



# SPECIFICATION FOR APPROVAL

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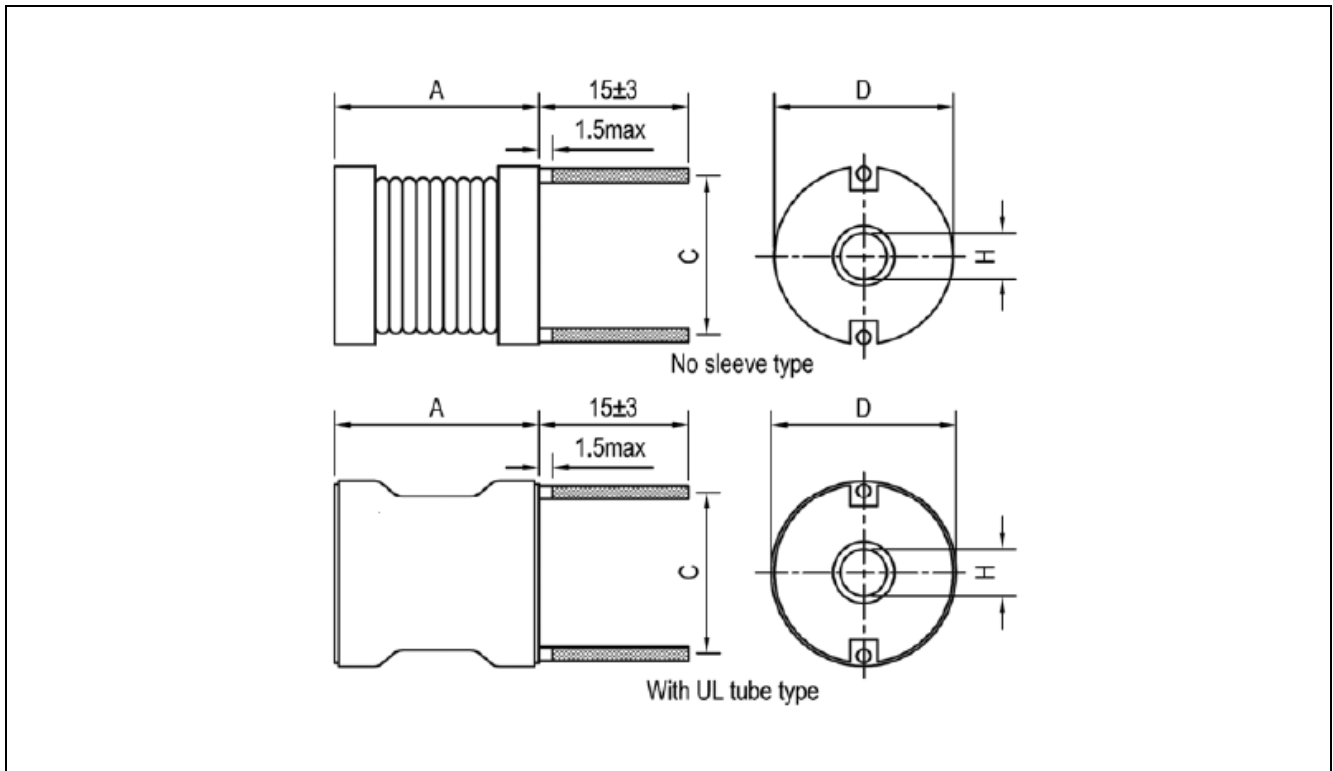
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## PRODUCT DETAIL

Electrical Characteristics			Test Instruments
L	See P6~7	<b>TEST FREQ:</b> 1kHz	<ul style="list-style-type: none"> <li>• HP4284A PRECISION LCR METER</li> <li>• HP4284A WITH HP42841A CURRENT SOURCE</li> <li>• CHENHWA 502 OHM METER</li> <li>• HC-D3M TEMP. &amp; HUMIDITY CHAMBER</li> </ul>
DCR	See P6~7	<b>TEST LEVEL:</b> 0.25V	
R.Current	See P6~7	<b>Ope.Temp.:</b> -20°C~80°C	

## SHAPES AND DIMENSIONS



P/N	Item /Spec.(mm)			
	A max	C typ	D max	H min
DDRH1420	21.5	12.0	16.5	3.0
DDRH1820	21.5	15.0	21.0	3.0
DDRH2620	21.5	22.0	28.0	5.0
DDRH3525	28.0	30.0	40.0	3.6

**Marking :**



## PART NUMBER CODE

DDRH   1820 - 3R3   M   A - UL  
1            2            3        4        5        6

1 Series Name

2 Size Code: OD=18mm    L=20mm

3 Inductance (R=Decimal Point)    Unit :  $\mu\text{H}$

4 Inductance tolerance : "M"  $\pm 20\%$  ; "K"  $\pm 10\%$

5 Lead free

6.Tube



**PACKAGING QUANTITY :**

<b>Packaging Quantity</b>					
<b>PART SIZE</b>		<b>DDRH1420</b>	<b>DDRH1820</b>	<b>DDRH2620</b>	<b>DDRH3525</b>
<b>Package</b>	<b>Inner box/pcs</b>	504	324	90	90
	<b>Carton/pcs</b>	1008	648	180	180



## HIGH CURRENT FILTER CHOKES

### DDRH 1420/1820 TYPE

PART No.	L @1kHz (uH)	DCR (Ohm) Max		I sat (DC Amp)		Suggested rated current AC(A)	
		DDRH1420	DDRH1820	DDRH1420	DDRH1820	DDRH1420	DDRH1820
1R0M	1.0	0.003	0.003	28	60	9.0	11.4
1R2M	1.2	0.003	0.003	26	54	9.0	11.4
1R5M	1.5	0.004	0.003	23	48	9.0	11.4
1R8M	1.8	0.004	0.003	21	44	9.0	11.4
2R2M	2.2	0.005	0.004	19	40	9.0	11.4
2R7M	2.7	0.005	0.005	17	36	9.0	11.4
3R3M	3.3	0.006	0.005	15	33	9.0	11.4
3R9M	3.9	0.007	0.005	14	30	9.0	11.4
4R7M	4.7	0.007	0.005	13	28	9.0	11.4
5R6M	5.6	0.008	0.006	12	25	9.0	11.4
6R8M	6.8	0.009	0.007	11	23	9.0	11.4
8R2M	8.2	0.010	0.007	10	21	9.0	11.4
100K	10	0.011	0.009	9.0	19	9.0	11.4
120K	12	0.015	0.009	8.5	17	8.5	11.4
150K	15	0.016	0.013	7.5	15	7.2	9.0
180K	18	0.025	0.018	6.8	14	6.8	7.2
220K	22	0.030	0.019	6.0	13	5.5	7.2
270K	27	0.040	0.026	5.5	11	4.5	5.5
330K	33	0.046	0.029	5.0	10	4.0	5.5
390K	39	0.062	0.030	4.5	9.5	4.0	5.5
470K	47	0.069	0.035	4.0	8.8	2.8	5.5
560K	56	0.077	0.039	3.7	8.0	2.8	5.5
680K	68	0.083	0.053	3.4	7.2	2.8	4.8
820K	82	0.095	0.060	3.1	6.6	2.8	4.8
101K	100	0.127	0.080	2.8	6.0	2.8	4.0
121K	120	0.171	0.090	2.5	5.5	2.0	4.0
151K	150	0.217	0.098	2.3	4.8	1.6	4.0
181K	180	0.240	0.110	2.1	4.4	1.6	4.0
221K	220	0.300	0.150	1.9	4.0	1.6	2.8
271K	270	0.336	0.213	1.7	3.6	1.6	2.0
331K	330	0.460	0.305	1.5	3.3	1.3	1.6
391K	390	0.656	0.320	1.4	3.0	1.0	1.6
471K	470	0.696	0.355	1.3	2.7	0.8	1.6
561K	560		0.388	1.2	2.5	0.8	1.6
681K	680		0.430		2.3		1.6
821K	820		.0590		2.1		1.3
102K	1000		0.818		1.9		1.0
122K	1200		1.140		1.7		0.8
152K	1500		1.260		1.5		0.8
182K	1800		1.390		1.4		0.8
222K	2200		1.540		1.2		0.8



## HIGH CURRENT FILTER CHOKES

### DDRH 2620/3525 TYPE

PART No.	L @1kHz (uH)	DCR (Ohm) Max		I sat (DC Amp)		Suggested rated current AC(A)	
		DDRH2620	DDRH3525	DDRH2620	DDRH3525	DDRH2620	DDRH3525
3R9M	3.9	0.003	0.003	32.0	95	21.0	27.0
4R7M	4.7	0.003	0.003	29.0	95	21.0	27.0
5R6M	5.6	0.003	0.004	26.0	79	21.0	27.0
6R8M	6.8	0.004	0.004	24.0	79	21.0	27.0
8R2M	8.2	0.004	0.004	22.0	69	21.0	27.0
100K	10	0.006	0.005	20.0	61	21.0	27.0
120K	12	0.008	0.005	18.0	55	13.5	27.0
150K	15	0.009	0.006	16.0	49	13.5	27.0
180K	18	0.01	0.008	15.0	41	13.5	27.0
220K	22	0.011	0.009	13.5	38	13.5	21.0
270K	27	0.012	0.01	12.0	36	13.5	21.0
330K	33	0.017	0.011	11.0	31	13.5	21.0
390K	39	0.022	0.012	10.0	28	11.4	21.0
470K	47	0.024	0.018	9.2	27	9.0	14.4
560K	56	0.026	0.019	8.5	26	9.0	14.4
680K	68	0.029	0.021	7.6	25	9.0	14.4
820K	82	0.032	0.023	7.0	23	9.0	14.4
101K	100	0.034	0.025	6.5	20	7.2	14.4
121K	120	0.046	0.028	5.8	18	5.5	11.4
151K	150	0.064	0.040	5.2	17	5.5	11.4
181K	180	0.072	0.042	4.7	15	5.5	11.4
221K	220	0.080	0.050	4.3	13	4.5	11.4
271K	270	0.110	0.056	3.9	12	4.5	11.4
331K	330	0.122	0.074	3.5	11	4.0	11.4
391K	390	0.169	0.082	3.2	10	4.0	9.0
41K	470	0.187	0.114	2.9	9.2	4.0	7.2
561K	560	0.205	0.125	2.7	8.3	2.8	7.2
681K	680	0.256	0.139	2.4	7.6	2.8	7.2
821K	820	0.288	0.154	2.2	6.8	2.0	7.2
102K	1000	0.426	0.215	2.0	6.2	2.0	5.5
122K	1200	0.462	0.232	1.8	5.7	2.0	5.5
152K	1500	0.518	0.324	1.6	5.1	1.6	4.5
182K	1800	0.705	0.360	1.5	4.6	1.3	4.5
222K	2200	1.020	0.494	1.3	4.2	1.3	4.0
272K	2700	1.140	0.555	1.2	3.8	1.3	4.0
332K	3300	1.270	0.773	1.1	3.4	1.0	2.8
392K	3900	1.670	0.845	1.0	3.1	1.0	2.8
472K	4700	1.860	1.140	0.9	2.9		2.0
562K	5600		1.600		2.5		2.0
682K	6800		1.760		2.3		1.6
822K	8000		1.950		2.0		1.6
103K	10000		2.760		1.8		1.3
123K	12000		3.040		1.7		1.3
153K	15000		3.390		1.5		1.3

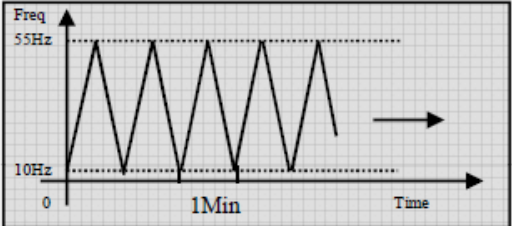
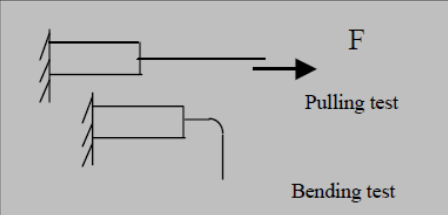


## RELIABILITY AND TEST CONDITION

### Environmental tests conditions (DIP wire wound Inductor)

Item (項目)	Required Characteristics (要求)	Test Method/Condition (測試方法)
<p>High temperature Storage test</p> <p>Reference documents: MIL-STD-202G Method 108A</p> <p>高溫儲存試驗</p>	<p>1.No case deformation or change in appearance. 2.<math>\Delta L/L \leq 10\%</math> 3.<math>\Delta DCR/DCR \leq 10\%</math></p> <p>N : The High temperature, depend on the spec. N : 高溫設定，依據產品規格設定</p> <p>1.無明顯的外觀缺陷 2.感值變化不超過 10% 3.直流電阻變化不超過 10%</p>	<p>Temperature: <math>N \pm 2^\circ\text{C}</math> Time : <math>96 \pm 2</math> hours Tested not less than 1 hour, nor more than 2 hours at room temperature.</p> <p>溫度: <math>N \pm 2^\circ\text{C}</math>, 時間: <math>96 \pm 2</math>, 小時 樣品在室溫下放置 1 小時, 不超過 2 小時必須測試。</p>
<p>Low temperature Storage test</p> <p>Reference documents: IEC 68-2-1A 6.1 6.2</p> <p>低溫儲存試驗</p>	<p>1.No case deformation or change in appearance. 2.<math>\Delta L/L \leq 10\%</math> 3.<math>\Delta DCR/DCR \leq 10\%</math></p> <p>M : The Low temperature, depend on the spec. M : 低溫設定，依據產品規格設定</p> <p>1.無明顯的外觀缺陷 2.感值變化不超過 10% 3.直流電阻變化不超過 10%</p>	<p>Temperature: <math>M \pm 2^\circ\text{C}</math> Time : <math>96 \pm 2</math> hours Tested not less than 1 hour, nor more than 2 hours at room temperature.</p> <p>溫度: <math>M \pm 2^\circ\text{C}</math>, 時間: <math>96 \pm 2</math>, 小時 樣品在室溫下放置 1 小時, 不超過 2 小時必須測試。</p>
<p>Humidity test</p> <p>Reference documents: MIL-STD-202G Method 103B</p> <p>濕度測試</p>	<p>1.No case deformation or change in appearance. 2.<math>\Delta L/L \leq 10\%</math> 3.<math>\Delta DCR/DCR \leq 10\%</math></p> <p>1.無明顯的外觀缺陷 2.感值變化不超過 10% 3.直流電阻變化不超過 10%</p>	<p>Temperature: <math>40 \pm 2^\circ\text{C}</math> , Humidity: <math>93 \pm 3\% \text{RH}</math> Time : <math>96 \pm 2</math> hours Tested not less than 1 hour, nor more than 2 hours at room temperature.</p> <p>溫度: <math>40 \pm 2^\circ\text{C}</math> , 濕度: <math>93 \pm 3\% \text{RH}</math> 時間 : <math>96 \pm 2</math> hours 樣品在室溫下放置 1 小時, 不超過 2 小時必須測試。</p>
<p>Thermal shock test</p> <p>Reference documents: MIL-STD-202G Method 107G</p> <p>熱衝擊測試</p>	<p>1.No case deformation or change in appearance. 2.<math>\Delta L/L \leq 10\%</math> 3.<math>\Delta DCR/DCR \leq 10\%</math></p> <p>N : The High temperature, depend on the spec. M : The Low temperature, depend on the spec. For T: weight <math>\leq 28\text{g}</math> : 15Min; <math>28\text{g} \leq \text{weight} \leq 136\text{g}</math> : 30Min</p> <p>1.無明顯的外觀缺陷 2.感值變化小於 10% 3.直流電阻變化小於 10%</p>	<p>First <math>M^\circ\text{C}</math> for T time, next <math>N^\circ\text{C}</math> for T time as 1 cycle. Go through 20 cycles.</p> <p>從 <math>M^\circ\text{C}</math> 作用 T 分鐘, 然後溫度衝擊到 <math>N^\circ\text{C}</math> 作用 T 分鐘, 作為一個循環, 共作用 20 次。</p>

Physical characteristic tests conditions (DIP wire wound Inductor)

Item (項目)	Required Characteristics (要求)	Test Method/Condition (測試方法)
Solderability test Reference documents: MIL-STD-202G Method 208H IPC J-STD-002B 可焊性測試	Terminals area must have 95% min. Solder coverage 端子必須有 95%以上著錫	<ul style="list-style-type: none"> <li>● Dip pads in flux then dip in solder pot at 245±5°C for 5 second.</li> <li>● Solder: lead free</li> <li>● Flux: rosin flux</li> <li>● 端子侵入著焊劑，然後侵入 245±5°C 錫爐中 5 秒</li> <li>● 焊料：無鉛焊料</li> <li>● 助焊劑：松香助焊劑</li> </ul>
Heat endurance of flow soldering Reference documents: MIL-STD-202G Method 210F 波峰焊耐熱試驗	<ul style="list-style-type: none"> <li>● No case deformation or change in appearance.</li> <li>● <math>\Delta L/L \leq 10\%</math></li> <li>● <math>\Delta DCR/DCR \leq 10\%</math></li> <li>● 無明顯的外觀缺陷</li> <li>● 感值變化不超過 10%</li> <li>● 直流電阻變化不超過 10%</li> </ul>	<ul style="list-style-type: none"> <li>● Dip pads in flux then dip in solder pot at 260±5°C for 10 second.</li> <li>● Solder: lead free</li> <li>● Flux: rosin flux</li> <li>● 端子侵入著焊劑，然後侵入 260±5°C 錫爐中 10 秒</li> <li>● 焊料：無鉛焊料</li> <li>● 助焊劑：松香助焊劑</li> </ul>
Vibration test Reference documents: MIL-STD-202G Method 201A 振動測試	<ul style="list-style-type: none"> <li>● No case deformation or change in appearance.</li> <li>● <math>\Delta L/L \leq 10\%</math></li> <li>● <math>\Delta DCR/DCR \leq 10\%</math></li> <li>● 無明顯的外觀缺陷</li> <li>● 感值變化不超過 10%</li> <li>● 直流電阻變化不超過 10%</li> </ul>	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.(total 6 hours)  用 10~55Hz 振動頻率 1.5mm 振幅沿 X,Y,Z 方向各振動 2 小時.(共 6 小時)
Drop test Reference documents: MIL-STD-202G Method 203C 落下試驗	<ul style="list-style-type: none"> <li>● No case deformation or change in appearance.</li> <li>● <math>\Delta L/L \leq 10\%</math></li> <li>● <math>\Delta DCR/DCR \leq 10\%</math></li> <li>● 無明顯的外觀缺陷</li> <li>● 感值變化不超過 10%</li> <li>● 直流電阻變化不超過 10%</li> </ul>	Packaged & Drop down from 1m with 981m/s <sup>2</sup> (100G) attitude In 1 angle 1 ridges & 2 surfaces orientations. 將產品包裝後從 1 米高度自然落下至試驗板上 1 角 1 稜 2 面
Terminal strength Reference documents: IEC 68-2-21:1992 Test A & C 端子強度試驗	1.Terminal should not come out 2.Meet require test condition A&C For: Wire-leaded components-Test A&C For: Others leaded components-Test A 1.端子不會松脫 2.滿足要求的測試條件 A&C	A Pull Force:0.45kg;the force shall be applied gradually to the terminal and then maintained for 10 seconds. C. Wire-lead bend:0.23kg,The rate of bending shall be approximately 3 seconds per bend in each direction. The load shall be suspended at a point within 1/4 inch from the free end of the terminal.  A.拉力:0.45 公斤力,拉力逐漸到最大值維持 10 秒。 C.線腳彎曲:0.23 公斤力,每個方向彎曲 3 次.負載應該加在離端子末端 1/4 英寸處
Resistance to solvent test Reference documents: IEC 68-2-45:1993 耐溶劑性試驗	No case deformation or change in appearance, or obliteration of marking 無外觀破壞及標記破損	To dip parts into IPA solvent for 5±0.5Min, then drying them at room temp for 5Min,at last ,to brushing making 10 times. 在 IPA 溶劑中浸泡 5±0.5 分鐘,室溫下乾燥 5 分鐘,然後擦拭 10 次.





Electrical Characteristic test (DIP wire wound Inductor)

Item (項目)	Required Characteristics(要求)	Test Method / Condition (測試方法)
Electronic characteristic test of major products 主要產品電特性測試	Refer to catalogue of specific products 參照具體產品目錄頁	Refer to catalogue of specific products 參照具體產品目錄頁書
Overload test Reference documents: JIS C5311-6.13 過負荷試驗	1. During the test no smoke, no peculiar, smell, no fire 2. The characteristic is normal after test  1. 試驗過程中無冒煙,異味,著火等, 2. 試驗後產品特性正常	Apply twice as rated current for 5 minutes.  通兩倍額定電流 5 分鐘
Voltage resistance test Reference documents: MIL-STD-202G method 301 絕緣耐壓測試	1. During the test no breakdown 2. The characteristic is normal after test  1. 試驗過程中無擊穿, 2. 試驗後產品特性正常	Refer to product's specification  參照產品的具體規格