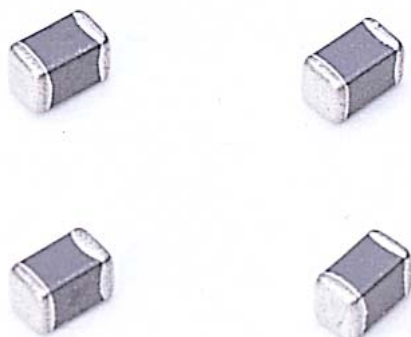


## Feature

1. Monolithic structure
2. Closed magnetic circuit
3. S.M.T. type
4. Suitable for flow and reflow soldering
5. Shapes and dimensions follow E.I.A. SPEC
6. Available in various sizes & 6 materials
7. Excellent soldering ability and heat resistance
8. High reliability



## Application

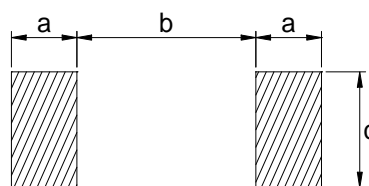
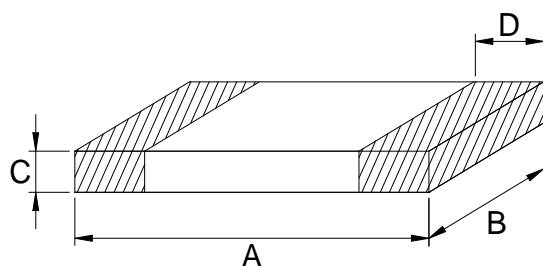
Noise elimination for four I/O lines of notebook PCs, digital TVs and VTRs, printers, hard disk drives, personal computers and other general consumer and computers products.

## Product Identification

**QTL 1608 - 1R0 K - LF**  
**1 2 3 4 5**

1. Series name.
2. Dimension.( See Details )
3. Inductance.( See Details )
4. Tolerance.( See Details )
5. Lead-Free part number.

## Configurations & Dimensions



PCB Pattern

Series Name	A	B	C	D	a	b	c
QTL1608	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.3 ± 0.2	1.00	0.60	0.80
QTL2012	2.0 ± 0.2	1.25 ± 0.2	0.85 ± 0.2	0.5 ± 0.3	1.00	1.00	1.00
QTL2012H	2.0 ± 0.2	1.25 ± 0.2	1.25 ± 0.2	0.5 ± 0.3	1.00	1.00	1.00
QTL2520	2.5 ± 0.2	2.0 ± 0.2	1.6 ± 0.2	0.5 ± 0.3	1.20	1.50	1.50
QTL3216	3.2 ± 0.2	1.6 ± 0.2	1.1 ± 0.3	0.5 ± 0.3	1.10	2.20	1.40
QTL3225	3.2 ± 0.2	2.5 ± 0.2	1.3 ± 0.2	0.5 ± 0.3	1.10	2.20	3.40
QTL4532	4.5 ± 0.2	3.2 ± 0.2	1.5 ± 0.2	0.5 ± 0.3	1.67	2.57	4.22

Unit: mm

## Multilayer Ferrite Chip Inductors / QTL Series

### Electrical Characteristics / QTL1608

System Number	Part Number	Inductance ( $\mu$ H)	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $m\Omega$ ) Max.	Rated Current ( mA ) Max.
WP34O0118-00	QTL1608-47N __	0.047	10	50	260	300	50
WP34O011A-00	QTL1608-68N __	0.068	10	50	250	300	50
WP34O011B-00	QTL1608-82N __	0.082	10	50	245	300	50
WP34O0120-00	QTL1608-R10 __	0.10	15	25	240	500	50
WP34O0121-00	QTL1608-R12 __	0.12	15	25	205	500	50
WP34O0122-00	QTL1608-R15 __	0.15	15	25	180	600	50
WP34O0123-00	QTL1608-R18 __	0.18	15	25	165	600	50
WP34O0124-00	QTL1608-R22 __	0.22	15	25	150	800	50
WP34O0125-00	QTL1608-R27 __	0.27	15	25	136	800	50
WP34O0126-00	QTL1608-R33 __	0.33	15	25	125	850	35
WP34O0127-00	QTL1608-R39 __	0.39	15	25	110	1,000	35
WP34O0128-00	QTL1608-R47 __	0.47	15	25	105	1,350	35
WP34O0129-00	QTL1608-R56 __	0.56	15	25	95	1,550	35
WP34O012A-00	QTL1608-R68 __	0.68	15	25	80	1,700	35
WP34O012B-00	QTL1608-R82 __	0.82	15	25	75	2,100	35
WP34O0130-00	QTL1608-1R0 __	1.0	30	10	70	600	25
WP34O0131-00	QTL1608-1R2 __	1.2	30	10	60	800	25
WP34O0132-00	QTL1608-1R5 __	1.5	30	10	55	800	25
WP34O0133-00	QTL1608-1R8 __	1.8	30	10	50	950	25
WP34O0134-00	QTL1608-2R2 __	2.2	30	10	45	1,150	15
WP34O0135-00	QTL1608-2R7 __	2.7	30	10	40	1,350	15
WP34O0136-00	QTL1608-3R3 __	3.3	30	10	38	1,550	15
WP34O0137-00	QTL1608-3R9 __	3.9	30	10	36	1,700	15
WP34O0138-00	QTL1608-4R7 __	4.7	30	10	33	2,100	15
WP34O0139-00	QTL1608-5R6 __	5.6	30	4	22	1,550	15
WP34O013A-00	QTL1608-6R8 __	6.8	30	4	20	1,700	15
WP34O013B-00	QTL1608-8R2 __	8.2	30	4	18	2,100	15
WP34O0140-00	QTL1608-100 __	10	30	2	17	2,550	15
WP34O0141-00	QTL1608-120 __	12	30	2	15	2,750	15
WP34O0142-00	QTL1608-150 __	15	20	1	14	1,700	15
WP34O0143-00	QTL1608-180 __	18	20	1	13	1,850	15

※ Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

## Multilayer Ferrite Chip Inductors / QTL Series

### Electrical Characteristics / QTL2012 & QTL2012H

System Number	Part Number	Inductance ( $\mu$ H )	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $m\Omega$ ) Max.	Rated Current ( mA ) Max.
WP34O0218-00	QTL2012-47N __	0.047	15	50	320	200	300
WP34O021A-00	QTL2012-68N __	0.068	15	50	280	200	300
WP34O021B-00	QTL2012-82N __	0.082	15	50	255	200	300
WP34O0220-00	QTL2012-R10 __	0.10	20	25	235	300	250
WP34O0221-00	QTL2012-R12 __	0.12	20	25	220	300	250
WP34O0222-00	QTL2012-R15 __	0.15	20	25	200	400	250
WP34O0223-00	QTL2012-R18 __	0.18	20	25	185	400	250
WP34O0224-00	QTL2012-R22 __	0.22	20	25	170	500	250
WP34O0225-00	QTL2012-R27 __	0.27	20	25	150	500	250
WP34O0226-00	QTL2012-R33 __	0.33	20	25	145	550	250
WP34O0227-00	QTL2012-R39 __	0.39	25	25	135	650	200
WP34O0228-00	QTL2012H-R47 __	0.47	25	25	125	650	200
WP34O0229-00	QTL2012H-R56 __	0.56	25	25	115	750	150
WP34O022A-00	QTL2012H-R68 __	0.68	25	25	105	800	150
WP34O022B-00	QTL2012H-R82 __	0.82	25	25	100	1,000	150
WP34O0230-00	QTL2012-1R0 __	1.0	45	10	75	400	50
WP34O0231-00	QTL2012-1R2 __	1.2	45	10	65	500	50
WP34O0232-00	QTL2012-1R5 __	1.5	45	10	60	500	50
WP34O0233-00	QTL2012-1R8 __	1.8	45	10	55	600	50
WP34O0234-00	QTL2012-2R2 __	2.2	45	10	50	650	30
WP34O0335-00	QTL2012H-2R7 __	2.7	45	10	45	750	30
WP34O0336-00	QTL2012H-3R3 __	3.3	45	10	41	800	30
WP34O0337-00	QTL2012H-3R9 __	3.9	45	10	38	900	30
WP34O0338-00	QTL2012H-4R7 __	4.7	45	10	35	1,000	30
WP34O0339-00	QTL2012H-5R6 __	5.6	45	4	32	900	15
WP34O033A-00	QTL2012H-6R8 __	6.8	45	4	29	1,000	15
WP34O033B-00	QTL2012H-8R2 __	8.2	45	4	26	1,100	15
WP34O0340-00	QTL2012H-100 __	10	45	2	24	1,150	15
WP34O0341-00	QTL2012H-120 __	12	45	2	22	1,250	15
WP34O0342-00	QTL2012H-150 __	15	30	1	19	800	5
WP34O0343-00	QTL2012H-180 __	18	30	1	18	900	5
WP34O0344-00	QTL2012H-220 __	22	30	1	16	1,100	5
WP34O0345-00	QTL2012H-270 __	27	30	1	14	1,150	5
WP34O0346-00	QTL2012H-330 __	33	30	0.4	13	1,250	5

※ Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

## Multilayer Ferrite Chip Inductors / QTL Series

### Electrical Characteristics / QTL2520

System Number	Part Number	Inductance ( $\mu$ H )	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $m\Omega$ ) Max.	Rated Current ( mA ) Max.
WP34O0420-00	QTL2520-R10 __	0.10	30	25.2	680	210	450
WP34O0421-00	QTL2520-R12 __	0.12	30	25.2	650	220	400
WP34O0422-00	QTL2520-R15 __	0.15	30	25.2	530	250	400
WP34O0423-00	QTL2520-R18 __	0.18	30	25.2	520	290	370
WP34O0424-00	QTL2520-R22 __	0.22	30	25.2	390	300	370
WP34O0425-00	QTL2520-R27 __	0.27	30	25.2	330	330	350
WP34O0426-00	QTL2520-R33 __	0.33	30	25.2	310	390	350
WP34O0427-00	QTL2520-R39 __	0.39	30	25.2	290	400	320
WP34O0428-00	QTL2520-R47 __	0.47	30	25.2	240	440	300
WP34O0429-00	QTL2520-R56 __	0.56	30	25.2	210	490	250
WP34O042A-00	QTL2520-R68 __	0.68	30	25.2	180	520	250
WP34O042B-00	QTL2520-R82 __	0.82	30	25.2	155	610	200
WP34O0430-00	QTL2520-1R0 __	1.0	30	7.96	140	750	150
WP34O0431-00	QTL2520-1R2 __	1.2	30	7.96	135	870	120
WP34O0432-00	QTL2520-1R5 __	1.5	30	7.96	130	1,000	110
WP34O0433-00	QTL2520-1R8 __	1.8	30	7.96	120	1,100	100
WP34O0434-00	QTL2520-2R2 __	2.2	30	7.96	105	1,300	100
WP34O0435-00	QTL2520-2R7 __	2.7	30	7.96	90	1,400	100
WP34O0436-00	QTL2520-3R3 __	3.3	30	7.96	80	1,600	80
WP34O0437-00	QTL2520-3R9 __	3.9	30	7.96	75	1,700	80
WP34O0438-00	QTL2520-4R7 __	4.7	30	7.96	65	1,900	80
WP34O0439-00	QTL2520-5R6 __	5.6	30	7.96	60	2,200	80
WP34O043A-00	QTL2520-6R8 __	6.8	30	7.96	55	2,400	70
WP34O043B-00	QTL2520-8R2 __	8.2	30	7.96	50	2,600	50
WP34O0440-00	QTL2520-100 __	10	25	2.52	30	2,200	30
WP34O0441-00	QTL2520-120 __	12	25	2.52	27	2,500	20
WP34O0442-00	QTL2520-150 __	15	25	2.52	23	2,800	20
WP34O0443-00	QTL2520-180 __	18	25	2.52	22	3,200	20
WP34O0444-00	QTL2520-220 __	22	25	2.52	21	3,600	20
WP34O0445-00	QTL2520-270 __	27	25	2.52	19	4,300	15
WP34O0446-00	QTL2520-330 __	33	25	2.52	17	4,700	15

※Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

## Multilayer Ferrite Chip Inductors / QTL Series

### Electrical Characteristics / QTL3216

System Number	Part Number	Inductance ( $\mu$ H )	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $m\Omega$ ) Max.	Rated Current ( mA ) Max.
WP34O0518-00	QTL3216-47N __	0.047	20	50	320	150	300
WP34O051A-00	QTL3216-68N __	0.068	20	50	280	250	300
WP34O0520-00	QTL3216-R10 __	0.10	20	25	235	250	250
WP34O0521-00	QTL3216-R12 __	0.12	20	25	220	300	250
WP34O0522-00	QTL3216-R15 __	0.15	20	25	200	300	250
WP34O0523-00	QTL3216-R18 __	0.18	20	25	185	400	250
WP34O0524-00	QTL3216-R22 __	0.22	20	25	170	400	250
WP34O0525-00	QTL3216-R27 __	0.27	20	25	150	500	250
WP34O0526-00	QTL3216-R33 __	0.33	20	25	145	500	250
WP34O0527-00	QTL3216-R39 __	0.39	25	25	135	600	250
WP34O0528-00	QTL3216-R47 __	0.47	25	25	125	600	200
WP34O0529-00	QTL3216-R56 __	0.56	25	25	115	700	200
WP34O052A-00	QTL3216-R68 __	0.68	25	25	105	800	150
WP34O052B-00	QTL3216-R82 __	0.82	25	25	100	900	150
WP34O0530-00	QTL3216-1R0 __	1.0	45	10	75	400	100
WP34O0531-00	QTL3216-1R2 __	1.2	45	10	65	500	100
WP34O0532-00	QTL3216-1R5 __	1.5	45	10	60	500	50
WP34O0533-00	QTL3216-1R8 __	1.8	45	10	55	500	50
WP34O0534-00	QTL3216-2R2 __	2.2	45	10	50	600	50
WP34O0535-00	QTL3216-2R7 __	2.7	45	10	45	600	50
WP34O0536-00	QTL3216-3R3 __	3.3	45	10	41	700	50
WP34O0537-00	QTL3216-3R9 __	3.9	45	10	38	800	50
WP34O0538-00	QTL3216-4R7 __	4.7	45	10	35	900	50
WP34O0539-00	QTL3216-5R6 __	5.6	50	4	32	700	25
WP34O053A-00	QTL3216-6R8 __	6.8	50	4	29	800	25
WP34O053B-00	QTL3216-8R2 __	8.2	50	4	26	900	25
WP34O0540-00	QTL3216-100 __	10	50	2	24	1,000	25
WP34O0541-00	QTL3216-120 __	12	50	2	22	1,050	15
WP34O0542-00	QTL3216-150 __	15	35	1	19	700	5
WP34O0543-00	QTL3216-180 __	18	35	1	18	700	5
WP34O0544-00	QTL3216-220 __	22	35	1	16	900	5
WP34O0545-00	QTL3216-270 __	27	35	1	14	900	5
WP34O0546-00	QTL3216-330 __	33	35	0.4	13	1,050	5

※ Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

## Multilayer Ferrite Chip Inductors / QTL Series

### ■ Electrical Characteristics / QTL3225

System Number	Part Number	Inductance ( $\mu\text{H}$ )	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $\text{m}\Omega$ ) Max.	Rated Current ( mA ) Max.
WP34O0621-00	QTL3225-R12 __	0.12	30	25.2	500	220	450
WP34O0622-00	QTL3225-R15 __	0.15	30	25.2	450	250	450
WP34O0623-00	QTL3225-R18 __	0.18	30	25.2	380	280	420
WP34O0624-00	QTL3225-R22 __	0.22	30	25.2	350	320	420
WP34O0625-00	QTL3225-R27 __	0.27	30	25.2	260	360	420
WP34O0626-00	QTL3225-R33 __	0.33	30	25.2	220	400	400
WP34O0627-00	QTL3225-R39 __	0.39	30	25.2	200	450	400
WP34O0628-00	QTL3225-R47 __	0.47	30	25.2	180	500	370
WP34O0629-00	QTL3225-R56 __	0.56	30	25.2	150	550	320
WP34O062A-00	QTL3225-R68 __	0.68	30	25.2	140	600	300
WP34O062B-00	QTL3225-R82 __	0.82	30	25.2	130	650	280
WP34O0630-00	QTL3225-1R0 __	1.0	30	7.96	120	700	200
WP34O0631-00	QTL3225-1R2 __	1.2	30	7.96	100	750	150
WP34O0632-00	QTL3225-1R5 __	1.5	30	7.96	85	850	150
WP34O0633-00	QTL3225-1R8 __	1.8	30	7.96	80	900	150
WP34O0634-00	QTL3225-2R2 __	2.2	30	7.96	75	1,000	150
WP34O0635-00	QTL3225-2R7 __	2.7	30	7.96	70	1,100	120
WP34O0636-00	QTL3225-3R3 __	3.3	30	7.96	60	1,200	120
WP34O0637-00	QTL3225-3R9 __	3.9	30	7.96	55	1,300	120
WP34O0638-00	QTL3225-4R7 __	4.7	30	7.96	50	1,500	120
WP34O0639-00	QTL3225-5R6 __	5.6	30	7.96	47	1,600	120
WP34O063A-00	QTL3225-6R8 __	6.8	30	7.96	43	1,800	100
WP34O063B-00	QTL3225-8R2 __	8.2	30	7.96	40	2,000	90
WP34O0640-00	QTL3225-100 __	10	30	2.52	36	2,100	45
WP34O0641-00	QTL3225-120 __	12	30	2.52	33	2,500	45
WP34O0642-00	QTL3225-150 __	15	30	2.52	30	2,800	35
WP34O0643-00	QTL3225-180 __	18	30	2.52	27	3,300	35
WP34O0644-00	QTL3225-220 __	22	30	2.52	25	3,700	35
WP34O0645-00	QTL3225-270 __	27	30	2.52	20	5,000	15
WP34O0646-00	QTL3225-330 __	33	30	2.52	17	5,600	15

※ Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

## Multilayer Ferrite Chip Inductors / QTL Series

### Electrical Characteristics / QTL4532

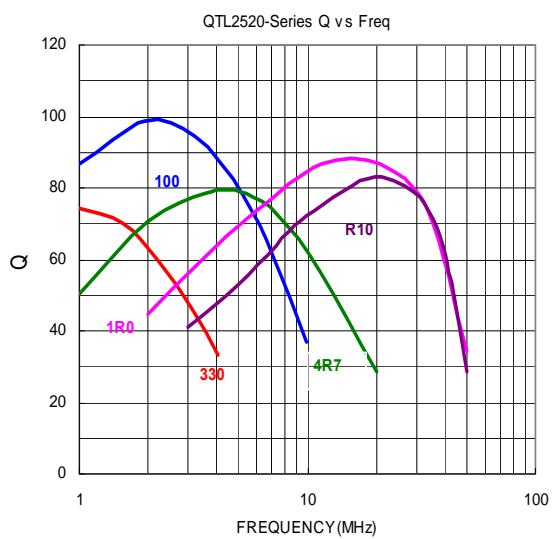
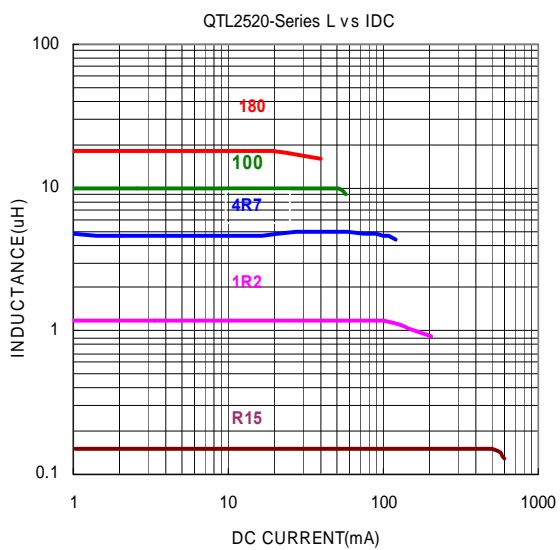
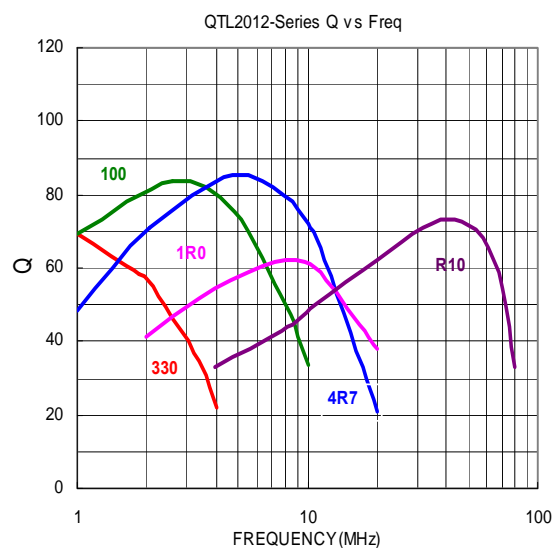
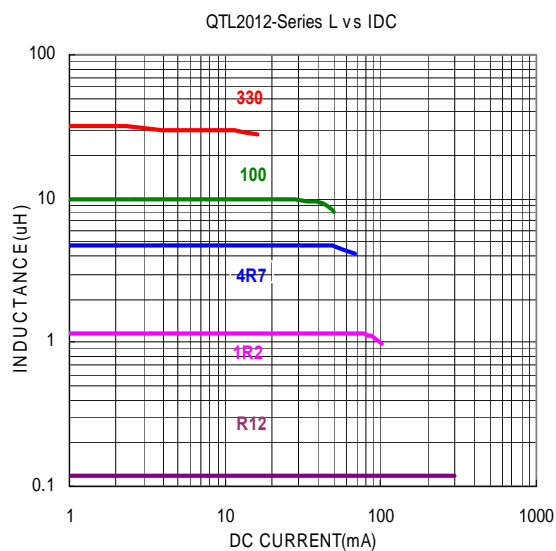
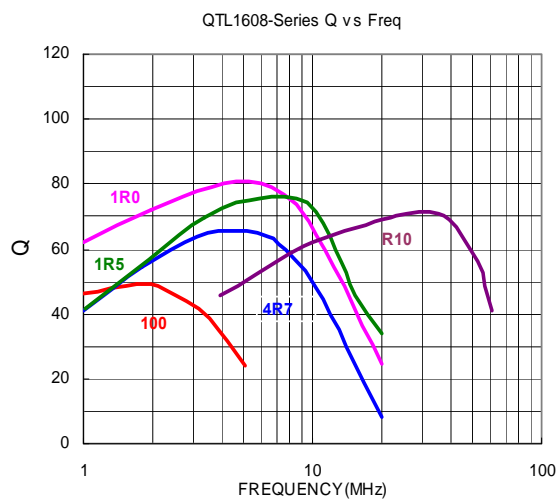
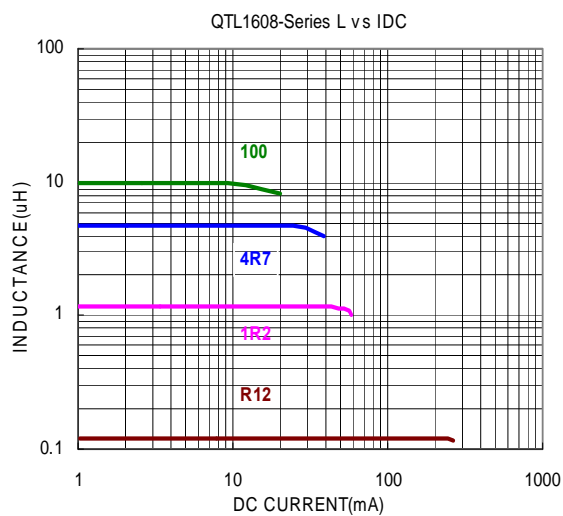
System Number	Part Number	Inductance ( $\mu\text{H}$ )	Q Value Min.	Test Frequency (MHz)	SRF ( MHz ) Min.	DC Resistance ( $\text{m}\Omega$ ) Max	Rated Current ( mA ) Max.
WP34O0820-00	QTL4532-R10 __	0.10	35	25.2	300	180	700
WP34O0821-00	QTL4532-R12 __	0.12	35	25.2	250	200	670
WP34O0822-00	QTL4532-R15 __	0.15	35	25.2	180	220	670
WP34O0823-00	QTL4532-R18 __	0.18	35	25.2	140	240	670
WP34O0824-00	QTL4532-R22 __	0.22	40	25.2	120	250	640
WP34O0825-00	QTL4532-R27 __	0.27	40	25.2	105	260	605
WP34O0826-00	QTL4532-R33 __	0.33	40	25.2	100	280	575
WP34O0827-00	QTL4532-R39 __	0.39	40	25.2	95	300	545
WP34O0828-00	QTL4532-R47 __	0.47	40	25.2	90	320	510
WP34O0829-00	QTL4532-R56 __	0.56	40	25.2	85	360	480
WP34O082A-00	QTL4532-R68 __	0.68	40	25.2	80	400	445
WP34O082B-00	QTL4532-R82 __	0.82	40	25.2	75	450	415
WP34O0830-00	QTL4532-1R0 __	1.0	50	7.96	70	500	370
WP34O0831-00	QTL4532-1R2 __	1.2	50	7.96	60	550	300
WP34O0832-00	QTL4532-1R5 __	1.5	50	7.96	54	600	300
WP34O0833-00	QTL4532-1R8 __	1.8	50	7.96	50	650	300
WP34O0834-00	QTL4532-2R2 __	2.2	50	7.96	46	700	250
WP34O0835-00	QTL4532-2R7 __	2.7	50	7.96	43	750	170
WP34O0836-00	QTL4532-3R3 __	3.3	50	7.96	40	800	160
WP34O0837-00	QTL4532-3R9 __	3.9	50	7.96	35	900	160
WP34O0838-00	QTL4532-4R7 __	4.7	50	7.96	32	1,000	160
WP34O0839-00	QTL4532-5R6 __	5.6	50	7.96	30	1,100	150
WP34O083A-00	QTL4532-6R8 __	6.8	50	7.96	27	1,200	150
WP34O083B-00	QTL4532-8R2 __	8.2	50	7.96	25	1,400	120
WP34O0840-00	QTL4532-100 __	10	50	2.52	20	1,600	100
WP34O0841-00	QTL4532-120 __	12	50	2.52	18	2,000	65
WP34O0842-00	QTL4532-150 __	15	50	2.52	17	2,500	60
WP34O0843-00	QTL4532-180 __	18	50	2.52	15	2,800	55
WP34O0844-00	QTL4532-220 __	22	50	2.52	13	3,200	45
WP34O0845-00	QTL4532-270 __	27	50	2.52	12	3,600	40
WP34O0846-00	QTL4532-330 __	33	50	2.52	11	4,000	40

※ Please specify the inductance tolerance : J,K,L,M ( See Details ).

※ Rated current that will cause temperature rise approximate 30°C without core loss.

# Multilayer Ferrite Chip Inductors / QTL Series

## Electrical Curve / QTL1608 , QTL2012 , QTL2520





# Multilayer Ferrite Chip Inductors / QTL Series

## Electrical Curve/ QTL3216 , QTL3225 , QTL4532

