



RF Inductors

Molded Type Chip Wirewound Inductor - EC Series / 模压型贴片绕线电感器

► Features

- Lead-free materials is used for the plating on the terminals.
- The product uses metal terminals, which realize excellent connection reliability.
- High resistance to heat, humidity, mechanical shocks and presser. Accurate dimensions for automatically surface mounted.
- The product has good heat durability that withstands lead-free compatible reflow soldering conditions.

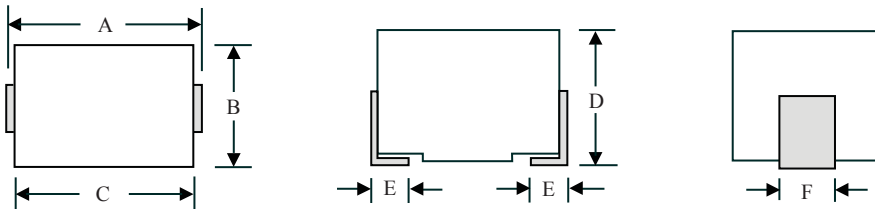
► Applications

- TCEC serials high reliable wire would chip inductors for communication, equipment, instrument, video & audio have been developed in response to the trend toward higher density mounting of parts in electric circuits.

► Operating temperature

- Range: -25 ~ +85 °C.

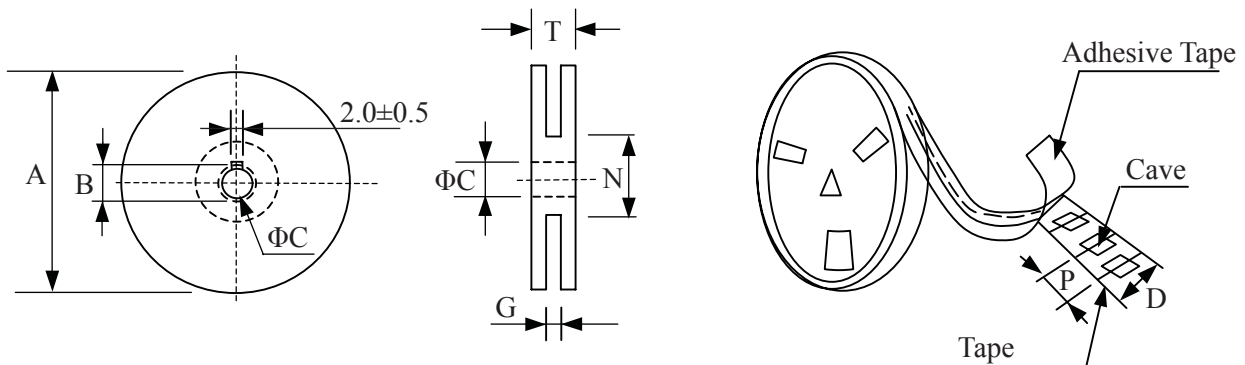
► Chip Wirewound Inductor Configurations & Dimensions (unit: mm)



Type	A	B	C	D	E	F
TCEC322522N(1210)	3.2 ± 0.4	2.5 ± 0.2	2.9 ± 0.3	2.2 ± 0.2	0.6 ± 0.2	1.0 ± 0.2
TCEC453232N(1812)	4.5 ± 0.4	3.2 ± 0.2	4.2 ± 0.3	3.2 ± 0.2	1.0 ± 0.2	1.2 ± 0.2

► Packaging - Chip Wirewound Inductors

TYPE	A	B	C	D	G	N	T
8mm	178	21.0±0.8	13.0±0.5	8	10 max	50 min	14.4 max
12mm	178	21.0±0.8	13.0±0.5	10	14 max	50 min	14.4 max





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► Electrical Characteristics for TCEC322522N(1210) Series - Chip Wirewound Inductors

Part No.	Inductance (μ H)	Q (min)	Test Freq. (MHZ)	SRF (MHz)(min)	DCR (Ω)(max)	IDC (mA)
TCEC322522N - 1R0M	1.0 \pm 20%	10	7.96	100	0.156	770
TCEC322522N - 1R5M	1.5 \pm 20%	10	7.96	80	0.195	580
TCEC322522N - 2R2M	2.2 \pm 20%	10	7.96	65	0.260	480
TCEC322522N - 3R3M	3.3 \pm 20%	10	7.96	55	0.325	400
TCEC322522N - 4R7M	4.7 \pm 20%	10	7.96	45	0.520	320
TCEC322522N - 6R8M	6.8 \pm 20%	10	7.96	35	0.650	280
TCEC322522N - 100K	10 \pm 10%	15	2.52	28	1.105	220
TCEC322522N - 150K	15 \pm 10%	15	2.52	25	1.690	180
TCEC322522N - 220K	22 \pm 10%	15	2.52	20	2.600	145
TCEC322522N - 330K	33 \pm 10%	15	2.52	15	3.640	115
TCEC322522N - 390K	39 \pm 10%	15	2.52	14	4.500	110
TCEC322522N - 470K	47 \pm 10%	15	2.52	13	5.460	105
TCEC322522N - 680K	68 \pm 10%	15	2.52	10	8.450	85
TCEC322522N - 820K	82 \pm 10%	15	2.52	9	8.710	80
TCEC322522N - 101K	100 \pm 10%	15	0.796	8	10.14	75

Note: Test equipment L, Q: HP4285A +16034E, or equivalent
SRF: HP8753C NETWORK ANALYZER, or equivalent.
DC resistance: AX-111A DIGITAL MILLIOHM METER, or equivalent.





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► Electrical Characteristics for TCEC453232N(1812) Series

Part No.	Inductance (μ H)	Q (min)	Test Freq. (MHZ)	SRF (MHz)(min)	DCR (Ω)(max)	IDC (mA)
TCEC453232N - 1R0K	1.0 \pm 10%	10	7.96	180	0.11	1050
TCEC453232N - 1R2K	1.2 \pm 10%	10	7.96	160	0.12	1000
TCEC453232N - 1R5K	1.5 \pm 10%	10	7.96	130	0.15	950
TCEC453232N - 1R8K	1.8 \pm 10%	10	7.96	100	0.16	900
TCEC453232N - 2R2K	2.2 \pm 10%	10	7.96	80	0.18	850
TCEC453232N - 2R7K	2.7 \pm 10%	10	7.96	60	0.20	800
TCEC453232N - 3R3K	3.3 \pm 10%	10	7.96	45	0.22	750
TCEC453232N - 3R9K	3.9 \pm 10%	10	7.96	40	0.24	700
TCEC453232N - 4R7K	4.7 \pm 10%	10	7.96	35	0.27	650
TCEC453232N - 5R6K	5.6 \pm 10%	10	7.96	30	0.30	650
TCEC453232N - 6R8K	6.8 \pm 10%	10	7.96	28	0.35	600
TCEC453232N - 8R2K	8.2 \pm 10%	10	7.96	25	0.40	600
TCEC453232N - 100K	10 \pm 10%	10	2.52	22	0.50	550
TCEC453232N - 120K	12 \pm 10%	10	2.52	21	0.60	500
TCEC453232N - 150K	15 \pm 10%	10	2.52	20	0.70	450
TCEC453232N - 180K	18 \pm 10%	10	2.52	19	0.80	400
TCEC453232N - 220K	22 \pm 10%	10	2.52	18	0.90	370
TCEC453232N - 270K	27 \pm 10%	10	2.52	16	1.20	330
TCEC453232N - 330K	33 \pm 10%	10	2.52	14	1.40	300
TCEC453232N - 390K	39 \pm 10%	10	2.52	12	1.60	280
TCEC453232N - 470K	47 \pm 10%	10	2.52	11.5	1.90	260
TCEC453232N - 560K	56 \pm 10%	10	2.52	11	2.20	240
TCEC453232N - 680K	68 \pm 10%	10	2.52	10	2.60	220
TCEC453232N - 820K	82 \pm 10%	10	2.52	9	3.50	200
TCEC453232N - 101K	100 \pm 10%	20	0.796	8	4.00	180
TCEC453232N - 121K	120 \pm 10%	20	0.796	7.5	4.50	160
TCEC453232N - 151K	150 \pm 10%	20	0.796	7	6.50	140
TCEC453232N - 181K	180 \pm 10%	20	0.796	6.5	7.50	120
TCEC453232N - 221K	220 \pm 10%	20	0.796	5.5	9.00	120
TCEC453232N - 271K	270 \pm 10%	20	0.796	5	11.0	100
TCEC453232N - 331K	330 \pm 10%	20	0.796	4	13.0	90

Note: Test equipment L, Q: HP4285A +16034E, or equivalent
SRF: HP8753C NETWORK ANALYZER, or equivalent.
DC resistance: AX-111A DIGITAL MILLIOHM METER, or equivalent.



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► Chip Wirewound Inductor Mechanical Performance Test

REQUIREMENTS	CHARACTERISTICS	TEST METHOD(DIS C 5321)
Terminal Strength	No evidence of damage	Terminals shall withstand a pull of 0.5Kgf in a horizoninal direction
Vibration	$\Delta L/L$ shall be within $\pm 3\%$. No evidence of damage	2 hours in each direction of X,Y,Z on p-Board at a frequency range of 10-55-10HZ with 1.5mm amplitude
Dropping	$\Delta L/L$ shall be within $\pm 3\%$. No evidence of damage	Dropping 1m over the ground of concete or cement

► Chip Wirewound Inductor Electrical Performance Test

REQUIREMENTS	CHARACTERISTICS	TEST METHOD(JIS C 5321)
Resistance to Soldering Heat	No evidence of damage $\Delta L/L$ shall be within $\pm 3\%$	Immerse in the solder (H63A) of $260 \pm 5^\circ\text{C}$ for 10 ± 1 sec, leave for 2hrs at normal TEMP
Solderability	More than 90% surface to be covered with new soldering	AV100V 60 SEC.
Dielectric with standing voltage	No veridence of breakdown resistor 1000 Mohm and over	DC500V 30 SEC.
Insulation Resistance	No veidence of breakdown, resistor 1000 Mohm and over	DC 500V 30 SEC.

► Chip Wirewound Inductor Climatic Test

REQUIREMENTS	CHARACTERISTICS	TEST METHOD(JIS C 5321)
LOW TEMP. Characteristics	No evidence of damage, $\Delta L/L$ within $\pm 5\%$, Q/Q within $\pm 30\%$	Immerse in the solder (H63A)of $260 \pm 5^\circ\text{C}$ for 10 ± 1 sec, leave for 2hrs at normal TEMP.
TEMP. Cycling	No evidence of damage, $\Delta L/L$ within ± 5	Keep for 30 min. at TEMP.of $-25^\circ\text{C} \sim +85^\circ$ Cat 5 cycle case of TEMP. change from low to high and V.V.
Temperature Characteristics	$\Delta L/L$ within $\pm 3\%$	$\Delta L/L$ to be measured at the temperature of between -25°C and $+85^\circ\text{C}$
Moiisture load Characteristics	No evidence of damage, $\Delta L/L$ within $\pm 5\%$, Q/Q within ± 30	TEMP. $40 \pm 2^\circ\text{C}$,Humidity 90~95% 96 ± 2 hrs, measurements shall be performed after 1~2hrs at normal TEMP..
High TEMP. overload Characteristics	No evidence of damage, $\Delta L/L$ within $\pm 5\%$,Q/Q within ± 30	Leave for 96 ± 2 hrs in a bath of TEMP. $85 \pm 2^\circ\text{C}$,measurements shall be performed after 1~2hrs at normal TEMP.

► How to Order

TCEC322522N - 1R0 M

① ② ③

① Chip Inductors Wirewound Molded Type: TCEC322522N, TCEC453232N

② Inductance

Code	Inductance
R10	0.10 μH
1R0	1.00 μH
100	10.00 $\times 10^0\mu\text{H}$
101	10.00 $\times 10^1\mu\text{H}$
102	10.00 $\times 10^2\mu\text{H}$
103	10.00 $\times 10^3\mu\text{H}$

③ Tolerance

Code	Tolerance
K	10%
M	20%