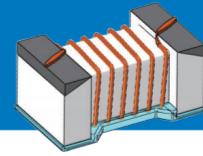


# Wire Wound Chip Ceramic Inductor – MWSD – C – M8X Series



Operating temp. : -40°C ~+125°C

## FEATURES

- ◆ Small chip suitable for surface mounting
- ◆ High rated current can be applied because of lower DC resistance than MWSD-C-M series
- ◆ Tight inductance tolerance and high reliability
- ◆ Single-sided package, thinner than SDWL-C-M8X series

## APPLICATIONS

- ◆ High frequency circuit in telecommunication and other equipments
- ◆ Mobile phones and other electronic devices
- ◆ Bluetooth, WLAN, Broadband network

## PRODUCT IDENTIFICATION

1 <b>MWSD</b>	2 <b>1005</b>	3 <b>C</b>	4 <b>10N</b>	5 	6 <b>T</b>	7 <b>M81</b>
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1 Type	
MWSD	Wire Wound Chip Inductor

2 External Dimensions	
	1005 [0402]
	1608 [0603]

3 Material Code	
C	Ceramic

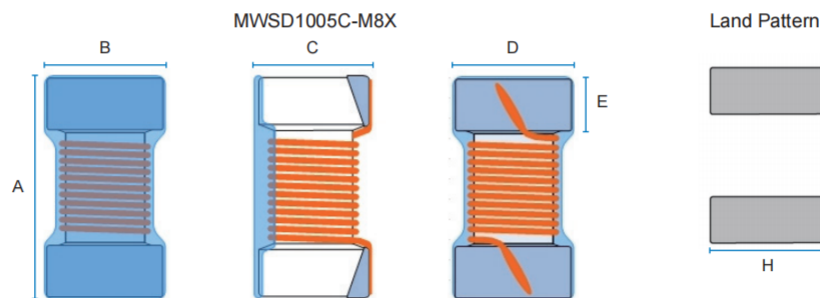
4 Nominal Inductance	
Example	Nominal Value
4N7	4.7nH
10N	10nH
R10	100nH

6 Packing	
B	Bulk Package
T	Tape & Reel

5 Inductance Tolerance	
B	±0.1nH
C	±0.2nH
S	±0.3nH
D	±0.5nH
G	±2%
H	±3%
J	±5%
K	±10%

7 Internal Code	
M81	Internal Code

## SHAPE AND DIMENSIONS



Unit: mm

Series	A	B	C	D	E REF.	H REF.	I REF.	J REF.
MWSD1005C-M8X	1.1±0.1	0.53±0.1	0.6±0.1	0.5±0.1	0.20	0.65	0.35	0.50
MWSD1608C-M8X	1.60±0.20	1.00±0.20	0.90±0.20	0.95	0.30	1.02	0.64	0.64

## SPECIFICATIONS MWSD1005C -M81 TYPE

Part Number	Inductance	Tolerance	Min. Quality Factor	L/Q Test Freq.	Min.Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
Units	nH	-	-	MHz	GHz	$\Omega$	mA
Symbol	L	-	Q	Freq.	S.R.F	DCR	I <sub>r</sub>
MWSD1005C1N3 □ TM81	1.3	C,S,D,K	20	100/250	18.0	0.012	3150
MWSD1005C1N5 □ TM81	1.5	B,C,S,D,K	20	100/250	18.0	0.028	2100
MWSD1005C1N6 □ TM81	1.6	B,C,S,D,K	20	100/250	18.0	0.045	1450
MWSD1005C1N7 □ TM81	1.7	B,C,S,D,K	20	100/250	18.0	0.065	1150
MWSD1005C1N8 □ TM81	1.8	B,C,S,D,K	20	100/250	18.0	0.065	1150
MWSD1005C2N2 □ TM81	2.2	B,C,S,D,K	30	100/250	15.5	0.022	2530
MWSD1005C2N3 □ TM81	2.3	B,C,S,D,K	30	100/250	15.5	0.022	2530
MWSD1005C2N4 □ TM81	2.4	B,C,S,D,K	30	100/250	15.5	0.022	2530
MWSD1005C2N5 □ TM81	2.5	B,C,S,D,K	30	100/250	15.5	0.030	2100
MWSD1005C2N6 □ TM81	2.6	B,C,S,D,K	30	100/250	14.5	0.035	1950
MWSD1005C2N7 □ TM81	2.7	B,C,S,D,K	28	100/250	14.0	0.047	1500
MWSD1005C2N8 □ TM81	2.8	B,C,S,D,K	27	100/250	13.5	0.047	1500
MWSD1005C2N9 □ TM81	2.9	B,C,S,D,K	25	100/250	12.5	0.047	1500
MWSD1005C3N0 □ TM81	3.0	B,C,S,D,K	20	100/250	12.5	0.063	1350
MWSD1005C3N3 □ TM81	3.3	B,C,S,D,K	30	100/250	14.0	0.030	2000
MWSD1005C3N4 □ TM81	3.4	B,C,S,D,J,K	30	100/250	10.0	0.030	1950
MWSD1005C3N5 □ TM81	3.5	B,C,S,D,J,K	30	100/250	10.0	0.030	1950
MWSD1005C3N6 □ TM81	3.6	B,C,S,D,J,K	30	100/250	10.0	0.030	1950
MWSD1005C3N7 □ TM81	3.7	B,C,S,D,J,K	35	100/250	10.0	0.030	1950
MWSD1005C3N8 □ TM81	3.8	B,C,S,D,J,K	35	100/250	10.0	0.030	1950
MWSD1005C3N9 □ TM81	3.9	B,C,S,D,J,K	35	100/250	10.0	0.030	1950
MWSD1005C4N0 □ TM81	4.0	B,C,S,D,J,K	30	100/250	10.0	0.030	1950
MWSD1005C4N1 □ TM81	4.1	B,C,S,D,J,K	30	100/250	9.6	0.044	1800
MWSD1005C4N2 □ TM81	4.2	B,C,S,D,J,K	30	100/250	9.6	0.044	1800
MWSD1005C4N3 □ TM81	4.3	B,C,S,D,J,K	32	100/250	9.6	0.044	1800
MWSD1005C4N4 □ TM81	4.4	B,C,S,D,J,K	34	100/250	9.6	0.052	1600
MWSD1005C4N5 □ TM81	4.5	B,C,S,D,J,K	34	100/250	9.6	0.060	1450
MWSD1005C4N6 □ TM81	4.6	B,C,S,D,J,K	32	100/250	9.6	0.060	1450
MWSD1005C4N7 □ TM81	4.7	B,C,S,D,J,K	31	100/250	8.0	0.071	1200
MWSD1005C4N8 □ TM81	4.8	B,C,S,D,J,K	30	100/250	8.0	0.071	1200
MWSD1005C4N9 □ TM81	4.9	B,C,S,D,J,K	27	100/250	8.0	0.071	1200
MWSD1005C5N0 □ TM81	5.0	B,C,S,D,J,K	32	100/250	10.0	0.040	1770
MWSD1005C5N1 □ TM81	5.1	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N2 □ TM81	5.2	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N3 □ TM81	5.3	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N4 □ TM81	5.4	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N5 □ TM81	5.5	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N6 □ TM81	5.6	B,C,S,D,J,K	35	100/250	8.0	0.040	1770
MWSD1005C5N7 □ TM81	5.7	B,C,S,D,J,K	30	100/250	8.0	0.040	1770
MWSD1005C5N8 □ TM81	5.8	B,C,S,D,J,K	30	100/250	8.0	0.040	1770
MWSD1005C5N9 □ TM81	5.9	B,C,S,D,J,K	30	100/250	8.0	0.040	1770
MWSD1005C6N0 □ TM81	6.0	B,C,S,D,J,K	32	100/250	8.0	0.056	1600
MWSD1005C6N1 □ TM81	6.1	B,C,S,D,J,K	32	100/250	8.0	0.056	1600
MWSD1005C6N2 □ TM81	6.2	B,C,S,D,J,K	33	100/250	8.0	0.056	1600
MWSD1005C6N3 □ TM81	6.3	G,H,J,K	33	100/250	7.8	0.057	1600
MWSD1005C6N4 □ TM81	6.4	G,H,J,K	33	100/250	7.0	0.065	1380
MWSD1005C6N5 □ TM81	6.5	G,H,J,K	32	100/250	7.0	0.065	1380
MWSD1005C6N6 □ TM81	6.6	G,H,J,K	30	100/250	7.0	0.078	1280

**SPECIFICATIONS** MWSD1005C -M81 TYPE

Part Number	Inductance	Tolerance	Min. Quality Factor	L/Q Test Freq.	Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
Units	nH	-	-	MHz	GHz	Ω	mA
Symbol	L	-	Q	Freq.	S.R.F	DCR	I <sub>r</sub>
MWSD1005C6N7 □ TM81	6.7	G,H,J,K	30	100/250	7.0	0.078	1280
MWSD1005C6N8 □ TM81	6.8	G,H,J,K	30	100/250	7.0	0.068	1450
MWSD1005C6N9 □ TM81	6.9	G,H,J,K	32	100/250	8.5	0.069	1420
MWSD1005C7N0 □ TM81	7.0	G,H,J,K	33	100/250	8.0	0.069	1420
MWSD1005C7N1 □ TM81	7.1	G,H,J,K	32	100/250	8.0	0.069	1420
MWSD1005C7N2 □ TM81	7.2	G,H,J,K	32	100/250	7.0	0.050	1700
MWSD1005C7N3 □ TM81	7.3	G,H,J,K	32	100/250	7.0	0.050	1700
MWSD1005C7N4 □ TM81	7.4	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C7N5 □ TM81	7.5	G,H,J,K	35	100/250	7.0	0.050	1700
MWSD1005C7N6 □ TM81	7.6	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C7N7 □ TM81	7.7	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C7N8 □ TM81	7.8	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C7N9 □ TM81	7.9	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C8N0 □ TM81	8.0	G,H,J,K	30	100/250	7.0	0.050	1700
MWSD1005C8N1 □ TM81	8.1	G,H,J,K	32	100/250	6.5	0.069	1500
MWSD1005C8N2 □ TM81	8.2	G,H,J,K	32	100/250	6.5	0.069	1500
MWSD1005C8N3 □ TM81	8.3	G,H,J,K	32	100/250	6.5	0.069	1500
MWSD1005C8N4 □ TM81	8.4	G,H,J,K	32	100/250	6.5	0.069	1500
MWSD1005C8N5 □ TM81	8.5	G,H,J,K	32	100/250	6.5	0.069	1500
MWSD1005C8N6 □ TM81	8.6	G,H,J,K	31	100/250	6.5	0.070	1420
MWSD1005C8N7 □ TM81	8.7	G,H,J,K	31	100/250	6.5	0.070	1420
MWSD1005C8N8 □ TM81	8.8	G,H,J,K	31	100/250	6.5	0.070	1420
MWSD1005C8N9 □ TM81	8.9	G,H,J,K	31	100/250	6.5	0.070	1420
MWSD1005C9N0 □ TM81	9.0	G,H,J,K	31	100/250	6.5	0.070	1500
MWSD1005C9N1 □ TM81	9.1	G,H,J,K	32	100/250	6.5	0.080	1400
MWSD1005C9N2 □ TM81	9.2	G,H,J,K	32	100/250	6.0	0.081	1400
MWSD1005C9N3 □ TM81	9.3	G,H,J,K	34	100/250	6.0	0.081	1400
MWSD1005C9N4 □ TM81	9.4	G,H,J,K	33	100/250	6.0	0.081	1400
MWSD1005C9N5 □ TM81	9.5	G,H,J,K	32	100/250	6.0	0.081	1400
MWSD1005C9N6 □ TM81	9.6	G,H,J,K	33	100/250	6.0	0.081	1400
MWSD1005C9N7 □ TM81	9.7	G,H,J,K	33	100/250	6.0	0.081	1400
MWSD1005C9N8 □ TM81	9.8	G,H,J,K	34	100/250	6.0	0.081	1400
MWSD1005C9N9 □ TM81	9.9	G,H,J,K	32	100/250	6.0	0.081	1400
MWSD1005C10N □ TM81	10	G,H,J,K	31	100/250	6.0	0.081	1400
MWSD1005C11N □ TM81	11	G,H,J,K	32	100/250	6.2	0.083	1400
MWSD1005C12N □ TM81	12	G,H,J,K	30	100/250	5.2	0.093	1240
MWSD1005C13N □ TM81	13	G,H,J,K	30	100/250	5.2	0.093	1240
MWSD1005C14N □ TM81	14	G,H,J,K	31	100/250	5.2	0.111	1150
MWSD1005C15N □ TM81	15	G,H,J,K	31	100/250	5.5	0.114	1150
MWSD1005C16N □ TM81	16	G,H,J,K	31	100/250	5.0	0.126	1000
MWSD1005C17N □ TM81	17	G,H,J,K	31	100/250	5.2	0.130	1000
MWSD1005C18N □ TM81	18	G,H,J,K	30	100/250	5.5	0.156	1050
MWSD1005C19N □ TM81	19	G,H,J,K	30	100/250	5.0	0.126	920
MWSD1005C20N □ TM81	20	G,H,J,K	30	100/250	4.5	0.186	800
MWSD1005C21N □ TM81	21	G,H,J,K	30	100/250	4.5	0.202	780
MWSD1005C22N □ TM81	22	G,H,J,K	30	100/250	4.5	0.202	780
MWSD1005C23N □ TM81	23	G,H,J,K	29	100/250	4.5	0.201	760
MWSD1005C24N □ TM81	24	G,H,J,K	31	100/250	4.0	0.212	770

## SPECIFICATIONS MWSD1005C -M81 TYPE

Part Number	Inductance	Tolerance	Min. Quality Factor	L/Q Test Freq.	Min.Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
Units	nH	-	-	MHz	GHz	Ω	mA
Symbol	L	-	Q	Freq.	S.R.F	DCR	Ir
MWSD1005C25N □ TM81	25	G,H,J,K	31	100/250	4.1	0.221	750
MWSD1005C26N □ TM81	26	G,H,J,K	29	100/250	4.1	0.282	720
MWSD1005C27N □ TM81	27	G,H,J,K	30	100/250	4.0	0.288	680
MWSD1005C30N □ TM81	30	G,H,J,K	30	100/250	3.8	0.309	660
MWSD1005C33N □ TM81	33	G,H,J,K	30	100/250	3.6	0.336	620
MWSD1005C36N □ TM81	36	G,H,J,K	30	100/250	3.5	0.431	540
MWSD1005C39N □ TM81	39	G,H,J,K	28	100/250	3.4	0.456	530
MWSD1005C43N □ TM81	43	G,H,J,K	30	100/250	3.4	0.516	515
MWSD1005C47N □ TM81	47	G,H,J,K	25	100/250	3.2	0.648	440
MWSD1005C51N □ TM81	51	G,H,J,K	25	100/250	2.9	0.696	415
MWSD1005C53N □ TM81	53	G,H,J,K	25	100/200	2.9	0.696	415
MWSD1005C56N □ TM81	56	G,H,J,K	25	100/200	2.9	0.996	340
MWSD1005C68N □ TM81	68	G,H,J,K	25	100/250	2.5	1.128	320
MWSD1005C75N □ TM81	75	G,H,J,K	25	100/200	2.4	1.224	320

## MWSD1608C -M81 TYPE

Part Number	Inductance	Tolerance	Min. Quality Factor	L/Q Test Freq.	Min.Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
Units	nH	-	-	MHz	GHz	Ω	mA
Symbol	L	-	Q	Freq.	S.R.F	DCR	Ir
MWSD1608C2N2 □ TM81	2.2	C	24	100/250	15.0	0.018	3200
MWSD1608C2N4 □ TM81	2.4	C	18	100/250	15.0	0.026	2400
MWSD1608C3N0 □ TM81	3.0	C	13	100/250	15.0	0.17	670
MWSD1608C3N9 □ TM81	3.9	C,G	30	100/250	10.0	0.028	2200
MWSD1608C4N1 □ TM81	4.1	C,G	30	100/250	10.0	0.028	2200
MWSD1608C4N2 □ TM81	4.2	C,G	30	100/250	10.0	0.028	2200
MWSD1608C4N3 □ TM81	4.3	C,G	35	100/250	11.6	0.036	2100
MWSD1608C4N7 □ TM81	4.7	C,G	25	100/250	10.4	0.054	1500
MWSD1608C4N9 □ TM81	4.9	C,G	23	100/250	7.3	0.081	1200
MWSD1608C6N0 □ TM81	6.0	C,G	40	100/250	6.65	0.040	1900
MWSD1608C6N5 □ TM81	6.5	C,G	40	100/250	6.65	0.040	1900
MWSD1608C6N8 □ TM81	6.8	C,G	40	100/250	6.65	0.040	1900
MWSD1608C7N2 □ TM81	7.2	C,G	38	100/250	6.65	0.040	1900
MWSD1608C7N5 □ TM81	7.5	C,G	35	100/250	7.0	0.048	1500
MWSD1608C8N2 □ TM81	8.2	C,G	38	100/250	4.75	0.052	1600
MWSD1608C8N4 □ TM81	8.4	C,G	38	100/250	4.75	0.052	1600
MWSD1608C8N7 □ TM81	8.7	C,G	38	100/250	4.75	0.052	1600
MWSD1608C9N1 □ TM81	9.1	C,G	38	100/250	4.75	0.052	1600
MWSD1608C9N5 □ TM81	9.5	C,G	38	100/250	4.75	0.052	1600
MWSD1608C9N9 □ TM81	9.9	C,G	38	100/250	4.75	0.052	1600
MWSD1608C10N □ TM81	10	G,J	38	100/250	4.75	0.052	1600
MWSD1608C11N □ TM81	11	G,J	40	100/250	4.75	0.052	1600
MWSD1608C12N □ TM81	12	G,J	37	100/250	5.0	0.064	1500
MWSD1608C13N □ TM81	13	G,J	37	100/250	5.0	0.064	1500
MWSD1608C15N □ TM81	15	G,J	38	100/250	4.6	0.075	1400
MWSD1608C16N □ TM81	16	G,J	40	100/250	4.1	0.075	1400
MWSD1608C17N □ TM81	17	G,J	40	100/250	4.6	0.075	1400

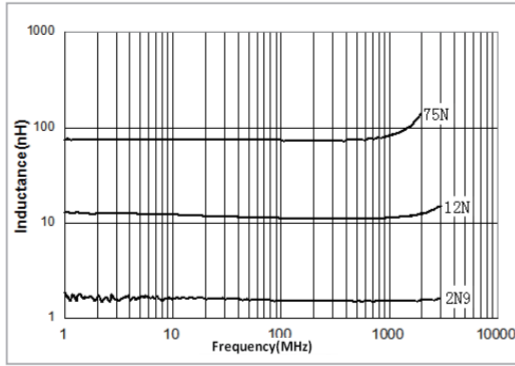
**SPECIFICATIONS** MWSD1608C -M81 TYPE

Part Number	Inductance	公差 Tolerance	Min. Quality Factor	L/Q Test Freq.	Min. Self- resonant Frequency	Max. DC Resistance	Max. Rated Current
Units	nH	-	-	MHz	GHz	Ω	mA
Symbol	L	-	Q	Freq.	S.R.F	DCR	I <sub>r</sub>
MWSD1608C18N □ TM81	18	G,J	40	100/250	4.6	0.075	1400
MWSD1608C19N □ TM81	19	G,J	40	100/250	3.9	0.075	1400
MWSD1608C22N □ TM81	22	G,J	40	100/250	3.45	0.086	1300
MWSD1608C23N □ TM81	23	G,J	40	100/250	3.45	0.086	1300
MWSD1608C24N □ TM81	24	G,J	40	100/250	3.45	0.086	1300
MWSD1608C25N □ TM81	25	G,J	40	100/250	3.6	0.098	1200
MWSD1608C27N □ TM81	27	G,J	40	100/250	3.6	0.098	1200
MWSD1608C28N □ TM81	28	G,J	40	100/250	3.6	0.098	1200
MWSD1608C30N □ TM81	30	G,J	40	100/250	2.88	0.12	1100
MWSD1608C31N □ TM81	31	G,J	40	100/250	3.15	0.11	1100
MWSD1608C34N □ TM81	34	G,J	40	100/250	3.0	0.15	1050
MWSD1608C36N □ TM81	36	G,J	37	100/250	3.0	0.20	910
MWSD1608C37N □ TM81	37	G,J	37	100/250	3.0	0.20	910
MWSD1608C39N □ TM81	39	G,J	40	100/250	3.28	0.16	1000
MWSD1608C41N □ TM81	41	G,J	40	100/250	3.1	0.16	1000
MWSD1608C43N □ TM81	43	G,J	40	100/250	2.78	0.21	840
MWSD1608C44N □ TM81	44	G,J	40	100/250	2.78	0.21	840
MWSD1608C47N □ TM81	47	G,J	32	100/200	2.7	0.23	830
MWSD1608C48N □ TM81	48	G,J	32	100/200	2.7	0.23	830
MWSD1608C51N □ TM81	51	G,J	32	100/200	2.7	0.23	830
MWSD1608C52N □ TM81	52	G,J	35	100/200	2.75	0.27	750
MWSD1608C56N □ TM81	56	G,J	38	100/200	2.6	0.26	770
MWSD1608C58N □ TM81	58	G,J	35	100/200	2.4	0.30	700
MWSD1608C68N □ TM81	68	G,J	37	100/200	2.38	0.38	630
MWSD1608C69N □ TM81	69	G,J	37	100/200	2.38	0.38	630
MWSD1608C72N □ TM81	72	G,J	34	100/150	2.1	0.47	560
MWSD1608C73N □ TM81	73	G,J	28	100/150	2.1	0.41	590
MWSD1608C75N □ TM81	75	G,J	28	100/150	2.05	0.41	590
MWSD1608C78N □ TM81	78	G,J	28	100/150	2.28	0.41	590
MWSD1608C82N □ TM81	82	G,J	34	100/150	2.23	0.50	550
MWSD1608C83N □ TM81	83	G,J	34	100/150	2.11	0.50	550
MWSD1608C91N □ TM81	91	G,J	33	100/150	1.9	0.54	520
MWSD1608C94N □ TM81	94	G,J	34	100/150	1.75	0.63	490
MWSD1608CR10 □ TM81	100	G,J	34	100/150	1.75	0.63	490
MWSD1608CR11 □ TM81	110	G,J	32	100/150	1.73	0.70	450
MWSD1608CR12 □ TM81	120	G,J	32	100/150	1.65	0.72	450
MWSD1608CR15 □ TM81	150	G,J	28	100/150	1.45	0.87	420
MWSD1608CR18 □ TM81	180	G,J	25	100/100	1.38	1.65	310
MWSD1608CR20 □ TM81	200	G,J	25	100/100	1.35	1.74	290
MWSD1608CR21 □ TM81	210	G,J	27	100/100	1.33	1.98	280
MWSD1608CR22 □ TM81	220	G,J	25	100/100	1.33	2.08	280
MWSD1608CR25 □ TM81	250	G,J	24	100/100	1.3	2.28	250
MWSD1608CR27 □ TM81	270	G,J	24	100/100	1.2	2.42	260
MWSD1608CR30 □ TM81	300	G,J	25	100/100	1.05	3.12	220
MWSD1608CR33 □ TM81	330	G,J	25	100/100	1.0	3.84	190
MWSD1608CR36 □ TM81	360	G,J	25	100/100	0.9	3.98	190
MWSD1608CR39 □ TM81	390	G,J	25	100/100	1.0	4.23	190

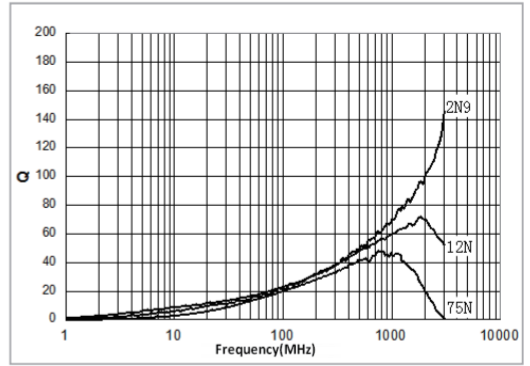
※: Please refer to "Measurement Notice for RF Inductors".

**TYPICAL ELECTRICAL CHARACTERISTICS**

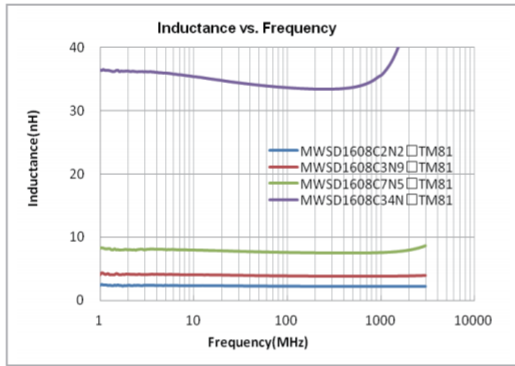
**MWSD1005C-M81 TYPE**  
Inductance vs. Frequency Characteristics



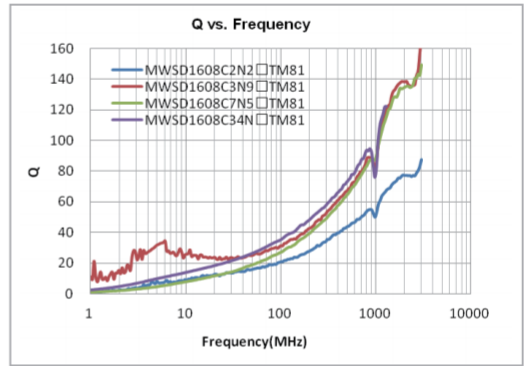
Q vs. Frequency Characteristics



**MWSD1608C-M81 TYPE**  
Inductance vs. Frequency Characteristics



Q vs. Frequency Characteristics





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