



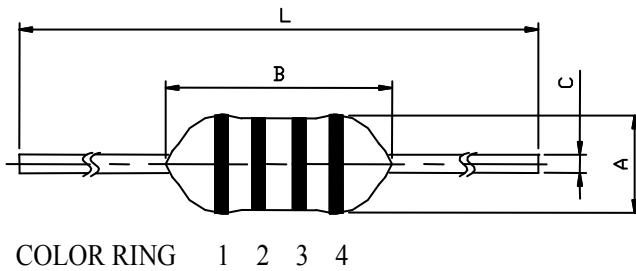
FIXED INDUCTORS

TYPE

CEC

SPECIFICATION

1. DIMENSION (UNIT: mm)



A	3.2 Max.
B	7.0 Max.
C	0.50 ± 0.05 (0.1 ~ 18μH) 0.48 ± 0.05 (22 ~ 1000μH)
L	63.0 ± 3.0

* THE LENGTH OF THE TERMINAL PINS DOES NOT INCLUDE SOLDER TIP.

2. CIRCUIT



3. MARKING

COLOR	FIRST FIGURE 1	SECOND FIGURE 2	MULTIPLIER 3	TOLERANCE 4
BLACK	0	0	1	± 20%
BROWN	1	1	10	-
RED	2	2	100	-
ORANGE	3	3	1000	-
YELLOW	4	4	-	-
GREEN	5	5	-	-
BLUE	6	6	-	-
VIOLET	7	7	-	-
GRAY	8	8	-	-
WHITE	9	9	-	-
GOLD	-	-	0.1	± 5%
SILVER	-	-	0.01	± 10%

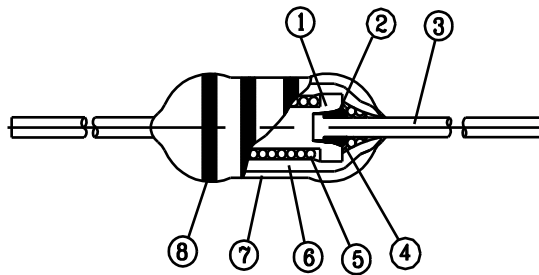


FIXED INDUCTORS

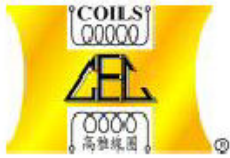
TYPE

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4. CONSTRUCTION:



No.	NAME	MATERIAL
1	CORE	FERRITE CORE CM11, CM9D, CL9H OR EQUIVALENT
2	ADHESIVE	EPOXY RESIN
3	LEAD WIRE	SOLDER PLATED COPPER WIRE
4	SOLDER	H60A
5	WIRE	POLYURETHANE ENAMELLED COPPER WIRE
6	UNDER-COATING RESIN	BUTADIENE RESIN
7	OVER-COATING RESIN	EPOXY RESIN
8	COLOR CODE	MELAMINE RESIN



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5. GENERAL CHARACTERISTICS

* STANDARD TESTING CONDITIONS:

UNLESS OTHERWISE SPECIFIED, THE STANDARD RANGE OF ATMOSPHERIC CONDITIONS FOR MEASUREMENTS AND TESTS ARE AS FOLLOWS: AMBIENT TEMPERATURE: 15°C~35°C. RELATIVE HUMIDITY: 25%~85%. AIR PRESSURE: 86kPa~106kPa.

IF THERE IS ANY DOUBT ABOUT THE RESULTS, MEASUREMENT SHALL BE MADE WITHIN THE FOLLOWING LIMITS: AMBIENT TEMPERATURE: 20°C±1°C. RELATIVE HUMIDITY: 63%~67%. AIR PRESSURE: 86kPa~106kPa.

No.	ITEMS	TEST CONDITIONS	SPECIFICATION						
1	OPERATION TEMPERATURE STORAGE TEMPERATURE		-25 ~ +85°C (INCLUDING COIL TEMPERATURE RISE) -40 ~ +85°C						
2	LEAD TERMINAL STRENGTH	PULLING	NO TERMINAL BREAKAGE OR LOOSENING.						
		BENDING		LOAD WITH 3.0N AND 90° BENDING AND STRAIGHTENING TWICE IN TWO DIRECTIONS (UPWARD & DOWNWARD)					
3	DIELECTRIC WITHSTAND VOLTAGE TEST	D.C.500V APPLIED BETWEEN WINDING-BODY FOR 1 MINUTE.	NO DIELECTRIC DAMAGE						
4	INSULATION RESISTANCE TEST	D.C.500V APPLIED BETWEEN WINDING-BODY FOR 1 MINUTE.	OVER 100 MΩ						
5	OVER CURRENT TEST	INPUT 2 TIMES OF RATED INTO THE SAMPLE FOR 5 MINUTES.	NO FIRE OR ANY ABNORMALITY						
6	RESISTANCE TO SOLDERING HEAT TEST	FIX THE SAMPLES ON A 1.6MM THICKNESS PCB, THEN DIP THE SAMPLE LEADS UP TO THE PCB INTO A SOLDERING BATH OF 260±5°C FOR 5±1 SECONDS.	NO MECHANICAL BREAKAGE. DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ± 3.0% QU: WITHIN ± 20%						
7	SOLDER ABILITY TEST	IMMERSE THE TERMINAL IN FLUX FOR 5 SECONDS. THEN DIP THE TERMINAL INTO A SOLDERING BATH OF 235 ± 5°C FOR 2 ± 0.5 SECONDS.	OVER 90% OF THE SURFACE BEING IMMERSSED SHALL BE COVERED WITH NEW SOLDER UNIFORMLY.						
8	VIBRATION TEST	AMPLITUDE: 1.5MM P-P FREQUENCY:10 ~ 55 ~ 10HZ (1 MINUTE PER CYCLE) DURATION: 2 HOURS IN EACH OF X.Y.Z AXIS. (TOTAL 6 HOURS)	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ± 1.0% QU: WITHIN ± 20%						
9	SHOCK TEST	PEAK ACCELERATION: 981M/S ² DURATION OF PULSE: 10MS SHOCK TIMES: 3 TIMES IN EACH OF X, Y, Z AXIS. (TOTAL 9 TIMES)	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ± 1.0% QU: WITHIN ± 20%						
10	HUMIDITY TEST	TEMPERATURE: 40°C ± 2°C HUMIDITY: 90% ~ 95%RH DURATION: 500 ± 12 HOURS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ± 10% QU: WITHIN ± 20%						
11	DRY HEAT TEST	TEMPERATURE: 85°C ± 2°C DURATION: 500 ± 12 HOURS.							
12	COLD TEST	TEMPERATURE: -25°C ± 3°C DURATION: 500 ± 12 HOURS.							
13	DRY HEAT WITH LOAD	TEMPERATURE: 85°C ± 2°C LOAD CONDITION: RATED CURRENT DURATION: 500 ± 12 HOURS.							
14	DAMP HEAT WITH LOAD	TEMPERATURE: 40°C ± 2°C HUMIDITY: 90% ~ 95%RH LOAD CONDITION: RATED CURRENT DURATION: 500 ± 12 HOURS.							
15	THERMAL SHOCK	5 CONTINUOUS CYCLES SHOWN AS BELOW <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>TEMPERATURE</th> <th>DURATION</th> </tr> </thead> <tbody> <tr> <td>-25°C ± 3°C</td> <td>30 MINUTES</td> </tr> <tr> <td>85°C ± 3°C</td> <td>30 MINUTES</td> </tr> </tbody> </table>	TEMPERATURE	DURATION	-25°C ± 3°C	30 MINUTES	85°C ± 3°C	30 MINUTES	
TEMPERATURE	DURATION								
-25°C ± 3°C	30 MINUTES								
85°C ± 3°C	30 MINUTES								



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6. ELECTRICAL CHARACTERISTICS

No.	PART NO.	L (μ H)	L TOLERANCE	Q Min.	D.C.R. (Ω) Max.	RATED CURRENT		S.R.F. (MHz) Min.	MEASURING FREQUENCY (MHz)	MATERIAL
						Max. (A)				
						Idc1	Idc2			
01	CEC-R10□	0.10	M, K	60	0.070	2.72	1.18	220	25.2	CM11
02	CEC-R12□	0.12			0.080	2.69	1.02	200		
03	CEC-R15□	0.15			0.085	2.64	0.91	185		
04	CEC-R18□	0.18		0.090	2.62	0.78	180			
05	CEC-R22□	0.22		0.103	2.60	0.75	170			
06	CEC-R27□	0.27		0.110	2.58	0.70	165			
07	CEC-R33□	0.33		0.120	2.55	0.68	160			
08	CEC-R39□	0.39		0.13	2.52	0.65	155			
09	CEC-R47□	0.47		0.14	2.33	0.64	150			
10	CEC-R56□	0.56		0.15	2.24	0.63	150			
11	CEC-R68□	0.68		0.17	2.21	0.62	150			
12	CEC-R82□	0.82		0.19	2.00	0.61	150			
13	CEC-1R0□	1.0	M, K, J	50	0.22	1.82	0.59	150	7.96	CM9D
14	CEC-1R2□	1.2			0.23	1.81	0.57	145		
15	CEC-1R5□	1.5			0.25	1.75	0.565	140		
16	CEC-1R8□	1.8			0.27	1.39	0.555	138		
17	CEC-2R2□	2.2			0.30	1.15	0.515	110		
18	CEC-2R7□	2.7			0.33	1.12	0.505	100		
19	CEC-3R3□	3.3		0.50	1.06	0.365	100			
20	CEC-3R9□	3.9		0.59	1.01	0.350	90			
21	CEC-4R7□	4.7		60	1.12	0.91	0.260	84	2.52	
22	CEC-5R6□	5.6			1.16	0.84	0.235	65		
23	CEC-6R8□	6.8			1.29	0.74	0.230	60		
24	CEC-8R2□	8.2			1.39	0.73	0.215	58		
25	CEC-100□	10	1.56		0.67	0.210	28.7			
26	CEC-120□	12	1.64		0.60	0.200	18.9			
27	CEC-150□	15	50	1.85	0.56	0.190	16.8			
28	CEC-180□	18		1.94	0.52	0.185	12.8			
29	CEC-220□	22		2.24	0.48	0.160	10.4			
30	CEC-270□	27		2.39	0.41	0.155	10.2			
31	CEC-330□	33		2.71	0.38	0.150	8.4			



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ELECTRICAL CHARACTERISTICS

No.	PART NO.	L (μ H)	L TOLERANCE	Q Min.	D.C.R. (Ω) Max.	RATED CURRENT		S.R.F. (MHz) Min.	MEASURING FREQUENCY (MHz)	MATERIAL
						Max. (A)				
						Idc1	Idc2			
32	CEC-390□	39	M, K, J	50	3.00	0.36	0.145	7.4	2.52	CM9D
33	CEC-470□	47			3.30	0.33	0.135	6.9		
34	CEC-560□	56			3.85	0.32	0.135	6.6		
35	CEC-680□	68			4.07	0.27	0.125	6.1		
36	CEC-820□	82		45	4.62	0.24	0.125	5.4	0.796	CL9H
37	CEC-101□	100			4.98	0.24	0.110	5.0		
38	CEC-121□	120			5.45	0.23	0.110	4.3		
39	CEC-151□	150			5.83	0.22	0.10	4.3		
40	CEC-181□	180			8.46	0.20	0.095	3.4		
41	CEC-221□	220			9.23	0.18	0.090	3.3		
42	CEC-271□	270			11.7	0.15	0.085	2.9		
43	CEC-331□	330			13.2	0.14	0.075	2.7		
44	CEC-391□	390			19.9	0.13	0.060	2.3		
45	CEC-471□	470			21.4	0.12	0.055	2.2		
46	CEC-561□	560			22.8	0.11	0.055	2.1		
47	CEC-681□	680			25.2	0.10	0.050	1.9		
48	CEC-821□	820			28.4	0.09	0.045	1.7		
49	CEC-102□	1000			31.3	0.08	0.045	1.5		

* □: M: $\pm 20\%$, K: $\pm 10\%$, J: $\pm 5\%$

- TESTING INSTRUMENT

INDUCTANCE & Q: HP 4285A OR EQUIVALENT.

D.C.R.: KEITHLEY 580 MICRO OHM METER OR EQUIVALENT.

RATED CURRENT: HP 4284A, HP42841A, HP E3632A, HP 34401A OR EQUIVALENT.

S.R.F.: HP 4395A, HP4285A OR EQUIVALENT.

* Idc1: THE CURRENT WHEN THE INDUCTANCE DECREASES TO 90% OF INITIAL VALUE ($T_a=25^\circ\text{C}$).

* Idc2: THE CURRENT WHEN THE TEMPERATURE OF COIL IS INCREASED BY 20°C ($T_a=25^\circ\text{C}$).

* THE RATED CURRENT INDICATES THE SMALLER ONE BETWEEN Idc1 AND Idc2.