MOLDED WIREWOUND CHIP INDUCTORS

HWI252018 SERIES

1. PART NO. EXPRESSION :

H W I 2 5 2 0 1 8 - 1 R 0 K F - □ □

(a) (b) (c) (d)(e) (f)

(a) Series code

(b) Dimension code

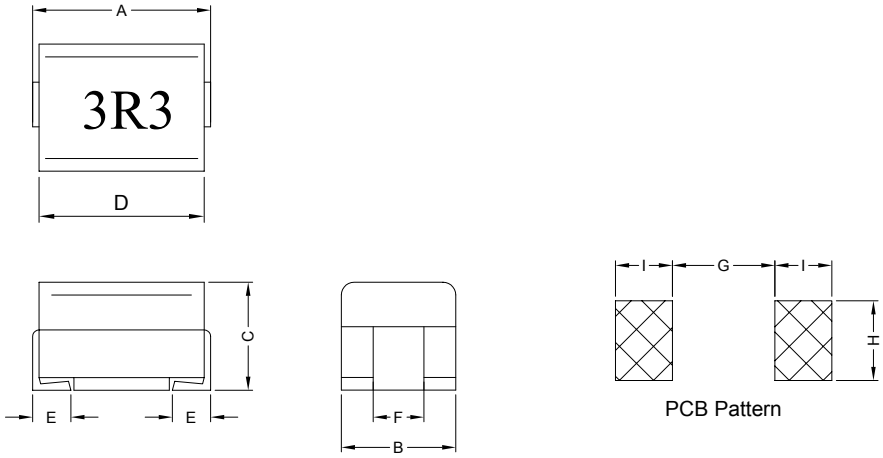
(c) Inductance code : 1R0 = 1.00uH

(d) Tolerance code :
J = ±5%, K = ±10%, M = ±20%

(e) F : Lead Free

(f) Internal Control Number

2. CONFIGURATION & DIMENSIONS :

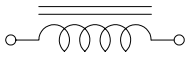


PCB Pattern

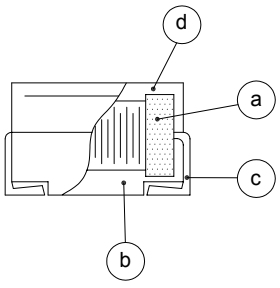
Unit:m/m

A	B	C	D	E	F	G	H	I
2.5±0.3	2.0±0.2	1.8±0.2	2.2±0.2	0.4±0.1	1.4±0.1	1.5 Ref.	1.5 Ref.	1.0 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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NOTE : Specifications subject to change without notice. Please check our website for latest information.

10.03.2011

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.

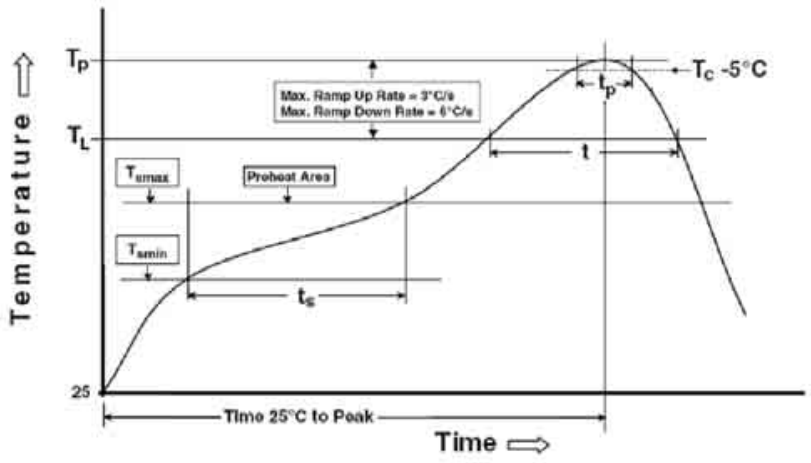
f) Rated current : Current cause inductance drop within 10%

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

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

6. RECOMMENDED REFLOW SOLDERING PROFILE :

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat & Soak Temperature min. (T_{smin}) Temperature max. (T_{smax}) Time (T_{smin} to T_{smax}) (t_s)	 100°C 150°C 60~120 seconds	 150°C 200°C 60~120 seconds
Average ramp-up rate (T_{smax} to T_p)	3°C/second max.	3°C/second max.
Liquidous temperature (T_L) Time at liquidous (t_L)	183°C 60~150 seconds	217°C 60~150 seconds
Peak package body temperature (T_p)	230°C	250°C
Time (t_p) within 5°C of the specified classification temperature (T_c)	10 seconds max	10 seconds max
Average ramp-down rate (T_p to T_{smax})	6°C/second max.	6°C/second max.
Time 25°C to peak temperature	6 minutes max.	8 minutes 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.
HWI252018-1R0□F-□□	1.00	20	7.96	170	0.34	475
HWI252018-1R5□F-□□	1.50	20	7.96	90	0.42	435
HWI252018-2R2□F-□□	2.20	20	7.96	75	0.50	390
HWI252018-3R3□F-□□	3.30	20	7.96	55	0.85	340
HWI252018-4R7□F-□□	4.70	20	7.96	43	1.04	285
HWI252018-6R8□F-□□	6.80	20	7.96	39	1.25	275
HWI252018-100□F-□□	10.00	20	2.52	30	1.69	210
HWI252018-150□F-□□	15.00	25	2.52	21	2.40	175
HWI252018-220□F-□□	22.00	25	2.52	18	3.00	160
HWI252018-330□F-□□	33.00	25	2.52	16	5.50	120

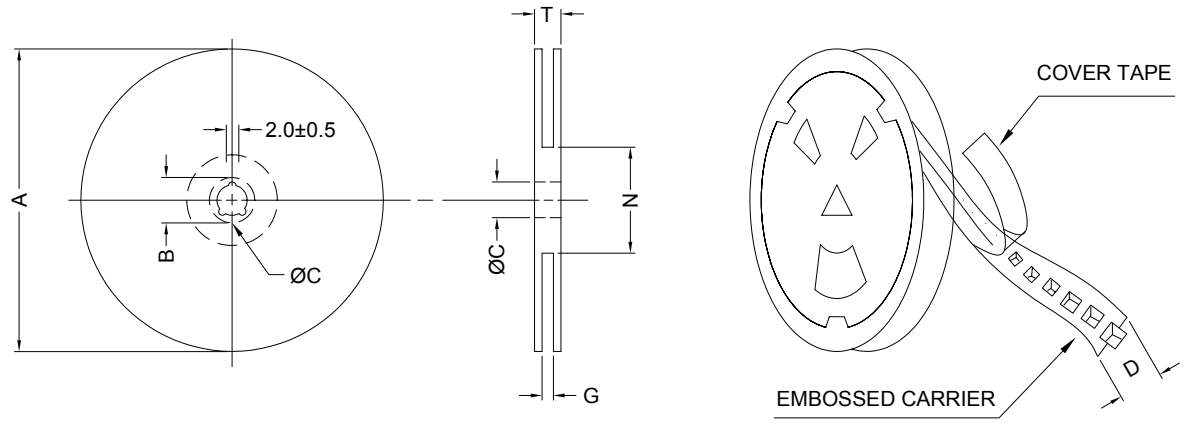
Inductance tolerance : J : ±5% K : ±10%, M : ±20%

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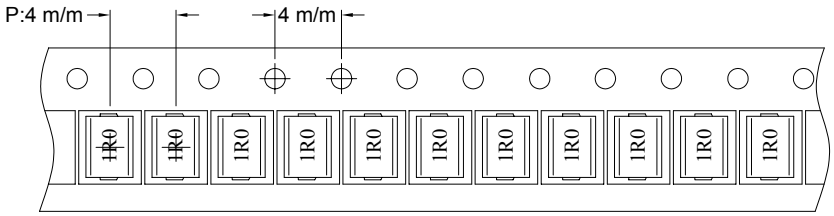
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8. PACKAGING INFORMATION :

(1) CONFIGURATION



* CARRIER TAPE WIDTH : D



(2) DIMENSIONS

Unit:m/m

A	B	C	D	G	N	T
178	21±0.8	13	8	10^{+0}	50^{-0}	12.5

(3) Q'TY & G.W. PER PACKAGE

Packing : 2000pcs/reel

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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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