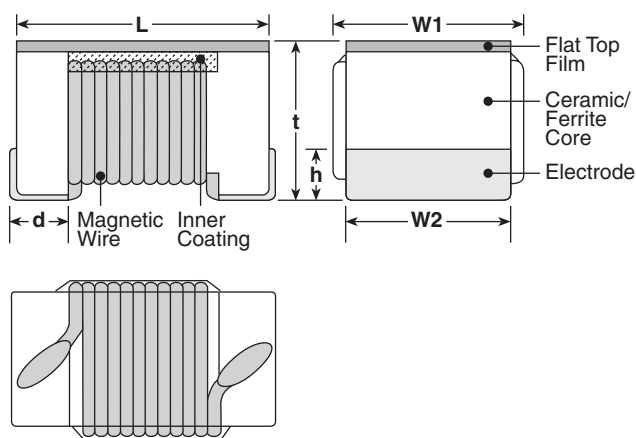


features

- Surface mount
- Flat top suitable for high speed pick-and-place components
- Excellent high frequency applications
- High Q factors and self-resonant frequency values
- Marking: Black body color with white marking (0603, 0805, 1008)
White body color with no marking (0402)

dimensions and construction



Size Code	Dimensions inches (mm)					
	L	W1	W2	t	h	d
KQT0402	.039±.004 (1.0±0.1)	.02±.004 (0.5±0.1)	.02±.004 (0.5±0.1)	.022±.004 (0.55±0.1)	.006±.004 (0.15±0.1)	.01±.004 (0.25±0.1)
KQ0603	.063±.004 (1.6±0.1)	.039±.004 (1.0±0.1)	.033±.004 (0.85±0.1)	.035±.004 (0.9±0.1)	.01±.006 (0.25±0.15)	.014±.004 (0.35±0.1)
KQ0805	.079±.008 (2.0±0.2)	.059±.008 (1.5±0.2)	.053±.004 (1.35±0.1)	.051±.008 (1.3±0.2)	.016±.006 (0.40±0.15)	.018±.004 (0.45±0.1)
KQ1008	.098±.008 (2.5±0.2)	.087±.008 (2.2±0.2)	.079±.004 (2.0±0.1)	.071 ⁺⁰⁰⁸ ₋₀ (1.8 ^{+0.2} ₋₀)	.018±.006 (0.45±0.15)	.018±.004 (0.45±0.1)

ordering information

New Part #	KQ	1008	T	TE	10N	J
Type	KQ KQT	Size Code	Termination Material	Packaging	Nominal Resistance	Tolerance
		0402 0603 0805 1008	T: Sn L: SnPb	TE: 7" embossed plastic TD: 7" paper tape	10N: 10nH R10: 0.1µH 1R0: 1.0µH	B: ±0.1nH C: 0.2nH G: ±2% H: ±3% J: ±5% K: ±10% M: ±20%

For further information on packaging, please refer to Appendix A.

applications and ratings

Part Designation	Marking	Nominal Inductance (nH)	L Measuring Frequency	Inductance Tolerance	Q Quality Factor Minimum	Q Measuring Frequency (MHz)	Self Resonant Frequency Minimum (MHz)	DC Resistance Maximum (Ω)	Allowable DC Current Maximum (mA)		
KQT0402*TD1N0**	—	1.0	250	B: ± 0.1 nH C: ± 0.2 nH	16	6000	0.045	1360			
KQT0402*TD1N9**		1.9							19	0.070	1040
KQT0402*TD2N0**		2.0			18		0.068	960			
KQT0402*TD2N2**		2.2							17	0.120	700
KQT0402*TD2N4**		2.4			19		0.066	840			
KQT0402*TD2N7**		2.7							5800	0.091	800
KQT0402*TD3N3**		3.3									
KQT0402*TD3N6**		3.6			20		0.104	680			
KQT0402*TD3N9**		3.9							22	0.150	650
KQT0402*TD4N3**		4.3			20		0.104	680			
KQT0402*TD4N7**		4.7		20		0.150			650		
KQT0402*TD5N1**		5.1			21		0.195	480			
KQT0402*TD5N6**		5.6		24		0.120			640		
KQT0402*TD6N2**		6.2			3100		0.230	500			
KQT0402*TD6N8**		6.8		24		0.202			480		
KQT0402*TD7N5**		7.5			25		0.250	450			
KQT0402*TD8N2**		8.2		24		0.214			400		
KQT0402*TD8N7**		8.7			24		0.298	340			
KQT0402*TD9N0**		9.0		24		0.350			320		
KQT0402*TD9N5**		9.5			25		0.550	320			
KQT0402*TD10N**		10		24		0.620			320		
KQT0402*TD11N**		11			25		0.810	300			
KQT0402*TD12N**		12		20		0.830			150		
KQT0402*TD13N**		13			25		0.820	240			
KQT0402*TD15N**		15		2800		1.170			200		
KQT0402*TD16N**		16			2000		1.120	150			
KQT0402*TD18N**		18		1800		1.800			150		
KQT0402*TD19N**		19			1700		2.000	150			
KQT0402*TD20N**		20		1600		2.400			150		
KQT0402*TD22N**		22			20		2.000	150			
KQT0402*TD23N**		23		20		2.400			150		
KQT0402*TD24N**		24			20		2.400	150			
KQT0402*TD27N**		27		20		2.400			150		
KQT0402*TD30N**	30	20	2.400		150						
KQT0402*TD33N**	33			20		2.400	150				
KQT0402*TD34N**	34	20	2.400		150						
KQT0402*TD36N**	36			20		2.400	150				
KQT0402*TD39N**	39	20	2.400		150						
KQT0402*TD40N**	40			20		2.400	150				
KQT0402*TD43N**	43	20	2.400		150						
KQT0402*TD47N**	47			20		2.400	150				
KQT0402*TD51N**	51	20	2.400		150						
KQT0402*TD56N**	56			20		2.400	150				
KQT0402*TD68N**	68	20	2.400		150						
KQT0402*TD82N**	82			20		2.400	150				
KQT0402*TDR10N**	100	20	2.400		150						
KQT0402*TDR12N**	120			20		2.400	150				

* Add termination material character (T, L)
 ** Add tolerance character (B, C, G, H, J, K, M)

For complete environmental specifications, please refer to pages 178-179.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

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applications and ratings (continued)

Part Designation	Marking	Nominal Inductance (nH)	L Measuring Frequency	Inductance Tolerance	Q Quality Factor Minimum	Q Measuring Frequency (MHz)	Self Resonant Frequency Minimum (MHz)	DC Resistance Maximum (Ω)	Allowable DC Current Maximum (mA)
KQ0603*TE1N6**	C	1.6	250	J: ±5% K: ±10%	24	250	12500	0.03	700
KQ0603*TE1N8**	0	1.8			16			0.045	
KQ0603*TE3N3**	X	3.3			22		6900	0.055	
KQ0603*TE3N6**	E	3.6						0.063	
KQ0603*TE3N9**	1	3.9					0.08		
KQ0603*TE4N3**	F	4.3					5900	0.063	
KQ0603*TE4N7**	G	4.7			0.116				
KQ0603*TE5N1**	Y	5.1			20		5800	0.115	
KQ0603*TE6N8**	2	6.8			27			0.11	
KQ0603*TE7N5**	H	7.5			28		4800	0.106	
KQ0603*TE8N2**	A	8.2		0.12					
KQ0603*TE8N7**	J	8.7		4600			0.109		
KQ0603*TE9N5**	B	9.5		4800			0.125		
KQ0603*TE10N**	3	10			0.13				
KQ0603*TE11N**	K	11		31	4000		0.086		
KQ0603*TE12N**	4	12		33			0.13		
KQ0603*TE15N**	5	15		35	3300		0.17		
KQ0603*TE16N**	L	16		34			0.104		
KQ0603*TE18N**	6	18		35	3100		0.17		
KQ0603*TE22N**	7	22		38	3000		0.19		
KQ0603*TE23N**	S	23	37	2700	0.15				
KQ0603*TE24N**	M	24		2650	0.135				
KQ0603*TE27N**	8	27		40	2800	0.22			
KQ0603*TE30N**	N	30		37	2250	0.144			
KQ0603*TE33N**	9	33	40	2300	0.22				
KQ0603*TE36N**	P	36	38	2080	0.25				
KQ0603*TE39N**	0	39	40	2200					
KQ0603*TE43N**	Q	43	39	2000	0.28				
KQ0603*TE47N**	1	47	200	38	200	1900	0.30		
KQ0603*TE51N**	T	51					0.31		
KQ0603*TE56N**	2	56					37	0.34	
KQ0603*TE68N**	3	68	150	34	150	1700	0.49		
KQ0603*TE72N**	4	72					0.54		
KQ0603*TE82N**	5	82		32		1400	0.58		
KQ0603*TER10**	6	100				1350	0.61		
KQ0603*TER11**	7	110	1300	0.65					
KQ0603*TER12**	8	120		1400	0.92				
KQ0603*TER15**	9	150	100	25	100	1300	2.2		
KQ0603*TER18**	0	180					1200	2.3	
KQ0603*TER20**	U	200						2.5	
KQ0603*TER21**	V	210					1000	2.4	
KQ0603*TER22**	1	220		900		2.3			
KQ0603*TER25**	W	250		24		800	3.0		
KQ0603*TER27**	2	270				700	3.7		
KQ0603*TER33**	3	330		30		100	100		
KQ0603*TER39**	4	390	80						

* Add termination material character (T, L)
 ** Add tolerance character (B, C, G, H, J, K, M)

For complete environmental specifications, please refer to pages 178-179.

applications and ratings (continued)

Part Designation	Marking	Nominal Inductance (nH)	L Measuring Frequency	Inductance Tolerance	Q Quality Factor Minimum	Q Measuring Frequency (MHz)	Self Resonant Frequency Minimum (MHz)	DC Resistance Maximum (Ω)	Allowable DC Current Maximum (mA)		
KQ0805*TE3N3**	0	3.3	250	J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$	50	1500	6000	0.08	600		
KQ0805*TE6N8**	1	6.8				1000	5500	0.11			
KQ0805*TE8N2**	2	8.2				4700	0.12				
KQ0805*TE12N**	3	12				4000	0.15				
KQ0805*TE15N**	4	15				3400	0.17				
KQ0805*TE18N**	5	18		3300	0.20	500					
KQ0805*TE22N**	6	22		2600	0.22						
KQ0805*TE27N**	7	27		2500	0.25						
KQ0805*TE33N**	8	33		2050	0.27						
KQ0805*TE39N**	9	39		2000	0.29						
KQ0805*TE47N**	0	47	1650	0.31							
KQ0805*TE56N**	1	56	1550	0.34							
KQ0805*TE68N**	2	68	1450	0.38							
KQ0805*TE82N**	3	82	1300	0.42							
KQ0805*TER10**	4	100	150	G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$	60		1200	0.46	400		
KQ0805*TER12**	5	120				1100	0.51				
KQ0805*TER15**	6	150	100		50	250	920	0.56			
KQ0805*TER18**	7	180					870	0.64			
KQ0805*TER22**	8	220					850	0.70			
KQ0805*TER27**	9	270			48		650	1.0		350	
KQ0805*TER33**	0	330					600	1.4		310	
KQ0805*TER39**	1	390					560	1.5		290	
KQ0805*TER47**	2	470	50		J: $\pm 5\%$ K: $\pm 10\%$	33	100	375		1.76	250
KQ0805*TER56**	3	560	25			23	50	340		1.9	230
KQ0805*TER68**	4	680		188				2.2	190		
KQ0805*TER82**	5	820		215				2.35	180		
KQ1008*TE10N**	10N	10		50				J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$	50	500	4100
KQ1008*TE12N**	12N	12	3300		0.09						
KQ1008*TE15N**	15N	15	3000		0.10						
KQ1008*TE18N**	18N	18	2500		0.11						
KQ1008*TE22N**	22N	22	2400		0.12						
KQ1008*TE27N**	27N	27	1600		0.13						
KQ1008*TE33N**	33N	33	350		60	1500	0.14		650		
KQ1008*TE39N**	39N	39					0.15				
KQ1008*TE47N**	47N	47					0.16				
KQ1008*TE56N**	56N	56					0.18				
KQ1008*TE68N**	68N	68		0.20							
KQ1008*TE82N**	82N	82	25	G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$	60	1300	0.22				
KQ1008*TER10**	R10	100				1000	0.56				
KQ1008*TER12**	R12	120				950	0.63				
KQ1008*TER15**	R15	150				850	0.70				
KQ1008*TER18**	R18	180				45	100	750	0.77		
KQ1008*TER22**	R22	220						700	0.84		

* Add termination material character (T, L)
** Add tolerance character (C, G, H, J, K, M)

For complete environmental specifications, please refer to pages 178-179.

applications and ratings (continued)

Part Designation	Marking	Nominal Inductance (nH)	L Measuring Frequency	Inductance Tolerance	Q Quality Factor Minimum	Q Measuring Frequency (MHz)	Self Resonant Frequency Minimum (MHz)	DC Resistance Maximum (Ω)	Allowable DC Current Maximum (mA)			
KQ1008*TER27**	R27	270	25	G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$	45	100	600	0.91	500			
KQ1008*TER33**	R33	330					570	1.05	450			
KQ1008*TER39**	R39	390					500	1.12	470			
KQ1008*TER47**	R47	470					450	1.19				
KQ1008*TER56**	R56	560					415	1.33	400			
KQ1008*TER62**	R62	620					375	1.40	300			
KQ1008*TER68**	R68	680						1.47	400			
KQ1008*TER75**	R75	750					360	1.54	360			
KQ1008*TER82**	R82	820					350	1.61	400			
KQ1008*TER91**	R91	910					320	1.68	380			
KQ1008*TE1R0**	1R0	1000					7.9	35	50	290	1.75	370
KQ1008*TE1R2**	1R2	1200								250	1.6	310
KQ1008*TE1R5**	1R5	1500						200		1.7		
KQ1008*TE1R8**	1R8	1800	28		160	1.9		270				
KQ1008*TE2R2**	2R2	2200				22		140	2.2	250		
KQ1008*TE2R7**	2R7	2700	110		25				2.7	230		
KQ1008*TE3R3**	3R3	3300				100		20	2.8			
KQ1008*TE3R9**	3R9	3900	90		3.1				210			
KQ1008*TE4R7**	4R7	4700	15		7.9	80		2.2	240			
KQ1008*TE5R6**	5R6	5600				70		2.5	200			
KQ1008*TE6R8**	6R8	6800				65		2.8	170			
KQ1008*TE8R2**	8R2	8200				60		3.2	150			
KQ1008*TE100**	100	10000										

* Add termination material character (T, L)
 ** Add tolerance character (C, G, H, J, K, M)

inductors

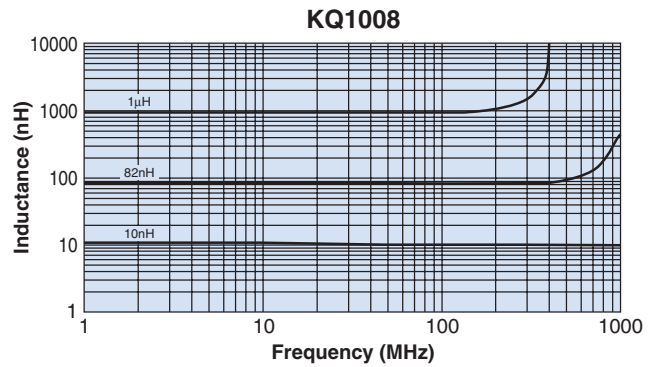
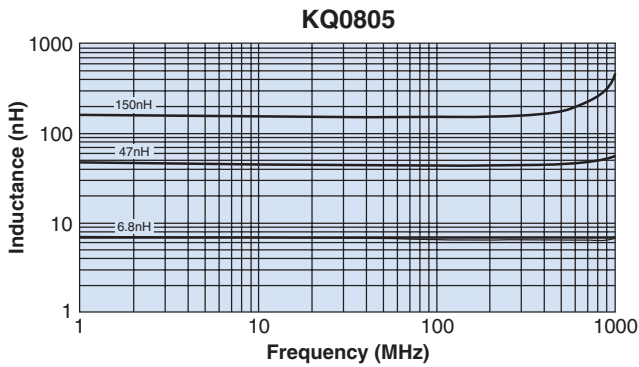
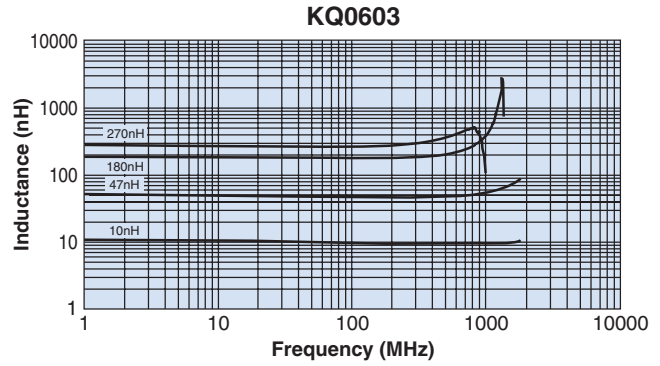
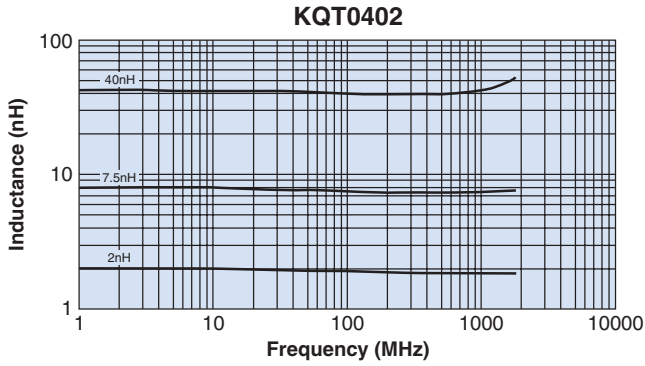
For complete environmental specifications, please refer to pages 178-179.

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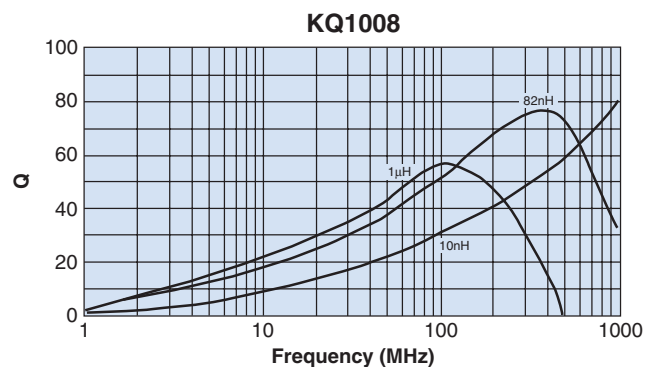
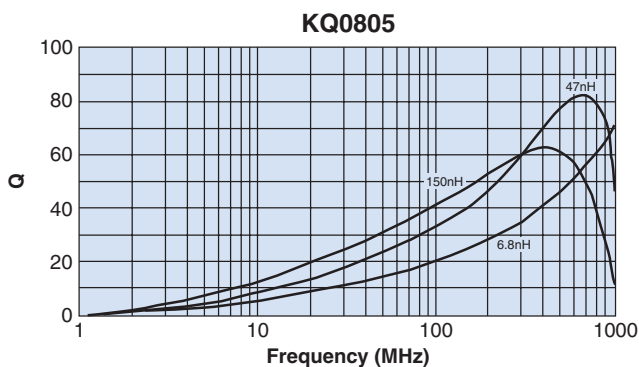
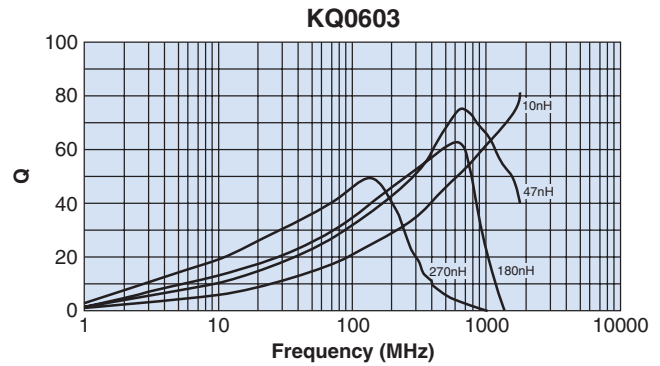
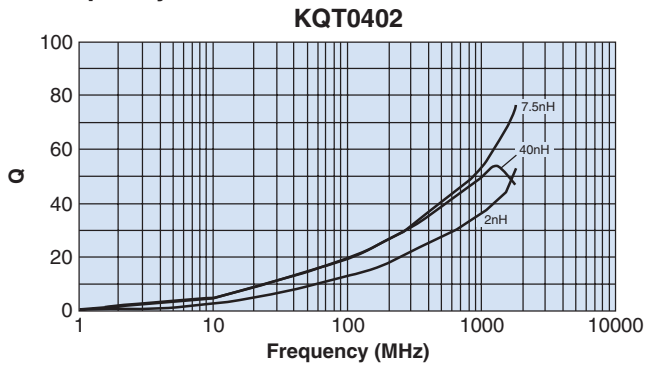
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environmental applications

L-Frequency Characteristics



Q-Frequency Characteristics



Test equipment: HP4291A impedance analyzer

environmental applications (continued)

Performance Characteristics

Parameter	Maximum Δ L	Test Method
Dielectric Withstanding Voltage	No evidence of flaming, fuming or breakdown	5 seconds @ AC 500V applied between both terminals and film
Insulation Resistance	1000M Ω and over	1 minute @ DC 100V measured between both terminals and film
Flammability	IEC 695-2-2	Withstands needle-flame test
Terminal Pull Strength	No evidence of damage	Terminals shall withstand a pull of 10N in a horizontal direction (KQ0402 and KQ0603 = 5N, KQ0805 and KQ1008 = 10N)
Terminal Bending Strength	No evidence of breakdown	Specimen shall be soldered on bend test board and force applied to the opposite side to cause a 10mm deflection (KQ0603 = 3mm deflection)
Vibration	Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	2 hours in each direction of X, Y, Z on PCB at a frequency range of 10 - 55 - 10Hz with 1.5mm amplitude
Dropping	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Dropping 1m on the ground of concrete, 1 time
Resistance to Solder Heat	No evidence of outer damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Immerse in solder @ $260^{\circ} \pm 5^{\circ}\text{C}$ for 10 seconds \pm 1 second
Solderability	95% of the terminal should be covered with new solder	Immerse in solder @ $230^{\circ} \pm 5^{\circ}\text{C}$ for 3 seconds \pm 0.5 second
Resistance to Solvents	No damage and marking must remain legible	Accordance with MIL-STD-202, Method 215
Low Temperature Storage	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Store @ $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 1000 hours
High Temperature Storage	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Store @ $+125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 1000 hours
Moisture Endurance	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	$40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 90 - 95% RH, 1000 hours KQT0402: $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 90 - 95% RH, 1000 hours
Load Life	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Biased to full rated current @ $+125^{\circ}\text{C}$, 1000 hours
High Temperature High Humidity	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	Biased to 10% rated current @ $+85^{\circ}\text{C}$, 85% RH, 1000 hours
Thermal Shock	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	100 cycles between $-40^{\circ}\text{C}/\text{hour}$ and $+125^{\circ}\text{C}/\text{hour}$
Temperature Characteristics	Δ L/L within $\pm 5\%$	Δ L/L to be measured at the temperatures between -40°C and $+125^{\circ}\text{C}$, reference to the inductance @ 20°C

Unless otherwise specified, measurements shall be performed within 2 hours after leaving test samples for more than one hour at the normal temperature and at the normal humidity.