

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

Conformity to RoHS Directive

## MLZ Series MLZ1608

The MLZ Series is a line of multilayer choke coils for decoupling power circuits.

The MLZ1608-W Series, a line of the MLZ Series, has increased its DC superimposition characteristics by up to 225%\* compared with existing products through the use of TDK's proprietary ferrite material technology.

Also available is the MLZ1608-L Series. This series has lowered its resistance by up to 40% compared with existing products through the adoption of a new ferrite material and dense electrodes. This series includes the E3 Series, which handles 1.0 to 10 $\mu$ H, 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 40% 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.

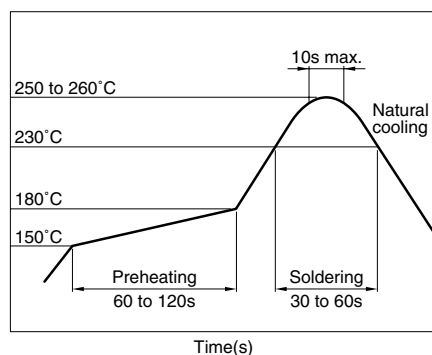
### APPLICATIONS

Modules such as digital cellular phone and camera module, Networks, 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



- 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.)

All specifications are subject to change without notice.

### PRODUCT IDENTIFICATION

MLZ	1608	A	1R0	W	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions L×W

1608	1.6×0.8mm
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(3) Management symbol

(4) Inductance value

R10	0.1 $\mu$ H
1R0	1.0 $\mu$ H
100	10.0 $\mu$ H

(5) Types of characteristics

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

(6) Packaging style

T	Taping [reel]
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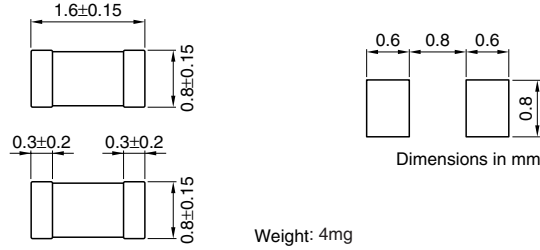
### PACKAGING STYLE AND QUANTITIES

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.

**SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN**



**ELECTRICAL CHARACTERISTICS**

Classification	Part No.	Inductance (μH)	Inductance tolerance	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	MLZ1608DR10DT	0.10	±20%	25	1.0	600	0.14	700	850
	MLZ1608DR22DT	0.22	±20%	25	1.0	400	0.27	550	600
	MLZ1608DR47DT	0.47	±20%	25	1.0	260	0.42	400	500
IDC-UP type	MLZ1608A1R0WT	1.00	±20%	10	1.0	170	0.15	190	600
	MLZ1608A2R2WT	2.20	±20%	10	1.0	120	0.25	130	500
	MLZ1608M4R7WT	4.70	±20%	2	0.1	80	0.50	120	350
	MLZ1608M100WT	10.0	±20%	2	0.1	50	1.05	90	250
Low-resistance type	MLZ1608N1R0LT	1.00	±20%	2	0.1	170	0.11	140	700
	MLZ1608N2R2LT	2.20	±20%	2	0.1	120	0.18	110	500
	MLZ1608N4R7LT	4.70	±20%	2	0.1	80	0.32	80	400
	MLZ1608N100LT	10.0	±20%	2	0.1	50	0.60	60	300

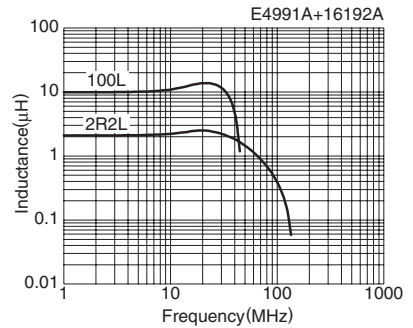
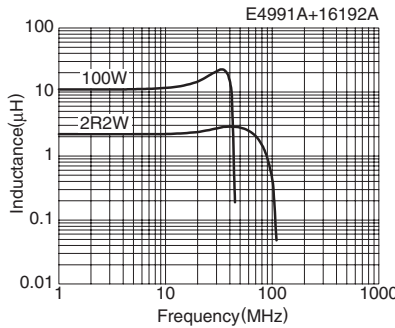
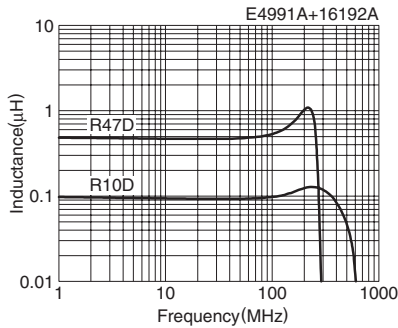
\*1 Current assumed when inductance has decreased by 50%.

\*2 Current assumed when temperature has risen to 20°C (reference value). The maximum operating temperature at this time is 105°C.

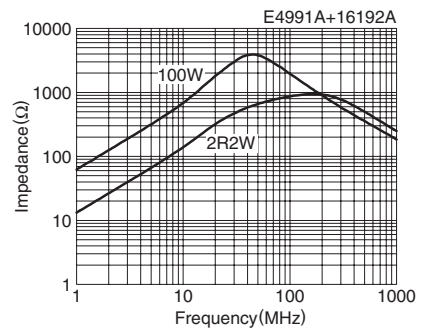
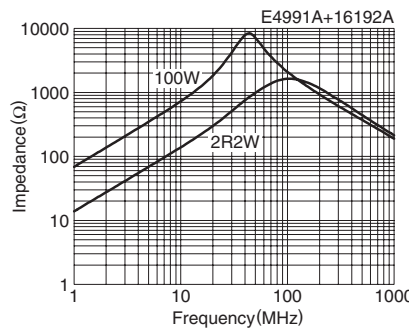
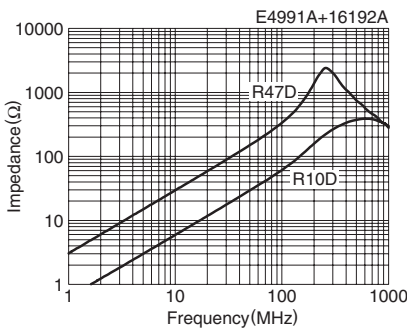
- Test equipment  
Inductance: Ag-4294A+16034G

**TYPICAL ELECTRICAL CHARACTERISTICS**

**INDUCTANCE vs. FREQUENCY CHARACTERISTICS**



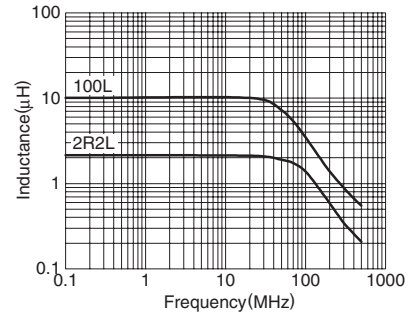
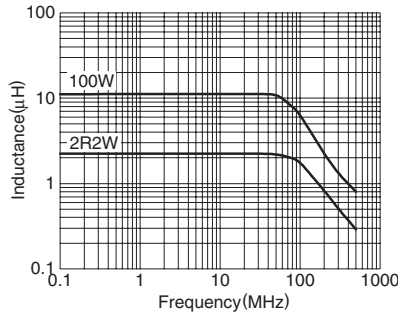
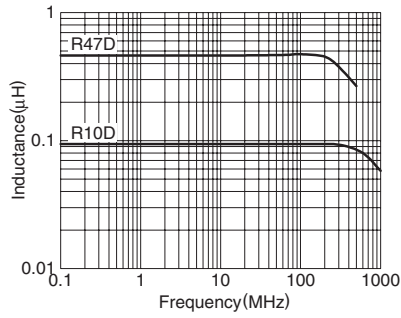
**IMPEDANCE vs. FREQUENCY CHARACTERISTICS**



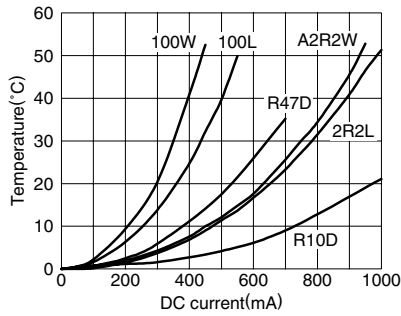
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### TYPICAL ELECTRICAL CHARACTERISTICS

#### INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS

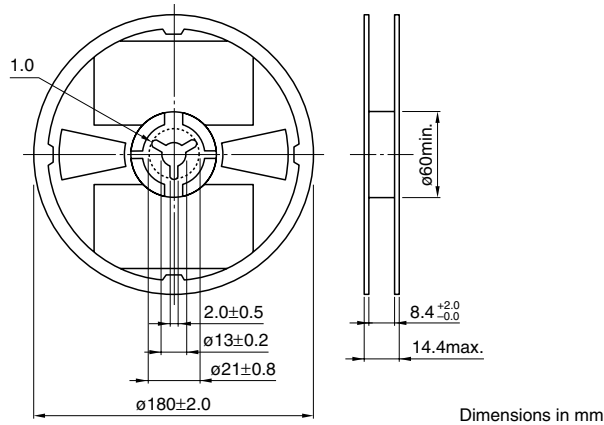


#### TEMPERATURE CHARACTERISTICS

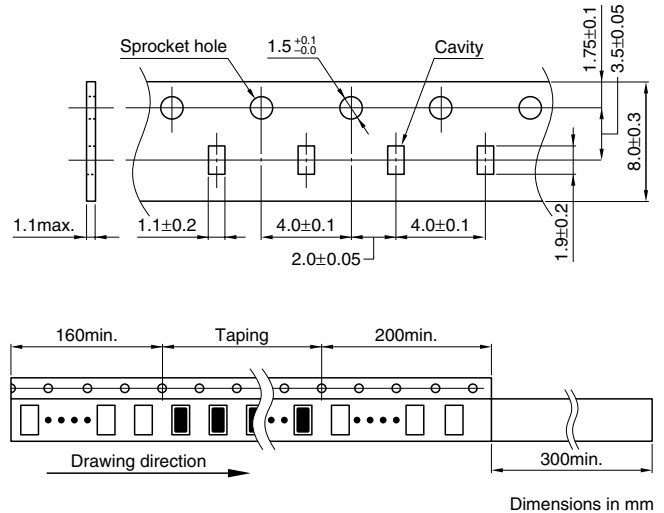


#### PACKAGING STYLES

##### REEL DIMENSIONS



##### TAPE DIMENSIONS



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