MOLDED WIREWOUND CHIP INDUCTORS

HWI453232 SERIES

1. PART NO. EXPRESSION :

HW I 4 5 3 2 3 2 - 1 R 0 K F
(a) (b) (c) (d) (e)

(a) Series code

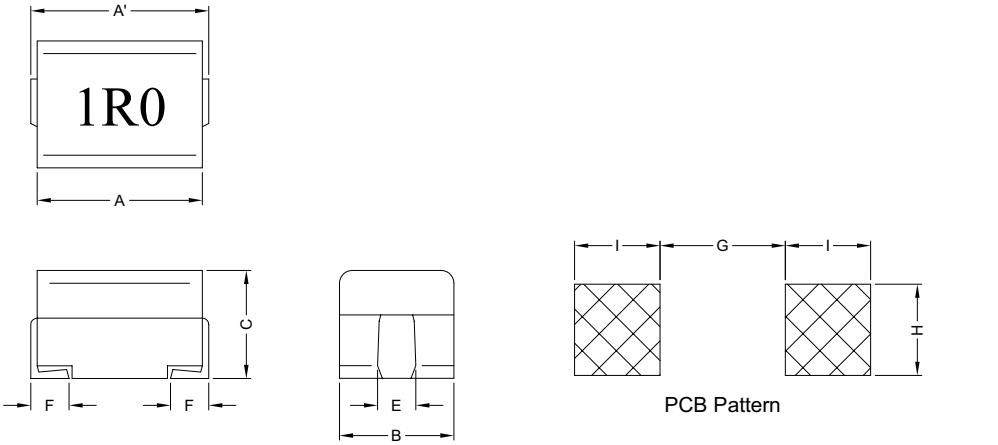
(b) Dimension code

(c) Inductance code : 1R0 = 1.00uH

(d) Tolerance code : K = ±10%, M = ±20%

(e) F : Lead Free

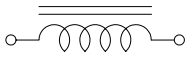
2. CONFIGURATION & DIMENSIONS :



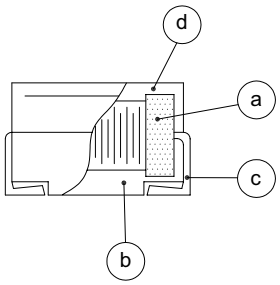
Unit:m/m

A'	A	B	C	E	F	G	H	I
4.5±0.3	4.2±0.2	3.2±0.2	3.2±0.2	1.2±0.2	1.0±0.2	2.2 Ref.	1.6 Ref.	1.5 Ref.

3. SCHEMATIC :



4. MATERIALS :



(a) Core : DR Ferrite Core

(b) Wire : Enamelled Copper Wire

(c) Terminal : Tinned Copper Plate

(d) Capsulate : Epoxy Novolac Molding Compound

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5. GENERAL SPECIFICATION :

a) Temp. rise : 20°C Max.

b) Ambient temp. : 100°C Max.

c) Storage temp. : -40°C to +125°C

d) Operating temp. : -40°C to +125°C

e) Terminal strength : 0.5Kg Min.

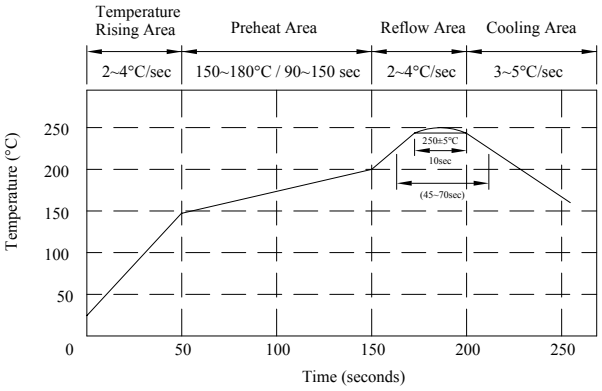
f) Rated current : Current cause inductance drop within 10%

g) Resistance to solder heat : 260°C for 10secs

h) Resistance to solvent : Per MIL-STD-202F

6. CHARACTERISTICS CURVES :

Peak Temp : 250°C Max.
Max time above 230°C : 40sec Max.
Max time above 200°C : 70sec Max.



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7. ELECTRICAL CHARACTERISTICS :

Part No.	Inductance (μH)	Q Min.	Test Frequency (MHz)	SRF (MHz) Min.	RDC (Ω) Max.	IDC (mA) Max.
HWI453232-1R0□F	1.00	10	7.96	180	0.11	1050
HWI453232-1R2□F	1.20	10	7.96	160	0.12	1000
HWI453232-1R5□F	1.50	10	7.96	130	0.15	950
HWI453232-1R8□F	1.80	10	7.96	100	0.16	900
HWI453232-2R2□F	2.20	10	7.96	80	0.18	850
HWI453232-2R7□F	2.70	10	7.96	60	0.20	800
HWI453232-3R3□F	3.30	10	7.96	45	0.22	750
HWI453232-3R9□F	3.90	10	7.96	40	0.24	700
HWI453232-4R7□F	4.70	10	7.96	35	0.27	650
HWI453232-5R6□F	5.60	10	7.96	30	0.30	650
HWI453232-6R8□F	6.80	10	7.96	28	0.35	600
HWI453232-8R2□F	8.20	10	7.96	25	0.40	600
HWI453232-100□F	10.00	10	2.52	22	0.50	550
HWI453232-120□F	12.00	10	2.52	21	0.60	500
HWI453232-150□F	15.00	10	2.52	20	0.70	450
HWI453232-180□F	18.00	10	2.52	19	0.80	400
HWI453232-220□F	22.00	10	2.52	18	0.90	370
HWI453232-270□F	27.00	10	2.52	16	1.20	330
HWI453232-330□F	33.00	10	2.52	14	1.40	300
HWI453232-390□F	39.00	10	2.52	12	1.60	280
HWI453232-470□F	47.00	10	2.52	11.5	1.90	260
HWI453232-560□F	56.00	10	2.52	11	2.20	240
HWI453232-680□F	68.00	10	2.52	10	2.60	220
HWI453232-820□F	82.00	10	2.52	9	3.50	200
HWI453232-101□F	100.00	20	0.796	8	4.00	180
HWI453232-121□F	120.00	20	0.796	7.5	4.50	160
HWI453232-151□F	150.00	20	0.796	7.0	6.50	140
HWI453232-181□F	180.00	20	0.796	6.5	7.50	120
HWI453232-221□F	220.00	20	0.796	5.5	9.00	120
HWI453232-271□F	270.00	20	0.796	5.0	11.0	100
HWI453232-331□F	330.00	20	0.796	4.0	13.0	90
HWI453232-391□F	390.00	30	0.796	3.0	13.5	85
HWI453232-471□F	470.00	30	0.796	3.0	15.0	75
HWI453232-561□F	560.00	30	0.796	3.0	17.0	70
HWI453232-681□F	680.00	30	0.796	2.5	22.8	65

Inductance tolerance :

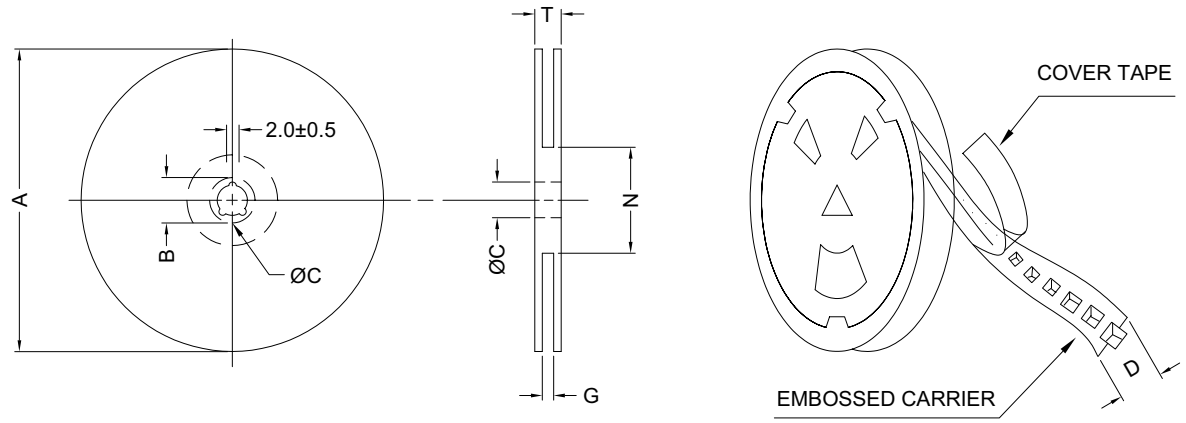
□ : K : ±10%
M : ±20%

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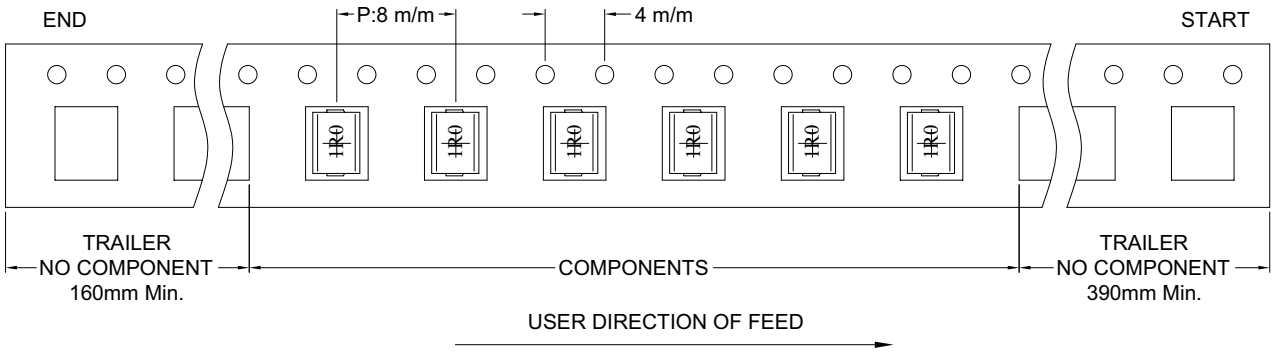
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8. PACKAGING INFORMATION :

(1) CONFIGURATION



* CARRIER TAPE WIDTH : D



(2) DIMENSIONS

Unit:m/m

A	B	C	D	G	N	T
178	21±0.8	13	12	14^{+0}	50^{-0}	16.5

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9. RELIABILTY TEST :

TEST ITEM	SPECIFICATION	TEST CONDITION / TEST METHOD
● ELECTRICAL PERFORMANCE TEST		
INDUCTANCE L	REFER TO STANDARD ELECTRICAL CHARACTERISTIC LIST	HP4194A, HPE4991A, HP4285A
Q		IMPEDANCE ANALYZER : HP4194A, HPE4991A
SELF RESONANCE FREQUENCY SRF		DIGITAL MULITMETER : 502BC
DC RESISTANCE RDC		APPLIED THE CURRENT TO COILS, THE INDUCTANCE CHANGE SHALL BE LESS THAN 10% TO INITIAL VALUE & TEMPERATURE RISE SHALL NOT BE MORE THAN 20°C
RATED CURRENT IDC		
TEMPERATURE RISE TEST	20°C MAX	1. APPLIED THE ALLOWED DC CURRENT FOR 10 MINUTES 2. TEMPERATURE MEASURE BY DIGITAL SURFACE THERMOMETER
OVER LOAD TEST	AFTER TEST, INDUCTORS SHALL BE NO EVIDENCE OF ELECTRICAL AND MECHANICAL 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 MECHANICAL DAMAGE	AC VOLTAGE OF 1000VAC APPLIED BETWEEN INDUCTORS TERMINAL AND CASE FOR 5 MINUTES
INSULATION RESISTANCE TEST	1000 MOHM MIN.	100 VDC APPLIED BETWEEN INDUCTOR TERMINAL AND COATING
● 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 :1.5 m/m 2. FFREQUENCY :10 -- 55 -- 10 HZ / 1MIN 3. DIRECTION :X, Y, Z 4. DURATION :2 HRS / X, Y, Z
SHOCK TEST		INDUCTORS SHALL BE DROPPED 10 TIMES FROM A HEIGHT OF 1m ONTO 3cm WOODEN BOARD
RESISTANCE TO SOLDERING HEAT		TEMP :260±5°C TIME :10±1.0 SEC

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9. RELIABILTY TEST :

TERMINAL STRENGTH-PULL TEST	TERMINAL SHALL NOT BE LOOSENED OR RUPTURED	A 0.5KG LOAD SHALL BE APPLIED TO BOTH TERMINALS IN THE AXIS DIRECTION FOR 1 MINUTE.
SOLDERABILITY TEST	THE TERMINAL SHALL BE AT LEAST 90% COVERED WITH SOLDER	AFTER FLUXING, INDUCTOR SHALL BE DIPPED IN A MELTED SOLDER BATH AT 240±5°C FOR 5 SECONDS.
RESISTANCE TO SOLVENT 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 EVIDENCE OF ELECTRICAL AND MECHANICAL DAMAGE 2. INDUCTANCE SHALL NOT CHANGE MORE THAN ±10% 3. Q SHALL NOT CHANGE MORE THAN ±20%	-40°C ----- +125°C
HUMIDITY TEST		1. TEMP :40±2°C 2. R.H. :90 ----- 95% 3. TIME :96±2 HOURS
COLD TEST		1. TEMP :-25±2°C 2. TIME :96±2 HOURS
THERMAL SHOCK TEST		ROOM TEMP 15 MINS → -40±2°C 30 MINS → ROOM TEMP 15 MINS → +125±2°C 30 MINS TOTAL :5 CYCLES
DRY HEAT TEST		1. TEMP :85±2°C 2. TIME :96±2 HOURS
HIGH TEMPERATURE LOAD LIFE TEST	THERE SHALL BE NO EVIDENCE OF SHORT OR OPEN CIRCUITING	1. TEMP :85±2°C 2. TIME :1000±12 HOURS 3. LOAD :ALLOWED DC CURRENT
HUMIDITY LOAD LIFE		1. TEMP :40±2°C 2. R.H. :90 ----- 95% 3. TIME :1000±12 HOURS 4. LOAD :ALLOWED DC CURRENT

● Note :

Unless otherwise specified, allow the specimen to stand at room temperature for 1 hour or more but more than 2 hours, measure the electrical and mechanical performances

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