20%	1.25	2	0.1	50	0.30	110	500
	MLZ2012N150LT	15.0	±20%	1.25	2	0.1	40	0.47	90	350

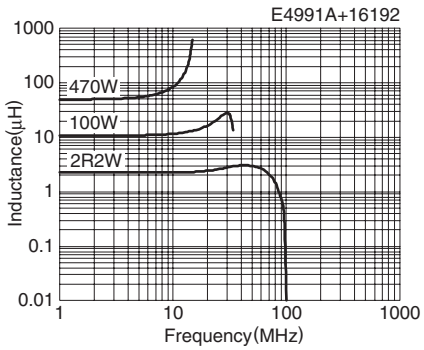
*1 Current assumed when inductance has decreased by 50%.
*2 Current assumed when temperature has risen to 20°C (reference value). The maximum operating temperature at this time is 105°C.

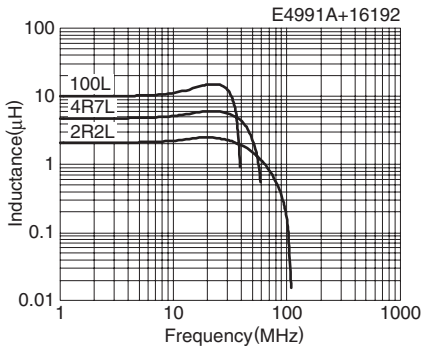
- Test equipment
  Inductance: Ag4294A-16034G

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

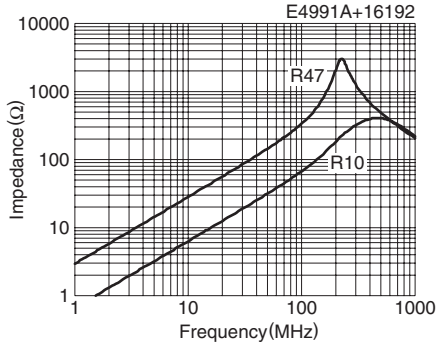


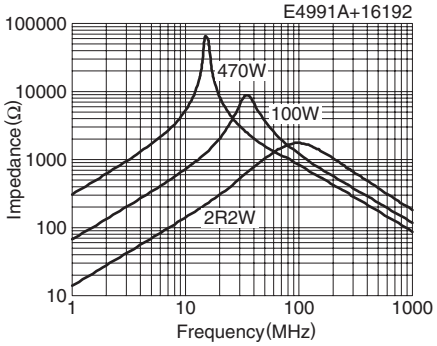


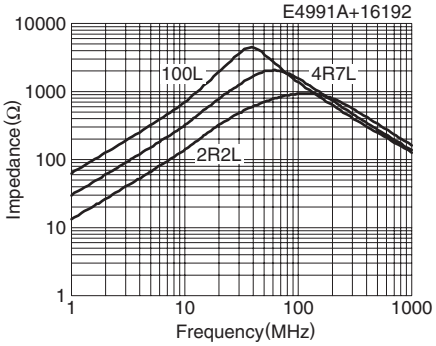


TYPICAL ELECTRICAL CHARACTERISTICS

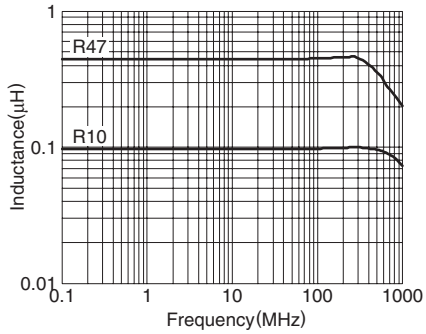
IMPEDANCE vs. FREQUENCY CHARACTERISTICS

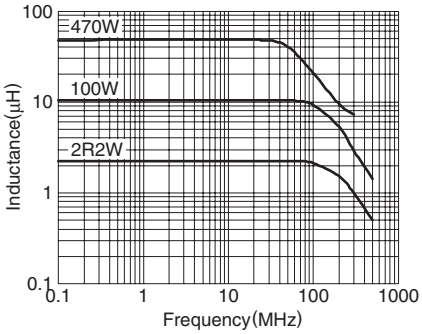


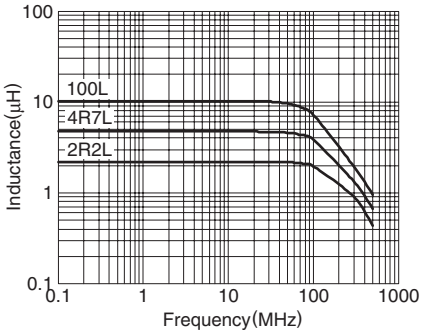




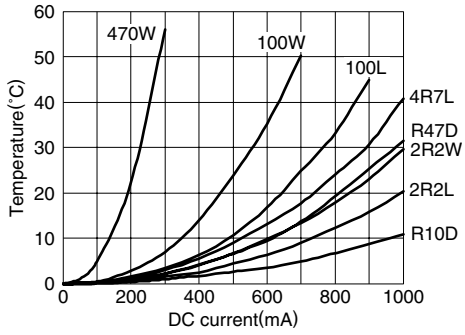
INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS





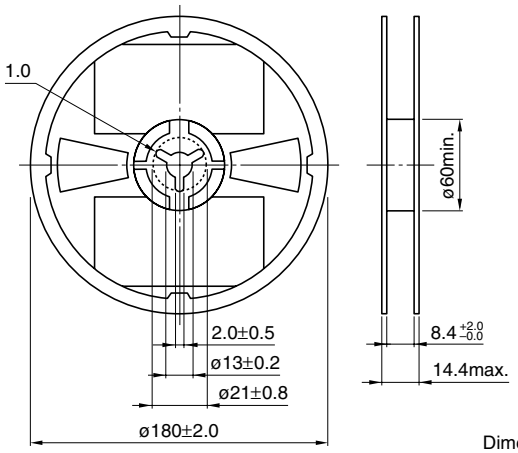


TEMPERATURE CHARACTERISTICS



PACKAGING STYLES

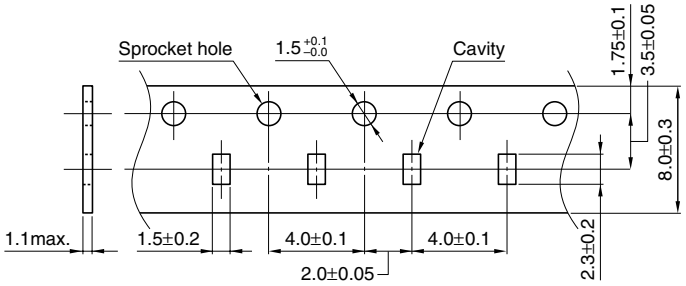
REEL DIMENSIONS



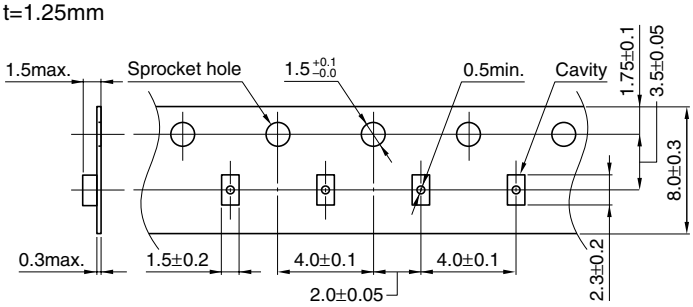
Dimensions in mm

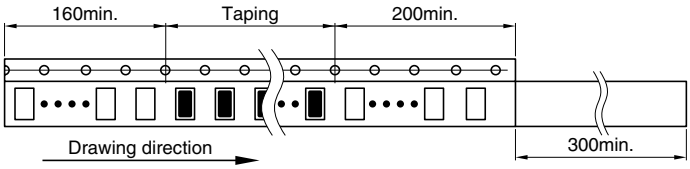
TAPE DIMENSIONS

t=0.85mm



t=1.25mm





Dimensions in mm