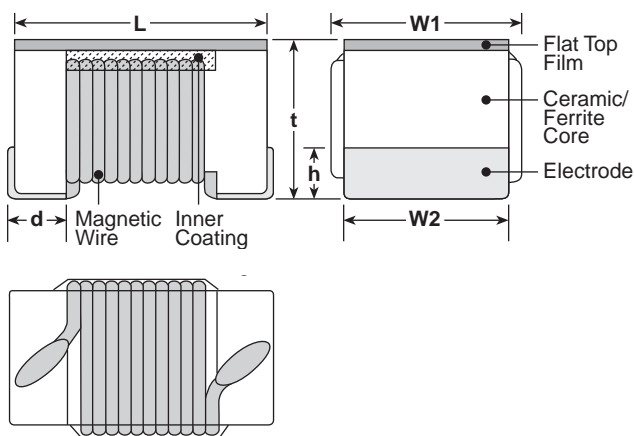


features

- 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)
- Products with lead-free terminations meet EU RoHS requirements

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 ^{+0.008} ₋₀ (1.8 ^{+0.2} ₋₀)	.018±.006 (0.45±0.15)	.018±.004 (0.45±0.1)

inductors

ordering information

New Part #	KQ	1008	T	TE	10N	J
Type	KQ KQT	Size Code 0402 0603 0805 1008	Termination Material T: Sn	Packaging TP: 2mm pitch paper (0402: 10,000 pieces/reel) TD: 7" paper tape (0402: 2,000 pieces/reel) TE: 7" embossed plastic (0603, 0805, 1008: 2,000 pieces/reel)	Nominal Resistance 10N: 10nH R10: 0.1µH 1R0: 1.0µH	Tolerance 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

Inductors

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)														
KQT0402T**1N0*	—	1.0	250	B: $\pm 0.1\text{nH}$ C: $\pm 0.2\text{nH}$	16	250	11000	0.045	1360														
KQT0402T**1N9*		1.9					19	9600	0.070	1040													
KQT0402T**2N0*		2.0									18	8000	0.068	960									
KQT0402T**2N2*		2.2													17	7200	0.120	700					
KQT0402T**2N4*		2.4																	19	6000	0.091	840	
KQT0402T**2N7*		2.7			18																		6000
KQT0402T**3N3*		3.3					20	5800	0.083	760													
KQT0402T**3N6*		3.6									22	5800	0.104	680									
KQT0402T**3N9*		3.9													20	4400	0.150	650					
KQT0402T**4N3*		4.3																	22	4200	0.104	680	
KQT0402T**4N7*		4.7		20		4160																	
KQT0402T**5N1*		5.1					21	4000	0.195	480													
KQT0402T**5N6*		5.6		24		3900					0.120	640											
KQT0402T**6N2*		6.2					25	3680	0.200	500													
KQT0402T**6N8*		6.8											24	3600	0.230	480							
KQT0402T**7N5*		7.5			25												3450	0.202	480				
KQT0402T**8N2*		8.2																		24	3280	0.172	560
KQT0402T**8N7*		8.7																					
KQT0402T**9N0*		9.0			24		3040	0.202	480														
KQT0402T**9N5*		9.5								25			3000	0.250	450								
KQT0402T**10N*		10			24		2800	0.323	400														
KQT0402T**11N*		11								25			2720	0.214	400								
KQT0402T**12N*		12		24	2700	0.322	400																
KQT0402T**13N*		13						25	2480	0.298	400												
KQT0402T**15N*		15		24	2400	0.354	400																
KQT0402T**16N*		16						25	2400	0.393	400												
KQT0402T**18N*		18		24	2400	0.550	340																
KQT0402T**19N*		19						25	2320	0.560	320												
KQT0402T**20N*		20		25	2300	0.550	300																
KQT0402T**22N*		22						24	2240	0.620	320												
KQT0402T**23N*		23		25	2200	0.810	300																
KQT0402T**24N*		24						20	2100	0.830	150												
KQT0402T**27N*		27		25	2100	0.835	240																
KQT0402T**30N*		30						22	2800	1.170	200												
KQT0402T**33N*		33		22	2000	1.120	200																
KQT0402T**34N*		34						22	1800	1.800	140												
KQT0402T**36N*		36		22	1600	2.090	130																
KQT0402T**39N*		39						22	1500	2.320	120												
KQT0402T**40N*		40		22	1500	2.320	120																
KQT0402T**43N*		43						22	1500	2.320	120												
KQT0402T**47N*	47	22	1500	2.320	120																		
KQT0402T**51N*	51					22	1500	2.320	120														
KQT0402T**56N*	56	22	1500	2.320	120																		
KQT0402T**68N*	68					22	1500	2.320	120														
KQT0402T**82N*	82	22	1500	2.320	120																		
KQT0402T**R10*	100					22	1500	2.320	120														
KQT0402T**R12*	120	22	1500	2.320	120																		

* Add tolerance character (B, C, G, H, J, K, M)

** Add packaging code

For complete environmental specifications, please refer to pages 232-233.

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)
KQ0603TTE1N6*	C	1.6	250	J: ±5% K: ±10%	24	250	12500	0.03	700
KQ0603TTE1N8*	0	1.8			16			0.045	
KQ0603TTE3N3*	X	3.3			22		6900	0.055	
KQ0603TTE3N6*	E	3.6						0.063	
KQ0603TTE3N9*	1	3.9					5900	0.08	
KQ0603TTE4N3*	F	4.3						0.063	
KQ0603TTE4N7*	G	4.7			20		5800	0.116	
KQ0603TTE5N1*	Y	5.1						0.115	
KQ0603TTE6N8*	2	6.8			27		4800	0.11	
KQ0603TTE7N5*	H	7.5						0.106	
KQ0603TTE8N2*	A	8.2		28			4600	0.12	
KQ0603TTE8N7*	J	8.7						0.109	
KQ0603TTE9N5*	B	9.5		4800			0.125		
KQ0603TTE10N*	3	10					0.13		
KQ0603TTE11N*	K	11		31			4000	0.086	
KQ0603TTE12N*	4	12						0.13	
KQ0603TTE15N*	5	15		35			3300	0.17	
KQ0603TTE16N*	L	16						0.104	
KQ0603TTE18N*	6	18		34	3100		0.17		
KQ0603TTE22N*	7	22					0.19		
KQ0603TTE23N*	S	23	38	3000	0.15				
KQ0603TTE24N*	M	24			0.135				
KQ0603TTE27N*	8	27	40	2800	0.22				
KQ0603TTE30N*	N	30			0.144				
KQ0603TTE33N*	9	33	37	2300	0.22				
KQ0603TTE36N*	P	36			0.25				
KQ0603TTE39N*	0	39	38	2080	2000	0.28			
KQ0603TTE43N*	Q	43					0.30		
KQ0603TTE47N*	1	47	40	2200	1900	0.31			
KQ0603TTE51N*	T	51					0.34		
KQ0603TTE56N*	2	56	37	1700	1700	0.49			
KQ0603TTE68N*	3	68					0.54		
KQ0603TTE72N*	4	72	34	1400	1400	0.58			
KQ0603TTE82N*	5	82					0.61		
KQ0603TTER10*	6	100	32	1350	1300	0.65			
KQ0603TTER11*	7	110					0.92		
KQ0603TTER12*	8	120	38	1400	1400	2.2			
KQ0603TTER15*	9	150					0.34		
KQ0603TTER18*	0	180	25	1300	1200	2.3			
KQ0603TTER20*	U	200					0.31		
KQ0603TTER21*	V	210	24	1000	900	2.4			
KQ0603TTER22*	1	220					0.34		
KQ0603TTER25*	W	250	30	800	800	3.0			
KQ0603TTER27*	2	270					0.37		
KQ0603TTER33*	3	330	100	700	700	3.7			
KQ0603TTER39*	4	390					0.49		
KQ0603TTER47*	5	470	50	J: ±5% K: ±10%	50	640	1.21		
KQ0603TTER51*	V	510					1.26		
KQ0603TTER56*	6	560					2.09		

NEW

* Add tolerance character (B, C, G, H, J, K, M)

For complete environmental specifications, please refer to pages 232-233.

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2/24/08

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)								
NEW	KQ0603TTER62*	W	620	50	J: $\pm 5\%$ K: $\pm 10\%$	30	50	590	1.89	150							
	KQ0603TTER68*	7	680					540	1.97	140							
	KQ0603TTER75*	X	750					530	2.04	130							
	KQ0603TTER82*	8	820					490	3.09	110							
	KQ0603TTER91*	Y	910					480	2.95	120							
	KQ0603TTE1R0*	9	1000					440	5.13	90							
	KQ0603TTE1R2*	0	1200					400	5.45	80							
NEW	KQ0805TTE3N3*	0	3.3	250	50	50	1500	6000	0.08	600							
	KQ0805TTE6N8*	1	6.8				1000	5500	0.11								
	KQ0805TTE8N2*	2	8.2				4700	0.12									
	KQ0805TTE12N*	3	12				4000	0.15									
	KQ0805TTE15N*	4	15				3400	0.17									
	KQ0805TTE18N*	5	18				3300	0.20									
	KQ0805TTE20N*	Y	20				500	60	55		2600	0.22	500				
	KQ0805TTE22N*	6	22								2500	0.25					
	KQ0805TTE27N*	7	27								2050	0.27					
	KQ0805TTE33N*	8	33								2000	0.29					
KQ0805TTE39N*	9	39	200	60	65	1650				0.34	400						
KQ0805TTE43N*	4	43				1550				0.31							
KQ0805TTE47N*	0	47				1550				0.34							
KQ0805TTE56N*	1	56				1450				0.38							
KQ0805TTE68N*	2	68				1300				0.42							
KQ0805TTE82N*	3	82				1200				0.46							
KQ0805TTER10*	4	100				100	50	50	1100	0.51		350					
KQ0805TTER12*	5	120							920	0.56							
KQ0805TTER15*	6	150							250	48			870	0.64	400		
KQ0805TTER16*	H	160															
KQ0805TTER17*	J	170															
KQ0805TTER18*	7	180															
KQ0805TTER19*	D	190															
KQ0805TTER20*	E	200															
KQ0805TTER21*	F	210															
KQ0805TTER22*	8	220															
KQ0805TTER23*	K	230															
KQ0805TTER24*	L	240															
KQ0805TTER25*	G	250	50	J: $\pm 5\%$ K: $\pm 10\%$	33	100	650	1.0	310								
KQ0805TTER27*	9	270					600	1.4									
KQ0805TTER33*	0	330					560	1.5									
KQ0805TTER39*	1	390					375	1.76									
KQ0805TTER47*	2	470					340	1.9									
KQ0805TTER56*	3	560					25	23		50	188	2.2	230				
KQ0805TTER68*	4	680									215	2.35					
KQ0805TTER82*	5	820									4100	0.08		1000			
KQ1008TTE10N*	10N	10									50	J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$			50	3300	0.09
KQ1008TTE12N*	12N	12														3000	0.10
KQ1008TTE15N*	15N	15	350	2500	0.11												
KQ1008TTE18N*	18N	18															

* Add tolerance character (C, G, H, J, K, M)

For complete environmental specifications, please refer to pages 232-233.

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)
KQ1008TTE22N*	22N	22	50	J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$	55	350	2400	0.12	1000
KQ1008TTE27N*	27N	27					60	1600	
KQ1008TTE33N*	33N	33			65			1500	
KQ1008TTE39N*	39N	39					60		
KQ1008TTE47N*	47N	47			65			0.16	
KQ1008TTE56N*	56N	56					60	1300	
KQ1008TTE68N*	68N	68			60			1000	
KQ1008TTE82N*	82N	82					60	950	
KQ1008TTER10*	R10	100	25	G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$	45	100		0.56	650
KQ1008TTER12*	R12	120					850	0.63	
KQ1008TTER15*	R15	150					750	0.70	
KQ1008TTER18*	R18	180					700	0.77	
KQ1008TTER22*	R22	220					600	0.84	
KQ1008TTER27*	R27	270					500	0.91	
KQ1008TTER33*	R33	330					570	1.05	
KQ1008TTER39*	R39	390					500	1.12	
KQ1008TTER47*	R47	470					450	1.19	
KQ1008TTER56*	R56	560					415	1.33	
KQ1008TTER62*	R62	620					375	1.40	
KQ1008TTER68*	R68	680					375	1.47	
KQ1008TTER75*	R75	750					360	1.54	
KQ1008TTER82*	R82	820					350	1.61	
KQ1008TTER91*	R91	910					320	1.68	
KQ1008TTE1R0*	1R0	1000					35	50	1.75
KQ1008TTE1R2*	1R2	1200	290	1.6					
KQ1008TTE1R5*	1R5	1500	28	50	1.7	310			
KQ1008TTE1R8*	1R8	1800			200		1.9		
KQ1008TTE2R2*	2R2	2200	22	25	160	250			
KQ1008TTE2R7*	2R7	2700			140		2.2		
KQ1008TTE3R3*	3R3	3300	20	25	110	230			
KQ1008TTE3R9*	3R9	3900			100		2.7		
KQ1008TTE4R7*	4R7	4700	15	7.9	90	210			
KQ1008TTE5R6*	5R6	5600			80		2.8		
KQ1008TTE6R8*	6R8	6800			70		3.1		
KQ1008TTE8R2*	8R2	8200			65		2.2		
KQ1008TTE100*	100	10000			60	240	2.5	200	
							3.2	170	
								3.2	150

* Add tolerance character (C, G, H, J, K, M)

inductors

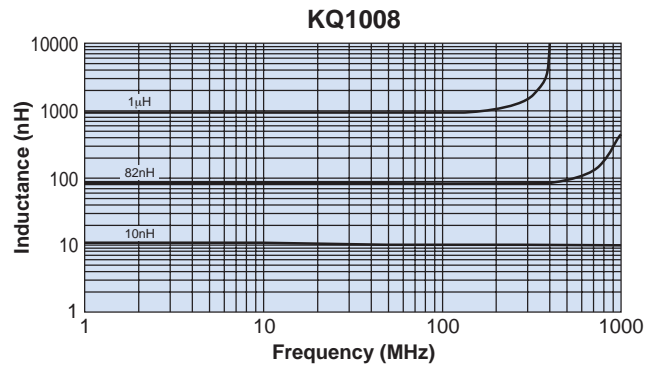
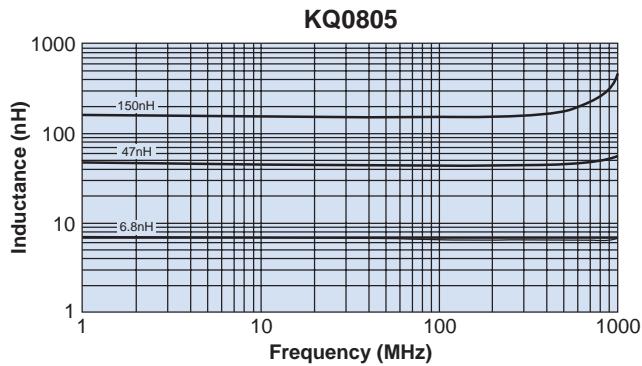
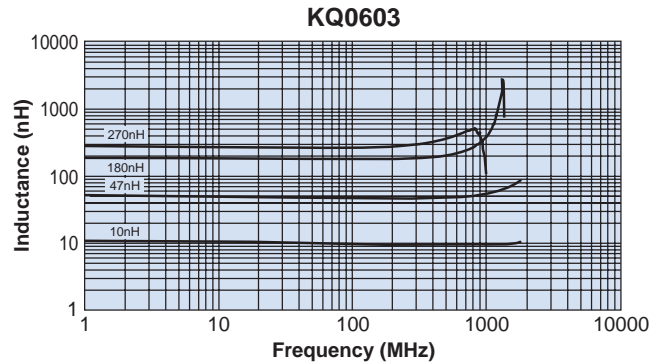
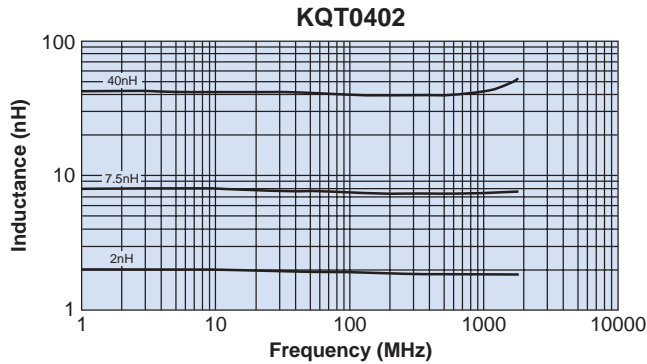
For complete environmental specifications, please refer to pages 232-233.

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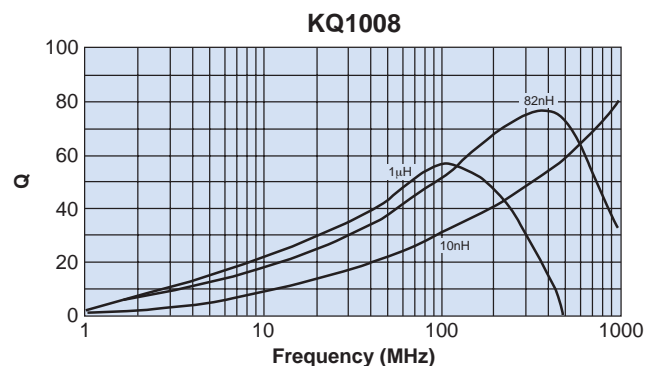
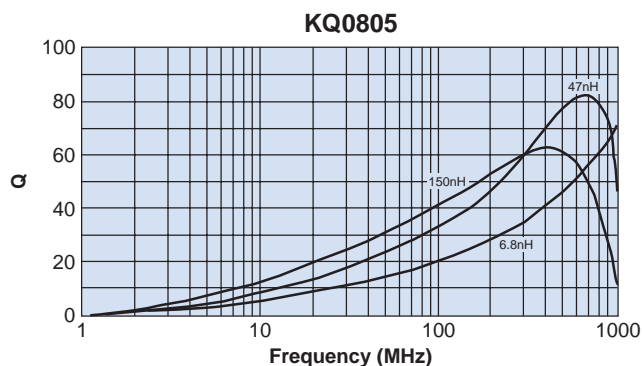
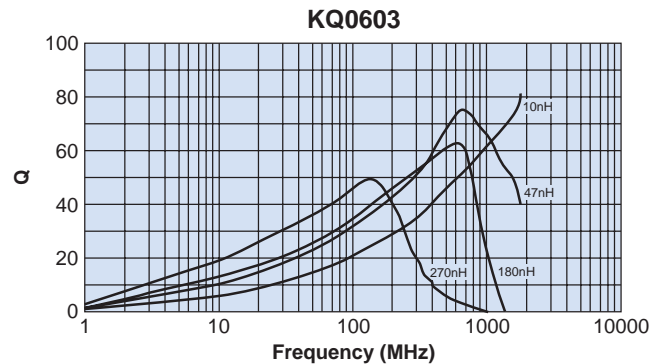
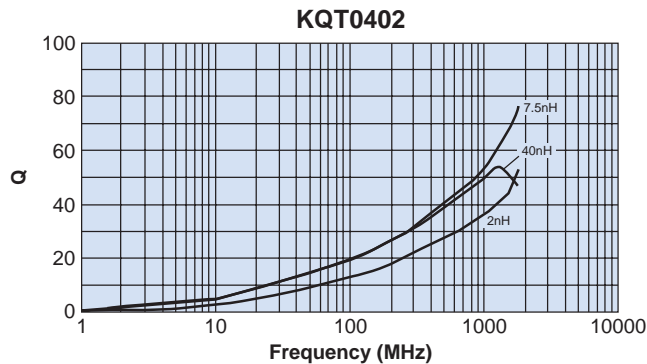
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environmental applications

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° \pm 5°C for 10 seconds \pm 1 second
Solderability	95% of the terminal should be covered with new solder	Immerse in solder @ 230° \pm 5°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°C \pm 2°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°C \pm 2°C for 1000 hours
Moisture Endurance	No evidence of damage Δ L/L within $\pm 5\%$ Δ Q/Q within $\pm 10\%$	40°C \pm 2°C, 90 - 95% RH, 1000 hours KQT0402: 60°C \pm 2°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°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°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°C/hour and +125°C/hour
Temperature Characteristics	Δ L/L within $\pm 5\%$	Δ L/L to be measured at the temperatures between -40°C and +125°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.