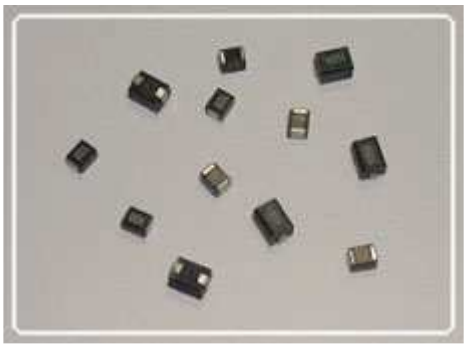
- **Wire Wound Chip Inductor (1210, 1812)**

Ordering Code:



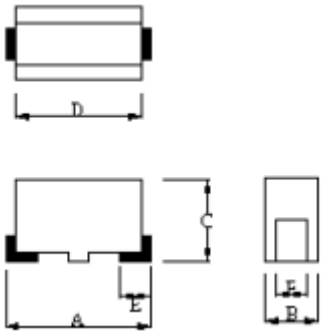
WHC- 322513 - 3R3 K
(1) (2) (3) (4)

(1) Type
(2) Dimensions
(3) Inductance
(4) Tolerance (J=±5%, K=±10%, M=±20%)

Application:

1. Computer products (Hard Disks, Floppy Disks…etc.)
2. Communication products (Cordless Phones… etc.)
3. Modems, OA products, TV sets, VCRs… etc.)
4. Countermeasures for complying with CE, FCC, VDE or VCCI radiated emissions.

Features:



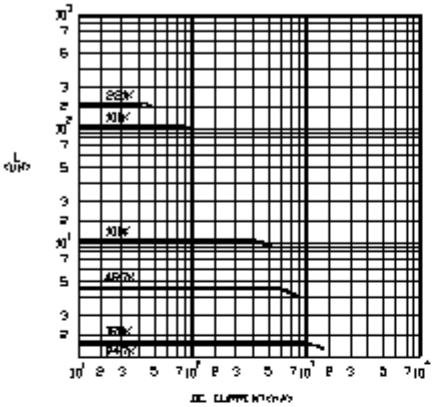
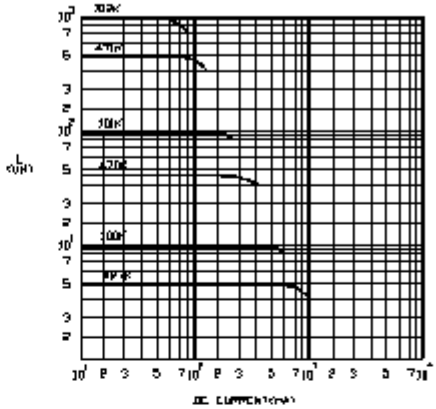
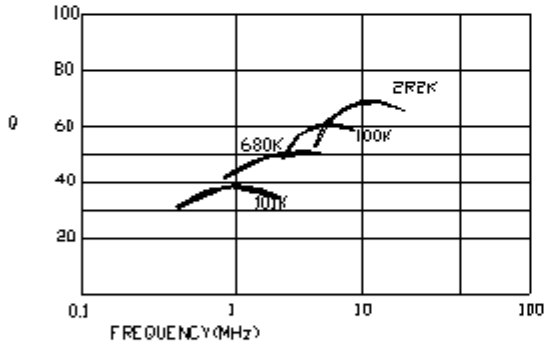
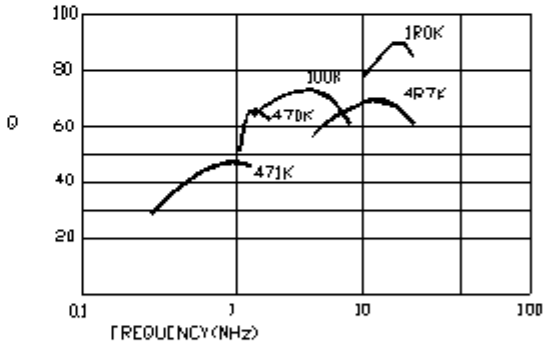
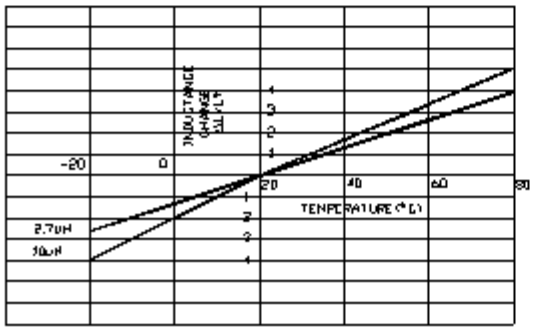
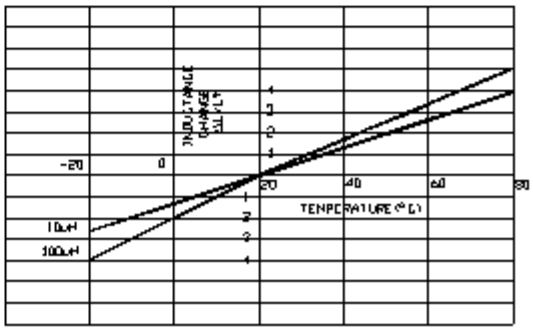
Shape & Dimensions:

Unit: m/m

Type	A	B	C	D	E	F
WHC-322522-xxxx (1210)	3.20±0.30	2.50±0.20	2.20±0.20	2.90±0.20	0.6	1.0
WHC-453232-xxxx (1812)	4.50±0.30	3.20±0.20	3.20±0.20	4.20±0.20	1.0	1.2

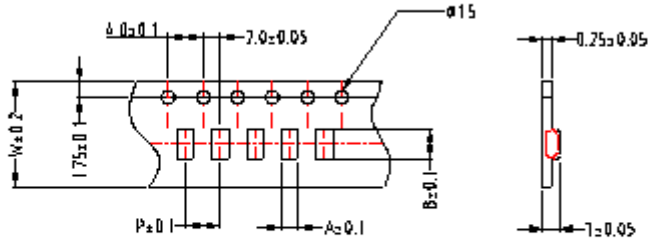
Part Numbers	Inductance (uH)	Q Min.	Test Freq. (MHz)	SRF MHz (Min)	Rdc Ohms (Max)	Idc (mA)
WHC-322522-R12M	0.12±20%	30	25.2	500	0.22	450
WHC-322522-R15M	0.15±20%	30	25.2	450	0.25	450
WHC-322522-R18M	0.18±20%	30	25.2	400	0.28	450
WHC-322522-R22M	0.22±20%	30	25.2	350	0.32	450
WHC-322522-R27M	0.27±20%	30	25.2	320	0.36	450
WHC-322522-R33M	0.33±20%	30	25.2	300	0.40	450
WHC-322522-R39M	0.39±20%	30	25.2	250	0.45	450
WHC-322522-R47M	0.47±20%	30	25.2	220	0.50	450
WHC-322522-R56M	0.56±20%	30	25.2	180	0.55	450
WHC-322522-R68M	0.68±20%	30	25.2	160	0.60	450
WHC-322522-R82M	0.82±20%	30	25.2	140	0.65	450
WHC-322522-1R0M	1.0±20%	30	7.96	120	0.70	400
WHC-322522-1R2M	1.2±20%	30	7.96	100	0.75	390
WHC-322522-1R5M	1.5±20%	30	7.96	85	0.85	370
WHC-322522-1R8M	1.8±20%	30	7.96	80	0.90	350
WHC-322522-2R2M	2.2±20%	30	7.96	75	1.00	320
WHC-322522-2R7M	2.7±20%	30	7.96	70	1.10	290
WHC-322522-3R3K	3.3±10%	30	7.96	60	1.20	260
WHC-322522-3R9K	3.9±10%	30	7.96	55	1.30	250
WHC-322522-4R7K	4.7±10%	30	7.96	50	1.50	220
WHC-322522-5R6K	5.6±10%	30	7.96	47	1.60	200
WHC-322522-6R8K	6.8±10%	30	7.96	43	1.80	180
WHC-322522-8R2K	8.2±10%	30	7.96	40	2.00	170
WHC-322522-100K	10.0±10%	30	2.52	36	2.10	150
WHC-322522-120K	12.0±10%	30	2.52	33	2.50	140
WHC-322522-150K	15.0±10%	30	2.52	28	2.80	130
WHC-322522-180K	18.0±10%	30	2.52	25	3.30	120
WHC-322522-220K	22.0±10%	30	2.52	23	3.70	110
WHC-322522-270K	27.0±10%	30	2.52	18	5.00	80
WHC-322522-330K	33.0±10%	30	2.52	17	5.60	70
WHC-322522-390K	39.0±10%	30	2.52	16	6.40	65
WHC-322522-470K	47.0±10%	30	2.52	15	7.00	60
WHC-322522-560K	56.0±10%	30	2.52	13	8.00	55
WHC-322522-680K	68.0±10%	30	2.52	12	9.00	50
WHC-322522-820K	82.0±10%	30	2.52	11	10.00	45
WHC-322522-101K	100±10%	20	0.796	10	11.00	40

Part Numbers	Inductance (uH)	Q Min.	Test Freq. (MHz)	SRF MHz (Min)	Rdc Ohms (Max)	Idc (mA)
WHC-453232-R10M	0.10±20%	35	25.2	300	0.18	800
WHC-453232-R12M	0.12±20%	35	25.2	280	0.20	770
WHC-453232-R15M	0.15±20%	35	25.2	250	0.22	730
WHC-453232-R18M	0.18±20%	35	25.2	220	0.24	700
WHC-453232-R22M	0.22±20%	40	25.2	200	0.25	665
WHC-453232-R27M	0.27±20%	40	25.2	180	0.26	635
WHC-453232-R33M	0.33±20%	40	25.2	165	0.28	605
WHC-453232-R39M	0.39±20%	40	25.2	150	0.30	575
WHC-453232-R47M	0.47±20%	40	25.2	145	0.32	545
WHC-453232-R56M	0.56±20%	40	25.2	140	0.36	520
WHC-453232-R68M	0.68±20%	40	25.2	135	0.40	500
WHC-453232-R82M	0.82±20%	40	25.2	130	0.45	475
WHC-453232-1R0K	1.0±10%	50	7.96	100	0.50	450
WHC-453232-1R2K	1.2±10%	50	7.96	80	0.55	430
WHC-453232-1R5K	1.5±10%	50	7.96	70	0.60	410
WHC-453232-1R8K	1.8±10%	50	7.96	60	0.65	390
WHC-453232-2R2K	2.2±10%	50	7.96	55	0.70	380
WHC-453232-2R7K	2.7±10%	50	7.96	50	0.75	370
WHC-453232-3R3K	3.3±10%	50	7.96	45	0.80	355
WHC-453232-3R9K	3.9±10%	50	7.96	40	0.90	330
WHC-453232-4R7K	4.7±10%	50	7.96	35	1.00	315
WHC-453232-5R6K	5.6±10%	50	7.96	33	1.10	300
WHC-453232-6R8K	6.8±10%	50	7.96	27	1.20	285
WHC-453232-8R2K	8.2±10%	50	7.96	25	1.40	270
WHC-453232-100K	10.0±10%	50	2.52	20	1.60	250
WHC-453232-120K	12.0±10%	50	2.52	18	2.00	225
WHC-453232-150K	15.0±10%	50	2.52	17	2.50	200
WHC-453232-180K	18.0±10%	50	2.52	15	2.80	190
WHC-453232-220K	22.0±10%	50	2.52	13	3.20	180
WHC-453232-270K	27.0±10%	50	2.52	12	3.60	170
WHC-453232-330K	33.0±10%	50	2.52	11	4.00	160
WHC-453232-390K	39.0±10%	50	2.52	10	4.50	150
WHC-453232-470K	47.0±10%	50	2.52	10	5.00	140
WHC-453232-560K	56.0±10%	50	2.52	9	5.50	135
WHC-453232-680K	68.0±10%	50	2.52	9	6.00	130
WHC-453232-820K	82.0±10%	50	2.52	8	7.00	120
WHC-453232-101K	100±10%	40	0.796	8	8.00	110
WHC-453232-121K	120±10%	40	0.796	6	8.00	110
WHC-453232-151K	150±10%	40	0.796	5	9.00	105
WHC-453232-181K	180±10%	40	0.796	5	9.50	102
WHC-453232-221K	220±10%	40	0.796	4	10.00	100
WHC-453232-271K	270±10%	40	0.796	4	12.00	92
WHC-453232-331K	330±10%	40	0.796	3.5	14.00	85
WHC-453232-391K	390±10%	40	0.796	3	18.00	80
WHC-453232-471K	470±10%	40	0.796	3	26.00	62
WHC-453232-561K	560±10%	30	0.796	3	30.00	50
WHC-453232-681K	680±10%	30	0.796	3	30.00	50
WHC-453232-821K	820±10%	30	0.796	2.5	35.00	30
WHC-453232-102K	1000±10%	20	0.252	2.5	40.00	30

WHC-322522	WHC-453232
INDUCTANCE VS.DC SUPERPOSITION CHARACTERISTICS	**INDUCTANCE VS.DC SUPERPOSITION CHARACTERISTICS**
	
TEST INSTRUMENT:HP-4291B	TEST INSTRUMENT:HP-4291B
Q VS. FREQUENCY RESPONSE	**Q VS. FREQUENCY RESPONSE**
	
TEST INSTRUMENT:HP-4291B	TEST INSTRUMENT:HP-4291B
INDUCTANCE CHANCE VS. TEMPERATURE RESPONCE	**INDUCTANCE CHANCE VS. TEMPERATURE RESPONCE**
	
TEST INSTRUMENT:HP-4284A	TEST INSTRUMENT:HP-4284A

Packaging

Tape Dimensions & Packaging:



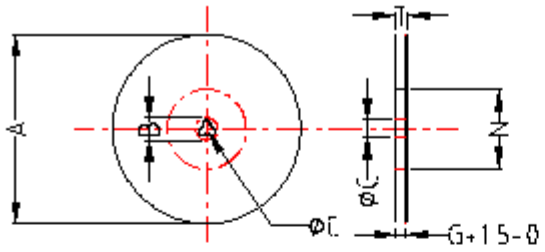
TAPE MATERIAL:
CARRIER TAPE:
POLYESTYREENE
COVER TAPE:
POLYETHYLENE

UNIT:mm

TYPE	A	B	T	W	P	CHIPS/REEL
WHC-322522	2.9	3.6	2.6	8	4	2000
WHC-453232	3.6	4.9	3.6	12	8	500

Reel Dimensions:

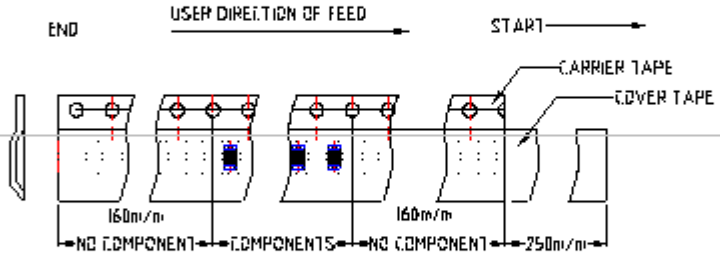
CARRIER TYPE REELS



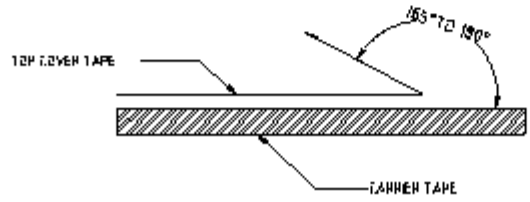
MATERIAL:PAPER PLASTIC

W	8mm	12mm
A	178.0±2.0	178.0±2.0
B	21.0±0.8	21.0±0.8
C	13.0±0.8	13.0±0.8
G	10.0	14.0
N	50^{-0}	50^{-0}
T	14.4^{+0}	18.4^{+0}

Lead & Trailer Tape:



Strength of Carrier Tape & Top Cover Tape:



RELIABILITY TEST

TEST ITEM	SPECIFICATION	TEST CONDITION/TEST METHOD
ELECTRICAL PERFORMANCE TEST		
INDUCTANCE(L)	REFER TO STANDARD ELECTRICAL CHARACTERISTIC LIST	IMPEDANCE/MATERIAL ANALYZER: HP 4291B
Q		
SELF RESONANCE FREQUENCY(SRF)		
DC RESISTANCE (RDC)		mΩ HI TESTER:HIOKI-3220
RETA CURRENT (IDC)		APPLIED THE CURRENT TO COILS,THE INDUCTANCE CHANCE SHALL BE LESS THAN 10% TO INITIAL VALUE &TEMPERATURE RISE SHALL NOT BE MORE THAN 20℃
TEMPERATURE RISE TEST	20℃ MAX	1. APPLIED THE ALLOWED DC CURRENT FOR 10 MINUTES 2. REMPERATURE MEASURE BY DIGITAL SURFACE THERMOMETER
OVER LOAD TEST	AFTER TEST, INDUCTORS SHALL BE NO EVIDENCE OF ELECTRICAL AND MECHANIACL DAMAGE	APPLIED 2 TIMES OF RATED ALLOWED DC CURRENT TO INDUCTOR FOR A PERIOD OF 5 MINUTES
WITHSTANDING VOLTAGE TEST	AFTER TEST, INDUCTORS SHALL BE NO EVIDENCE OF ELECTRICAL AND MECHANIACL DAMAGE	AC VOLTAGE OF 1000VAC APPLIED BETWEEN INDUCTORS TERMINAL AND CASE FOR 1 MINUTE
INSULATION RESISTANCE TEST	1000 MOHM MIN.	250VDC APPLIED BETWEEN INDUCTORS TERMINAL AD CASE
MECHANICAL PERFORMANCE TEST		
VIBRATION TEST (LOW FREQUENCY)	1. INDUCTORS SHALL BE NO EVIDENCE OF ELECTRICAL AND MECHANICAL DAMAGE 2. INDUCTANCE SHALL NOT CHANGE MORE THAN±5% 3. Q SHALL NOT CHANGE MORE THAN±20%	1. AMPLITUDE:1.5m/m 2. FREQUENCY:10—55—10 Hz/MIN 3. DIRECTION:X,Y,Z 4. DURATION:2 HRS/X,Y,Z
SHOKE TEST		INDUCTORS SHALL BE DROPPED 10 TIMES FROM A HEIGHT OF 1m ON TO 3 cm WOODEN BOARD
RESISTANCE TO SOLDERING HEAT		TEMP:260±5℃ TIME:10±1.0 SEC

RELIABILITY TEST

TEST ITEM	SPECIFICATION	TEST CONDITION/TEST METHOD
MECHANICAL PERFORMANCE TEST		
TERMINAL STRENGTH—PULL TEST	TERMINAL SHALL NOT BE LOOSENED OR RUPTURED	**A 1KG LOAD SHALL BE APPLIED TO BOTH TERMINALS IN THE AXIS DIRECTION FOR 1 MINUTE.** (0.5KG FOR FLC 322522 SERIES)
SOLDERABILITY TEST	THE TERMINAL SHALL BE AT LEAST 90% COVERED WITH SOLDER	AFTER FLUXING,INDUCTOR SHALL BE DIPPED IN A MOLTED SOLDER BATH AT 230±℃ FOR 5 SECONDS.
RESISTANCE TO SSOLVENT TEST	THERE SHALL BE NO CASE DEFORMATION CHANGE IN APPEARANCE OR OBLITERATION OF MARKING	MIL-STD-202F,METHOD 215D
CLIMATIC TEST		
TEMPERATURE CHARACTERISTIC	1. INDUCTORS SHALL BE NO EVIENCE OF ELECTRICAL AND MACHANICAL DAMAGE 2. INDUCTANCE SHALL NOT CHANGE MORE THAN±10% 3. Q SHALL NOT THAN MORE THAN ±20%	-25℃ --85℃
HUMIDITY TEST		1. TEMP:40±2℃ 2. R.H:90—95% 3. TIME:96±2HOURS
COLD TEST		1. TEMP:25±2℃ 2. TIME:96±2HOURS
THERMAL SHOCK TEST		ROOM TEMP → -25±2℃ 15MINS → 30MINS ROOM TEMP → -85±2℃ 15MINS → 30MINS TOTAL:5CYCLES
DRY HEAT TEST		1. TEMP:85±2℃ 2. TIME:96±2HOURS
HIGH TEMPERATURE LOAD LIFE TEST	THERE SHALL BE NO EVIDENCE OF SHOTR OR OPEN CIRCUITING	1. TEMP:85±2℃ 2. TIME:1000±2HOURS 3. LOAD:ALLOWED DC CURRENT
HUMIDITY LOAD LIFE		1. TEMP:40±2℃ 2. R.H:90—95% 3. TIME:1000±12HOURS 4. LOAD:ALLOWED DC CURRENT

NOTE:
UNLESS OTHERWISE SPECIFIED, ALLOW THE SPECIMEN TO STAND AT ROOM TEMPERATURE FOR 1 HOUR OR MORE BUT NOT MORE THAN 2 HOURS, MEASURE THE ELECTRICAL AND MECHANICAL PEFORMANCES