

# Multilayer Ceramic Inductor

## *Super High-Q type*

### MHQ0603W Series

0.1 to 39nH

0.1 to 4.3nH 0.1step and  
4.7 to 39nH all E24 series

[ **Tight tolerance** ]



**MHQ0603W**  
**(0201)**

TDK Inductor web site : <http://product.tdk.com/inductor/ind/en/>

TDK Virtual Component Library : <http://www.tdk.co.jp/etvcl/index.htm>

**TDK CORPORATION**

Made in Japan



Please contact our Sales office when your application are considered the following:

1) The device's failure or malfunction may directly endanger human life  
(e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)  
製品の故障や誤動作が直接人命に係わるような機器 (自動車・航空機・医療機器・原子力  
機器など)に本製品の使用を検討される場合、弊社営業へご連絡ください。

Please note that solderability may degrade in case of long-term storage.

長期保管した場合、はんだ濡れ性が劣化する可能性がありますので、ご注意願います。

## Multilayer RF Inductor

----- Outline -----

**NEW**

### Features

By make full use of the technology of advanced materials and structures design, we achieve corresponding high-Q value to wire wound inductor.

MHQ0603W realized the highest Q characteristic in Multi-layer type.

In addition, it is the product which did about 30% Q up than High-Q/MLG0603P/W type. \*\*\*Reference : It is about 50% Q up than MLG0603S type\*\*\*

Also flexible inductance line-up 0.1nH steps & E24 is available, it's helpful to engineer's circuit design.

### Specification

- Inductance range: [New] 0.1nH to 4.3nH (0.1nH step)  
& 4.7 to 39nH (all E24 series)

- Inductance, Q value measurement frequency

Inductance : @ 100MHz

**\*Residual inductance of short bar = 0.00nH**

Q : @100MHz

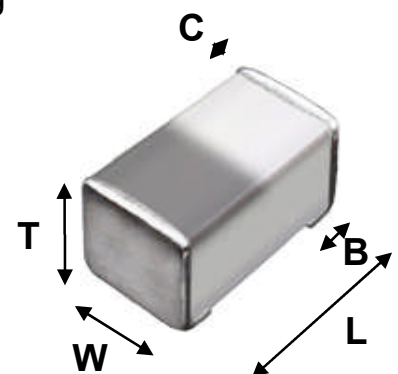
- **Tolerance: +/-0.1nH(B), & +/-3%(H)**

(In the future, we plan to narrow tolerance +/-0.1nH, & +/-2%, +/-3%)

-Operating & storage temperature range: -55 to +125 deg

-Shape: L:0.65\*W:0.35\*T:0.35mm

Unit: mm	
L	0.65+/-0.05
W	0.35+/-0.05
T	0.35+/-0.05
B	0.15+/-0.05
C	0.09+/-0.04



### Environment

- Lead free. Correspond to Lead free soldering

- RoHS Compliance

# Multilayer RF Inductor

## ----- ELECTRICAL CHARACTERISTICS -----

**NEW**

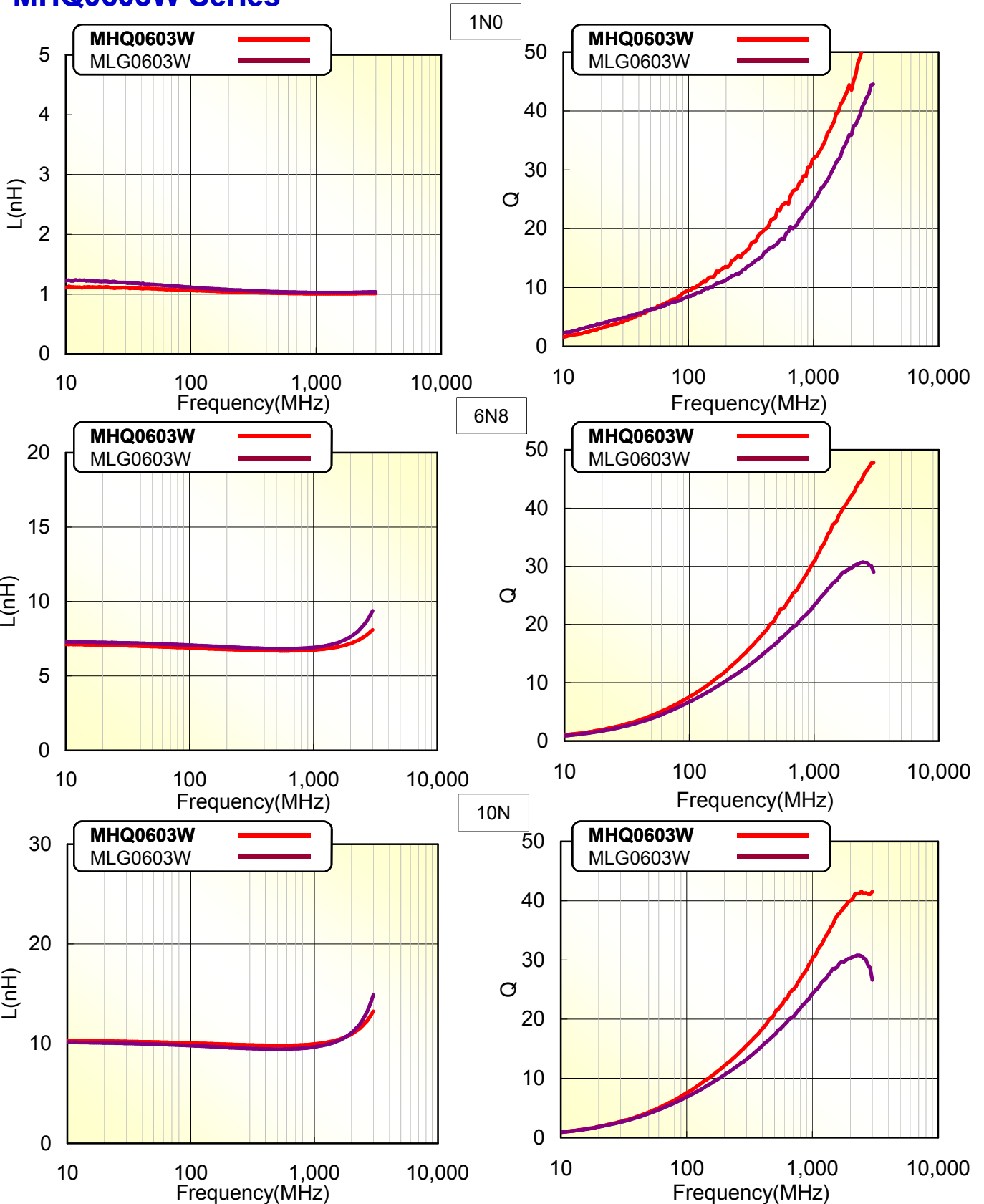
**MHQ0603W series [0.1 to 4.3nH 0.1step+4.7 to 39nH all E24, Tight tolerance]**

0.1 step  
E12 series  
E24 series

	Item	L [nH]	Q min.	RDC [ohm]		SRF [GHz]		IDC [mA]
		at 100MHz	at 100MHz	max.	typ.	min.	typ.	max.
New	MHQ0603W0N1BT000	0.1±0.1nH	-	0.07	0.02	10.0	20.0	1000
New	MHQ0603W0N2BT000	0.2±0.1nH	-	0.07	0.02	10.0	20.0	1000
New	MHQ0603W0N3BT000	0.3±0.1nH	-	0.07	0.02	10.0	20.0	1000
New	MHQ0603W0N4BT000	0.4±0.1nH	-	0.07	0.02	10.0	18.8	1000
New	MHQ0603W0N5BT000	0.5±0.1nH	-	0.07	0.03	10.0	19.3	1000
New	MHQ0603W0N6BT000	0.6±0.1nH	-	0.07	0.03	10.0	19.3	1000
New	MHQ0603W0N7BT000	0.7±0.1nH	-	0.08	0.04	10.0	20.0	1000
New	MHQ0603W0N8BT000	0.8±0.1nH	-	0.10	0.06	10.0	20.0	800
New	MHQ0603W0N9BT000	0.9±0.1nH	-	0.10	0.06	10.0	18.6	800
	MHQ0603W1N0BT000	1.0±0.1nH	7	0.10	0.05	10.0	19.5	800
	MHQ0603W1N1BT000	1.1±0.1nH	7	0.10	0.06	10.0	17.5	800
	MHQ0603W1N2BT000	1.2±0.1nH	7	0.10	0.07	10.0	16.7	800
	MHQ0603W1N3BT000	1.3±0.1nH	7	0.12	0.07	10.0	15.8	700
New	MHQ0603W1N4BT000	1.4±0.1nH	7	0.12	0.08	10.0	16.1	700
	MHQ0603W1N5BT000	1.5±0.1nH	7	0.12	0.08	10.0	13.8	700
	MHQ0603W1N6BT000	1.6±0.1nH	7	0.15	0.08	10.0	12.7	700
New	MHQ0603W1N7BT000	1.7±0.1nH	7	0.15	0.09	10.0	13.2	700
	MHQ0603W1N8BT000	1.8±0.1nH	7	0.15	0.08	10.0	12.5	700
New	MHQ0603W1N9BT000	1.9±0.1nH	7	0.15	0.08	8.0	11.7	700
	MHQ0603W2N0BT000	2.0±0.1nH	6	0.25	0.17	8.0	11.1	500
New	MHQ0603W2N1BT000	2.1±0.1nH	6	0.25	0.16	8.0	11.1	500
	MHQ0603W2N2BT000	2.2±0.1nH	6	0.25	0.16	8.0	10.5	500
New	MHQ0603W2N3BT000	2.3±0.1nH	6	0.25	0.18	8.0	10.6	500
	MHQ0603W2N4BT000	2.4±0.1nH	6	0.30	0.19	8.0	10.8	450
New	MHQ0603W2N5BT000	2.5±0.1nH	6	0.30	0.19	8.0	10.3	450
New	MHQ0603W2N6BT000	2.6±0.1nH	6	0.30	0.19	8.0	10.5	450
	MHQ0603W2N7BT000	2.7±0.1nH	7	0.20	0.13	7.0	9.5	550
New	MHQ0603W2N8BT000	2.8±0.1nH	7	0.20	0.13	7.0	9.5	550
New	MHQ0603W2N9BT000	2.9±0.1nH	7	0.25	0.15	7.0	9.6	500
	MHQ0603W3N0BT000	3.0±0.1nH	7	0.25	0.14	6.5	9.3	500
New	MHQ0603W3N1BT000	3.1±0.1nH	7	0.25	0.17	6.5	9.5	500
New	MHQ0603W3N2BT000	3.2±0.1nH	7	0.25	0.16	6.5	9.1	500
	MHQ0603W3N3BT000	3.3±0.1nH	7	0.25	0.17	6.5	9.1	450
New	MHQ0603W3N4BT000	3.4±0.1nH	7	0.30	0.19	6.5	9.1	450
New	MHQ0603W3N5BT000	3.5±0.1nH	7	0.35	0.23	6.5	9.2	400
	MHQ0603W3N6BT000	3.6±0.1nH	7	0.35	0.26	6.0	8.5	400
New	MHQ0603W3N7BT000	3.7±0.1nH	7	0.35	0.22	6.0	8.3	400
New	MHQ0603W3N8BT000	3.8±0.1nH	7	0.35	0.23	6.0	8.2	400
	MHQ0603W3N9BT000	3.9±0.1nH	7	0.35	0.23	6.0	8.2	400
New	MHQ0603W4N0BT000	4.0±0.1nH	7	0.35	0.24	6.0	8.1	400
New	MHQ0603W4N1BT000	4.1±0.1nH	7	0.40	0.28	6.0	8.0	350
New	MHQ0603W4N2BT000	4.2±0.1nH	7	0.40	0.29	6.0	8.1	350
	MHQ0603W4N3HT000	4.3±3%	7	0.40	0.25	5.5	7.9	350
	MHQ0603W4N7HT000	4.7±3%	7	0.40	0.24	5.5	7.8	350
	MHQ0603W5N1HT000	5.1±3%	6	0.40	0.29	5.0	6.7	350
	MHQ0603W5N6HT000	5.6±3%	7	0.40	0.30	5.0	6.9	350
	MHQ0603W6N2HT000	6.2±3%	6	0.70	0.52	4.0	6.6	300
	MHQ0603W6N8HT000	6.8±3%	6	0.70	0.48	4.0	6.3	300
	MHQ0603W7N5HT000	7.5±3%	7	0.50	0.37	3.8	5.6	250
	MHQ0603W8N2HT000	8.2±3%	6	0.90	0.63	3.8	5.6	250
	MHQ0603W9N1HT000	9.1±3%	6	0.90	0.61	3.5	5.5	250
	MHQ0603W10NHT000	10±3%	6	1.20	0.86	3.5	5.2	240
New	MHQ0603W11NHT000	11±3%	5	1.30	0.89	3.2	4.6	240
	MHQ0603W12NHT000	12±3%	6	1.40	0.77	3.2	4.6	240
New	MHQ0603W13NHT000	13±3%	5	1.50	1.01	3.2	4.5	180
	MHQ0603W15NHT000	15±3%	6	1.50	1.05	2.8	4.2	180
New	MHQ0603W16NHT000	16±3%	6	1.70	1.21	2.5	4.0	180
	MHQ0603W18NHT000	18±3%	6	1.70	1.21	2.4	3.7	180
New	MHQ0603W20NHT000	20±3%	5	2.00	1.38	2.4	3.5	160
	MHQ0603W22NHT000	22±3%	6	2.00	1.40	2.2	3.3	160
New	MHQ0603W24NHT000	24±3%	6	2.20	1.55	2.1	3.1	160
	MHQ0603W27NHT000	27±3%	7	2.20	1.55	2.0	2.9	160
New	MHQ0603W30NHT000	30±3%	7	2.70	1.98	1.9	2.7	160
	MHQ0603W33NHT000	33±3%	7	2.80	2.06	1.8	2.5	160
New	MHQ0603W36NHT000	36±3%	7	2.80	2.08	1.7	2.4	160
	MHQ0603W39NHT000	39±3%	7	3.00	2.24	1.6	2.3	160

----- FREQUENCY CHARACTERISTICS -----

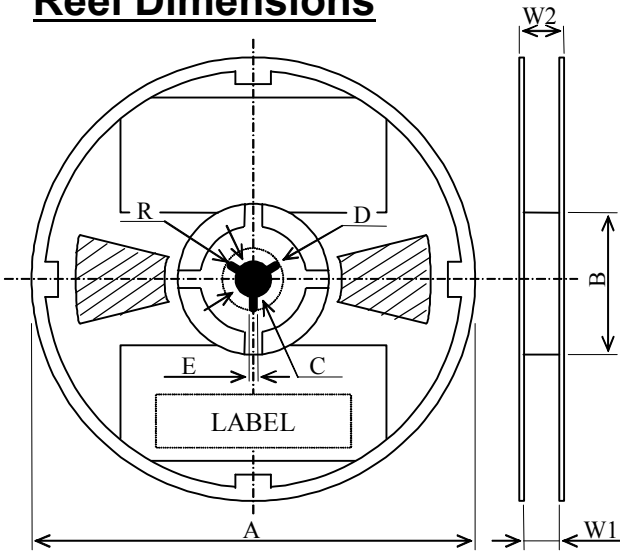
**MHQ0603W Series**



# Multilayer RF Inductor

**NEW**

## Reel Dimensions

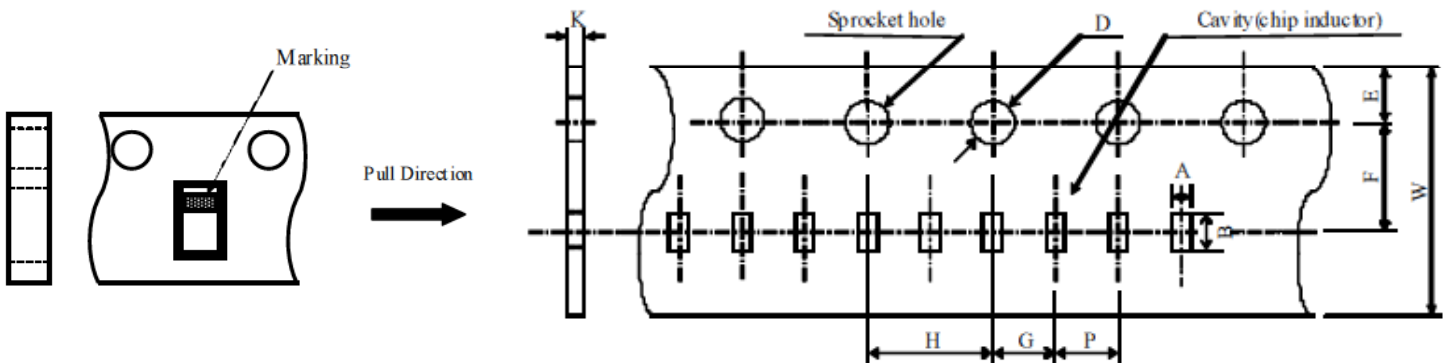


Item	Quantity
MHQ0603W	15,000 pcs

(Unit: mm)

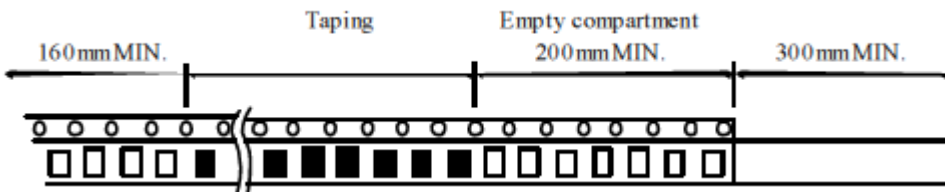
Mark	A	B	C	D	E
Dimension	$\Phi 180.0 \pm 2.0$	$\Phi 60.0$ Min.	$\Phi 13.0 \pm 0.2$	$\Phi 21.0 \pm 0.8$	$2.0 \pm 0.5$
Mark	W1	W2	R		
Dimension	$8.4 +2.00$	14.4 Max.	1.0		

## Tape Dimensions



(unit: mm)

Mark	A	B	D	E	F
Dimension	$0.44 \pm 0.05$	$0.74 \pm 0.05$	$\Phi 1.50 +0.10$ $0$	$1.75 \pm 0.10$	$3.50 \pm 0.05$
Mark	G	H	K	P	W
Dimension	$2.00 \pm 0.05$	$4.00 \pm 0.10$	0.60 MAX	$2.00 \pm 0.05$	$8.00 \pm 0.30$



## Product identification

<u>MHQ</u>	<u>0603</u>	<u>W</u>	<u>15N</u>	<u>J</u>	<u>#</u>	<u>***</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

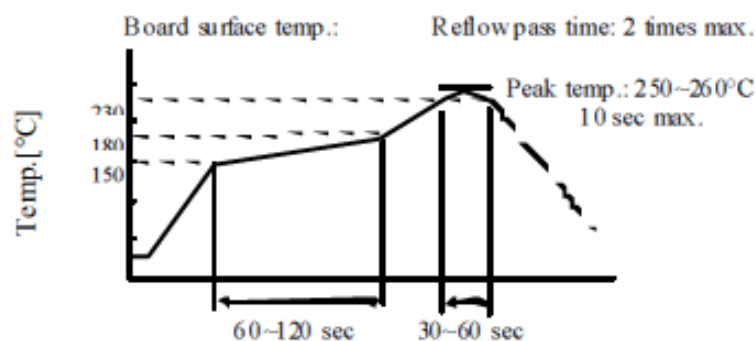
- (1) Product symbol
- (2) Dimensions (0.6×0.3mm)
- (3) Series name
- (4) Inductance (15N: 15nH)
- (5) Inductance Tolerance (B: ±0.1nH, C: ±0.2nH, S: ±0.3nH, G: ±2%, H: ±3%, J: ±5%)
- (6) Packing style (T: taping)
- (7) Control number

## Recommended land pattern



## Recommended Reflow Profile

Recommended reflow soldering conditions.



### Reworking condition

By using spot heater, in a temperature 350 °C max, more than a distance 3mm from the product within 5 seconds

**This product contains no lead and also support lead-free soldering.**

**This product corresponds to ROHS.**

It contains neither Cd, Pb, Hg, Cr6+, PBB nor PBDE.

### **MSL**

MSL is in accordance with Level-1

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[MLZ1608M150WTD25](#) [MLZ1608M3R3WTD25](#) [MLZ1608M3R3WT000](#) [MLZ1608M150WT000](#) [MLZ1608A1R5WT000](#)  
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