



炬鹿科技有限公司
RiDEE TECH COMPANY LIMITED

Revision Date : 2023 / 11 / 09

APPROVAL SHEET

Product Name : Molding Power Inductor - Ultra High Current
Part No. : MHP Series
Description : Size 0412~1770

炬鹿科技有限公司

RiDEE TECH COMPANY LIMITED

For more contact information, please refer to our website: www.rideetech.com

Molding Power Inductor - MHP Series

■ Applications

- Laptops and PCs
- Switch and servers
- Base stations
- DC/DC converters
- Battery powered devices
- SSD modules



■ Features

- High current, low DCR, high efficiency
- Ultra low buzz noise due to molding construction
- Halogen Free & ROHS compliant

■ Part Number Explanation

MHP	0412	M	1R0	T
Product Type	Size (mm)	Tolerance	Inductance	Packing
Molding Power Inductor	0412 / 0420 0518 / 0530 0615 / 0618 0624 / 0630 0640 / 0650 1030 / 1040 1050 1240 / 1250 1260 / 1265 1770	K: $\pm 10\%$ M: $\pm 20\%$ N: $\pm 30\%$	R47=0.47 μ H R68=0.68 μ H 1R0=1.0 μ H 100=10 μ H	T: Taping

Standard Electrical Specifications

Stamp	Inductance (uH)	MHP0412			MHP0420			MHP0518			MHP0530		
		DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)
		Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ
R10	0.1				4	22	13				3.00	30.0	25.0
R15	0.15	9	15	7.5									
R20	0.2										3.90	20.0	14.0
R22	0.22	11	11	7	6.6	12.5	9.5						
R33	0.33	19	8.4	6	11	12	10				5.50	18.0	14.0
R47	0.47	21	6.8	6	14	9.5	7.5	9	15.5	10.5	8.50	15.0	11.0
R56	0.56				16	9	7	10	15	9.5			
R68	0.68	36	6	4.7	18	8	7	13.8	11.2	8.9	12.0	11.5	9.00
1R0	1.0	47	5.5	4.5	27	7	6	17	9	8	14.0	10.0	8.50
1R2	1.2				27	6.5	6				16.0	9.50	8.50
1R5	1.5	75	4	3.25	46	5.5	5	26	8	7.5	25.0	9.00	8.20
2R2	2.2	83.5	3	2.75	58	5	4.5	35	6.5	5	29.0	7.00	7.00
3R3	3.3				87	3.5	3.3	58	5	4.5	38.0	6.00	5.50
4R7	4.7	195	2.2	1.8	105	3	2.8	85	4	3.5	60.0	4.60	4.50
6R8	6.8				175	2.5	2.4	120	3.4	2.8	90.0	3.60	3.50
100	10				282	2	1.6	155	3	2.5	125	3.50	3.20
220	22				363	1.4	1.2						

Notes:

1. Test Frequency / Test Voltage : 100KHz / 1.0V
2. Operating temperature: -55 to +125°C
3. Tolerance : N:±30% ; M:±20% ; K:±10%. Please prescribe tolerance code when ordering.
4. Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.



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Standard Electrical Specifications

Stamp	Inductance (uH)	MHP0615			MHP0618			MHP0624			MHP0630			MHP0640		
		DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)
		Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ
R10	0.1				2.3	38	25									
R22	0.22				3.5	24	22	3	34	21	3	34	24			
R33	0.33							4.1	24.5	18	3.5	25	21			
R47	0.47	8.5	16	10	8.4	18.	11.5	5.1	22	15	4.1	20	18			
R56	0.56	11	14	9				6.5	17	13	4.5	18	16.5			
R68	0.68	12	12	8.5	12	16.5	9.5	7	16	12	5.3	17	16	4.8	19	17
R82	0.82	17	10	8							6	16	14			
1R0	1.0	21	9	6	16	12	8.5	13.5	15	9	7.4	15	12	6.6	16	13.5
1R5	1.5				26	9.2	8	20	13.5	8.2	12.1	12	12	10	12.5	12.4
2R2	2.2	54	7	3.8	35	8	7	28	10	7	15	10	9.5	14	11	10
3R3	3.3	63	5.5	3.5	50	6	4.5	39	8	5.5	22	9.5	8.5	20	9.5	8.5
4R7	4.7	85	5	3.2	62	5	4	50	6.5	5	33	9	6	30	9	6.5
5R6	5.6										42	6.5	5.5			
6R8	6.8	135	4	2.5	110	4.5	3	70	6	4	48	6	5	45	6.5	5.5
8R2	8.2										60	5.5	5			
100	10	175	3	2	155	4	2.3	101	4	3.1	68	5.5	4.5	65	6	4.8
150	15							160	3.3	2.5	113	4	3	95	4.5	3.7
220	22				350	2.3	1.8	230	2.5	2	170	3	2.5	125	4	3.3
330	33										270	2.5	2	240	3	2.2
470	47										385	2	1.5	320	2.5	1.8

Notes:

1. Test Frequency / Test Voltage : 100KHz / 1.0V
2. Operating temperature: -55 to +125°C
3. Tolerance : N:±30% ; M:±20% ; K:±10%. Please prescribe tolerance code when ordering.
4. Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.

Standard Electrical Specifications

Stamp	Inductance (uH)	MHP0650			MHP1030			MHP1040			MHP1050		
		DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)
		Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ
R15	0.15							0.65	75	45			
R22	0.22				1.2	50	33	1	60	35	0.8	65	37
R22- RD89	0.22				0.89±7 %	50	33						
R30	0.3							1.1	45	35			
R33	0.33				1.6	32	23						
R36	0.36				1.6	28	23	1.2	45	30			
R47	0.47	3.9	21	20	2.5	26	22	1.7	40	30			
R56	0.56							1.8	33	25			
R68	0.68	4.5	18	16.5				2.4	30	23			
R80	0.8							2.7	29	23			
R82	0.82				3.7	23	18						
1R0	1.0	6.6	16	12	6	21	15	3.3	28	19	3	30	23
1R5	1.5	10	13	9.5				4.2	24	16	3.8	25	21
2R2	2.2	12.5	11	9	9	14	11	7	16.5	12	6	19	15
3R3	3.3	22	10	8.5	16	12	9	11.8	16	11	10	16	13
4R7	4.7	29	8	6	24	10	7	20	13	9	14	15	11
5R6	5.6										17	14	9.5
6R8	6.8	41	6.3	5.8				25	12	8.5	48.5	14	9
8R2	8.2	48	5.5	5.5	45	7	5	27	9	8			
100	10	60	5.3	4.5				30	8.5	7.8	28	10	8
120	12												
150	15	90	4	3.1				45	7	6.5	42	7.5	6.5
180	18												
220	22	140	3.5	2.6				66	5.5	5	50	6	5.5
330	33	190	3	2.3	160	4	2.6	92	4.8	4.4	86	5.2	4.8
470	47	230	2.6	2				145	3.5	3.3	127	4.5	3.7
680	68							195	3	2.5			
101								340	2.3	2	290	2.8	2.1

Notes:

1. Test Frequency / Test Voltage : 100KHz / 1.0V
2. Operating temperature: -55 to +125°C
3. Tolerance : N:±30% ; M:±20% ; K:±10%. Please prescribe tolerance code when ordering.
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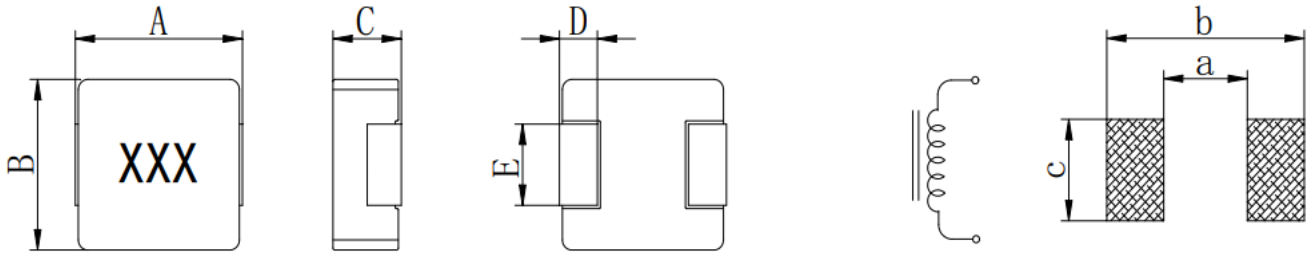
Standard Electrical Specifications

Stamp	Inductance (uH)	MHP1240			MHP1250			MHP1260			MHP1265			MHP1770		
		DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)	DCR (mΩ)	Isat (A)	Irms (A)
		Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ	Max	Typ	Typ
R22	0.22	0.9	50	42	0.7	75	50									
R36	0.36				0.85	50	42									
R47	0.47	2	48	33												
R50	0.5				1.15	48	38									
R68	0.68	3.5	47	28	1.55	46	33									
R82	0.82	4.5	40	28	1.67	39	30									
1R0	1	7.5	35	24	2.2	35	26									
1R5	1.5	9.5	30.5	20	3.2	33	23									
2R2	2.2	11.5	26	18	5	24	15							2.5	34	29
3R3	3.3	13	21	15	7	22	14							3.95	30	24
4R7	4.7	14.5	18	13	9	20	13	9	24	15	8.5	24	16	4.75	24	21
5R6	5.6							11	22.5	13	10.5	22.5	14			
6R8	6.8	20	14	9	18	16	12	13.5	19	12	12	19	13	7.5	22	17
8R2	8.2				20	13	9.5	16	13.5	11	14	16	12	8.7	20	13
100	10	25	10	8	22	12	9	20.7	12.5	10	16.5	15	11	9.9	19	12
120	12							23	10	9						
150	15	39	7.5	6.5	30	10	8	29	9	8.5	26	11	9.5	17	14.5	11
180	18							35	8	7.5						
220	22	51	6	4.5	58	6.5	4.5	39.5	7.5	7	36	9	8	23	11.5	8.5
270	27							56	6.5	6						
330	33				84	6	3.5	75	6	5.5	65	8	6.5	37	10	8
470	47				130	5	3	90	5.5	5.5	70	6.8	5.5	47	7.5	6
680	68							140	4.5	4	120	5.2	4.8	85	6.5	5.2
820	82										135	4.5	4			
101	100							200	3.5	3	170	4	3.5	130	5	3.7
121	120							235	3.2	2						
151	150							350	2.7	1.5						

Notes:

1. Test Frequency / Test Voltage : 100KHz / 1.0V
2. Operating temperature: -55 to +125°C
3. Tolerance : N:±30% ; M:±20% ; K:±10%. Please prescribe tolerance code when ordering.
4. Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.

■ Type Dimension



UNIT : mm

TYPE	A	B	C	D	E	a	b	c
						Typ.	Typ.	Typ.
0412	4.4±0.35	4.2±0.25	1.0±0.2	0.8±0.3	2.0±0.3	2.2	5.2	2.5
0420	4.4±0.35	4.2±0.25	1.8±0.2	0.8±0.3	2.0±0.3	2.2	5.2	2.5
0518	5.4±0.35	5.2±0.2	1.6±0.2	1.2±0.2	2.2±0.3	2.2	6	2.5
0530	5.4±0.35	5.2±0.2	2.8±0.2	1.2±0.2	2.2±0.3	2.2	6	2.5
0615	7.0±0.3	6.6±0.2	1.3±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
0618	7.0±0.3	6.6±0.2	1.6±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
0624	7.0±0.3	6.6±0.2	2.2±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
0630	7.0±0.3	6.6±0.2	2.8±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
0640	7.0±0.3	6.6±0.2	3.8±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
0650	7.0±0.3	6.6±0.2	4.8±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5
1030	11.5Max	10.0±0.3	2.8±0.2	2.0±0.5	3±0.5	5.4	13.6	4.1
1040	11.5Max	10.0±0.3	3.8±0.2	2.0±0.5	3.0±0.5	5.4	13.6	4.1
1050	11.5Max	10±0.3	4.8±0.2	2.0±0.5	3.0±0.5	5.4	13.6	4.1
1240	13.45±0.35	12.8±0.3	3.8±0.2	2±0.5	See Remarks	8	14.5	5.5
1250	13.45±0.35	12.6±0.3	4.8±0.2	2.0±0.5	See Remarks	8.0	14.5	5.5
1260	13.45±0.35	12.6±0.3	5.8±0.2	2.0±0.5	5.0±0.5	8.0	14.5	5.5
1265	13.45±0.35	12.6±0.3	6.5Max	2.0±0.5	5±0.3	8.0	14.5	5.5
1770	17.15±0.35	17.15Max	7Max	2.5±0.5	12±0.3	11.2	18.2	12.8

■ Marking

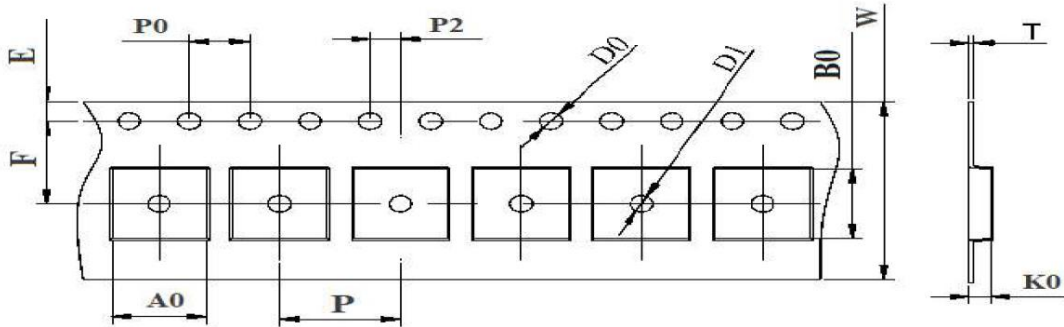
The inductor is marked with a 3-digit code

Example	Nominal Value
1R0	1.0 μH
100	10 μH
101	100 μH

Notes: Using Ink for marking

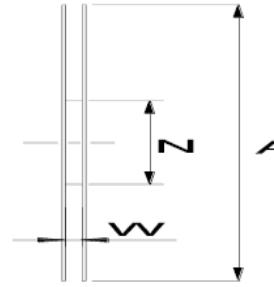
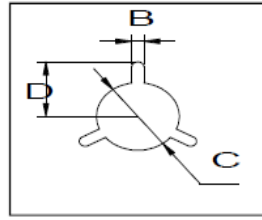
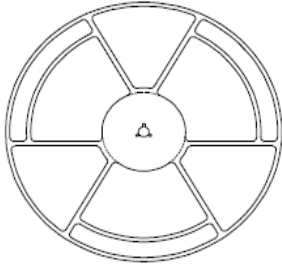
■ Packaging

■ Tape Packaging Dimensions



Type	Tape dimensions (mm)											
	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F
MHP0412	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	4.5±0.1	4.85±0.1	1.50±0.1	1.75±0.1	5.5±0.1
MHP0420	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	4.5±0.1	4.85±0.1	2.30±0.1	1.75±0.1	5.5±0.1
MHP0518	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	5.5±0.1	5.9±0.1	2.0±0.01	1.75±0.1	5.5±0.1
MHP0530	12±0.3	8±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	5.5±0.1	5.9±0.1	3.3±0.1	1.75±0.1	5.5±0.1
MHP0610	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.4±0.1	6.5±0.1	1.1±0.1	1.75±0.1	7.5±0.1
MHP0615	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.9±0.1	7.5±0.1	1.7±0.1	1.75±0.1	7.5±0.1
MHP0618	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.9±0.1	7.5±0.1	2.1±0.1	1.75±0.1	7.5±0.1
MHP0624	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.9±0.1	7.5±0.1	2.7±0.1	1.75±0.1	7.5±0.1
MHP0630	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.9±0.1	7.5±0.1	3.3±0.1	1.75±0.1	7.5±0.1
MHP0640	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.4±0.05	6.9±0.1	7.5±0.1	4.3±0.1	1.75±0.1	7.5±0.1
MHP0650	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.4±0.05	6.9±0.1	7.5±0.1	5.4±0.1	1.75±0.1	7.5±0.1
MHP0840	24±0.3	16±0.1	4±0.1	2±0.1	1.55±0.1	1.55±0.1	0.35±0.05	8.9±0.1	7.5±0.1	10.1±0.1	1.75±0.1	11.5±0.1
MHP1030	24±0.3	16±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	10.4±0.1	11.6±0.1	3.3±0.1	1.75±0.1	11.5±0.1
MHP1040	24±0.3	16±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	10.4±0.1	11.6±0.1	4.3±0.1	1.75±0.1	11.5±0.1
MHP1050	24±0.3	16±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.40±0.05	10.4±0.1	11.6±0.1	5.4±0.1	1.75±0.1	11.5±0.1
MHP1250	24±0.3	16±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.1	0.50±0.05	13.1±0.1	14.0±0.1	5.4±0.1	1.75±0.1	11.5±0.1
MHP1260	24±0.3	16±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.1	0.50±0.05	13.1±0.1	14.0±0.1	6.3±0.1	1.75±0.1	11.5±0.1
MHP1265	24±0.3	16±0.1	4±0.1	2±0.05	1.5±0.1	1.5±0.1	0.50±0.05	13.1±0.1	14.0±0.1	6.8±0.1	1.75±0.1	11.5±0.1
MHP1770	32±0.3	24±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.50±0.05	17.5±0.1	18.1±0.1	7.3±0.1	1.75±0.1	14.2±0.1

■ Reel Dimensions



Type	Reel dimensions (mm)					
	A	W	N	B	C	D
MHP0412	330±2.0	12.8±2.0	97±0.5	2.2±0.5	13.0±0.2	10.75±0.25
MHP0420						
MHP0518						
MHP0530						
MHP0610	330±2.0	16.8±2.0	97±0.5	2.2±0.5	13.2±0.2	10.75±0.25
MHP0615						
MHP0618						
MHP0624						
MHP0630						
MHP0640						
MHP0650						
MHP0840	330±2.0	24.0±2.0	97±0.5	2.2±0.5	13.2±0.2	10.75±0.25
MHP1030	330±2.0	24.0±0.5	97±0.5	2.2±0.5	13.0±0.2	10.75±0.25
MHP1040						
MHP1050						
MHP1250	330±2.0	24.0±0.5	97±0.5	2.2±0.5	13.0±0.2	10.75±0.25
MHP1260						
MHP1265						
MHP1770	330±2.0	32.0±0.5	97±0.5	2.3±0.3	13.0±0.2	10.75±0.25

■ Packaging Quantity

Type	Standard Quantity
	Reel
MHP0412	3,000 pcs / reel
MHP0420	3,000 pcs / reel
MHP0518	2,000 pcs / reel
MHP0530	2,000 pcs / reel
MHP0610	3,000 pcs / reel
MHP0615	2,000 pcs / reel
MHP0618	2,000 pcs / reel
MHP0624	1,500 pcs / reel
MHP0630	1,500 pcs / reel
MHP0640	1,000 pcs / reel
MHP0650	1,000 pcs / reel
MHP0840	800 pcs / reel
MHP1030	800 pcs / reel
MHP1040	500 pcs / reel
MHP1050	500 pcs / reel
MHP1250	500 pcs / reel
MHP1260	500 pcs / reel
MHP1265	500 pcs / reel
MHP1770	200 pcs / reel

■ Reliability test and requirement

Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in appearance 2. New solder coverage More than 95%	1.Preheat: 155°C±5°C , 60S±2S 2.Tin: lead-free. 3.Temperature:240±5°C , flux 3.0S±0.5S.
Mechanical shock	1. No case deformation or change in appearance 2. $\Delta L/Lo \leq 10\%$	1. Acceleration: 100G 2. Pulse time: 6ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in appearance 2. $\Delta L/Lo \leq 10\%$	1. Reflow: 2times 2. Frequency: 10HZ ~55HZ~10HZ , 20 Min/Cycles 3. Amplitude: 1.52 mm 4. Directions: X,Y,Z 5. Time: 12 cycle / direction
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within±10% Without distinct damage in appearance	1. First -55°C for 30 minutes, last 125°C for 30 minutes as 1 cycle. Go through 1000 cycles. 2. Max transfer time is 3 minutes. 3. Measured at room temperature after placing for 24±2 hours
Humidity Resistance	Inductance change: Within±10% Without distinct damage in appearance	1.Reflow 2 times, 2.85°C,85%RH,1000 hours 3.Measured at room temperature after placing for 24±2 hours
Low temperature storage	Inductance change: Within±10% Without distinct damage in appearance	1. Temperature: -55±2°C 2. Time: 1000 hours 3. Measured at room temperature after placing for 24±2 hours
High temperature storage	Inductance change: Within±10% Without distinct damage in appearance	1. Temperature: +125±2°C 2. Time: 1000 hours 3. Measured at room temperature after placing for 24±2 hours