

## Data Sheet

**Customer:**

**Product:** DIP Power Inductor—DRGH Series

**Sizes.:** 654/664/855/875/895/106/108/110

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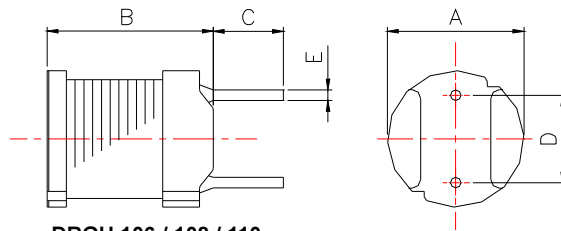
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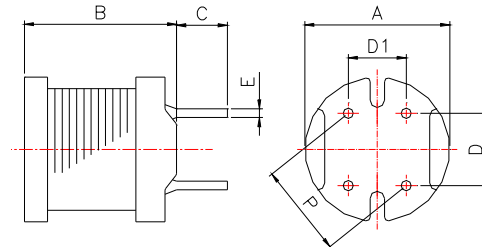
## DIP Power Inductor



DRGH 654 / 664 / 855 / 875 / 895



DRGH 106 / 108 / 110



### Dimensions

Unit: mm

Type	A	B max.	C	D	D1	E	P
DRGH654	6.0±0.5	5.0	4.0±1.0	4.0±0.3	–	0.50±0.1	–
DRGH664	6.0±0.5	6.5	4.0±1.0	4.0±0.3	–	0.50±0.1	–
DRGH855	7.8±0.5	5.5	5.0±1.0	5.0±0.3	–	0.65±0.1	–
DRGH875	7.8±0.5	7.5	5.0±1.0	5.0±0.3	–	0.65±0.1	–
DRGH895	7.8±0.5	9.5	5.0±1.0	5.0±0.3	–	0.65±0.1	–
DRGH106	10.0±0.5	6.5	3.5±1.0	5.0±0.3	4.0±0.3	0.80±0.1	6.40±0.5
DRGH108	10.0±0.5	8.5	3.5±1.0	5.0±0.3	4.0±0.3	0.65±0.1	6.40±0.5
DRGH110	10.0±0.5	10.5	3.5±1.0	5.0±0.3	4.0±0.3	0.70±0.1	6.40±0.5

### Features

- Density design, small size, and low cost
- Comparatively range rated current and high inductance
- Low DCR and high dip stability

### Applications

- Personal Computers
- Variety of Battery Power Equipment
- DC Power Supply Circuits

### Characteristics

- Rated DC Current: The current when the inductance becomes 10% lower than its initial value. (Ta=25°C)
- Operating temperature range -40~125°C

### Inductance and rated current ranges

– DRGH654	22~1000μH	0.90~0.13A
– DRGH664	22~1000μH	1.27~0.19A
– DRGH855	10~10000μH	2.50~0.081A
– DRGH875	10~10000μH	2.90~0.084A
– DRGH895	10~47000μH	2.60~0.038A
– DRGH106	10~1000μH	3.60~0.36A
– DRGH108	10~1000μH	4.50~0.45A
– DRGH110	10~1000μH	5.30~0.53A

– Test equipment:

L: HP4284A LCR meter

DCR: Milli-ohm meter

– Electrical specifications at 25°C

### Product Identification

DRGH	664	K	B	100
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	654: 6.0x5.0x4.0 664: 6.0x6.5x4.0 855: 7.8x5.5x5.0 875: 7.8x7.5x5.0 895: 7.8x9.5x5.0 106: 10x6.5x3.5 108: 10x8.5x3.5 110: 10x10.5x3.5	K: ±10% M: ±20%	B: Bulk	100: 10μH

**DIP Power Inductor**

**■Electrical Characteristics**

DRGH654 / 664 / 855 / 875 Type

Codes	L ( $\mu$ H)	Tolerance	Test Condition	DCR ( $\Omega$ ) max.				IDC (A) max.			
				654	664	855	875	654	664	855	875
100	10	M	1KHz, 0.1V	-	-	0.07	0.05	-	-	2.50	2.90
120	12	M	1KHz, 0.1V	-	-	0.08	0.06	-	-	2.40	2.50
150	15	M	1KHz, 0.1V	-	-	0.09	0.07	-	-	2.10	2.20
180	18	M	1KHz, 0.1V	-	-	0.10	0.08	-	-	2.00	1.90
220	22	M	1KHz, 0.1V	0.18	0.11	0.12	0.09	0.90	1.27	1.70	1.80
270	27	M	1KHz, 0.1V	0.21	0.14	0.14	0.11	0.81	1.14	1.60	1.70
330	33	M	1KHz, 0.1V	0.27	0.17	0.17	0.13	0.74	1.03	1.40	1.50
390	39	M	1KHz, 0.1V	0.29	0.19	0.21	0.14	0.68	0.95	1.30	1.30
470	47	M	1KHz, 0.1V	0.34	0.23	0.24	0.15	0.62	0.87	1.20	1.30
560	56	M	1KHz, 0.1V	0.42	0.26	0.31	0.18	0.57	0.80	1.10	1.20
680	68	M	1KHz, 0.1V	0.48	0.28	0.34	0.20	0.51	0.72	1.00	1.10
820	82	M	1KHz, 0.1V	0.55	0.39	0.40	0.24	0.47	0.66	0.93	1.00
101	100	K	1KHz, 0.1V	0.68	0.43	0.52	0.28	0.42	0.59	0.81	0.89
121	120	K	1KHz, 0.1V	0.77	0.54	0.59	0.36	0.39	0.54	0.76	0.81
151	150	K	1KHz, 0.1V	0.95	0.64	0.71	0.42	0.35	0.48	0.67	0.72
181	180	K	1KHz, 0.1V	1.15	0.74	0.89	0.57	0.32	0.44	0.62	0.66
221	220	K	1KHz, 0.1V	1.30	0.96	1.04	0.63	0.29	0.40	0.54	0.57
271	270	K	1KHz, 0.1V	1.55	1.12	1.28	0.88	0.26	0.36	0.49	0.51
331	330	K	1KHz, 0.1V	2.18	1.48	1.47	1.05	0.23	0.33	0.44	0.46
391	390	K	1KHz, 0.1V	2.47	1.66	1.67	1.17	0.21	0.30	0.41	0.44
471	470	K	1KHz, 0.1V	2.92	1.91	1.95	1.34	0.20	0.27	0.38	0.41
561	560	K	1KHz, 0.1V	3.97	2.31	2.83	1.72	0.18	0.25	0.35	0.36
681	680	K	1KHz, 0.1V	4.57	2.67	3.25	1.96	0.16	0.23	0.32	0.33
821	820	K	1KHz, 0.1V	5.28	3.10	3.82	2.56	0.15	0.21	0.31	0.30
102	1000	K	1KHz, 0.1V	7.06	4.45	5.28	2.94	0.13	0.19	0.25	0.27
122	1200	K	1KHz, 0.1V	-	-	6.03	4.04	-	-	0.23	0.24
152	1500	K	1KHz, 0.1V	-	-	7.15	4.70	-	-	0.21	0.22
182	1800	K	1KHz, 0.1V	-	-	8.26	5.05	-	-	0.20	0.20
222	2200	K	1KHz, 0.1V	-	-	11.1	6.25	-	-	0.18	0.18
272	2700	K	1KHz, 0.1V	-	-	13.1	8.72	-	-	0.16	0.16
332	3300	K	1KHz, 0.1V	-	-	15.9	10.6	-	-	0.14	0.15
392	3900	K	1KHz, 0.1V	-	-	18.0	14.2	-	-	0.13	0.14
472	4700	K	1KHz, 0.1V	-	-	23.9	16.7	-	-	0.12	0.12
562	5600	K	1KHz, 0.1V	-	-	26.8	18.7	-	-	0.11	0.11
682	6800	K	1KHz, 0.1V	-	-	31.7	21.8	-	-	0.098	0.10
822	8200	K	1KHz, 0.1V	-	-	46.5	28.7	-	-	0.088	0.093
103	10000	K	1KHz, 0.1V	-	-	55.7	33.0	-	-	0.081	0.084

**Electrical Characteristics**

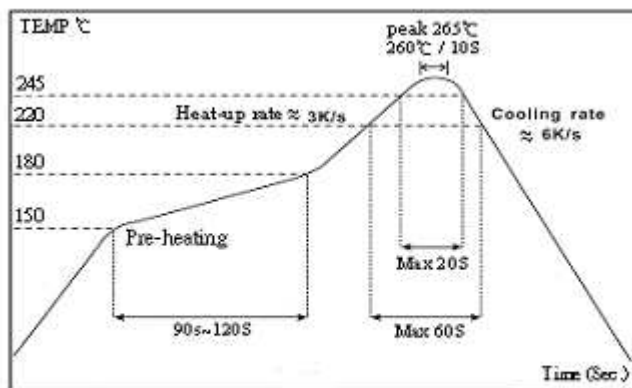
DRGH895 / 106 / 108 / 110 Type

Codes	L ( $\mu$ H)	Tolerance	Test Condition	DCR ( $\Omega$ ) max.				IDC (A) max.			
				895	106	108	110	895	106	108	110
100	10	M	100KHz, 0.1V	0.04	0.040	0.027	0.022	2.60	3.60	4.50	5.30
120	12	M	100KHz, 0.1V	0.04	0.044	0.031	0.023	2.60	3.30	4.10	4.90
150	15	M	100KHz, 0.1V	0.05	0.058	0.036	0.026	2.10	2.90	3.70	4.40
180	18	M	100KHz, 0.1V	0.05	0.064	0.049	0.033	2.00	2.70	3.40	4.00
220	22	M	100KHz, 0.1V	0.06	0.088	0.055	0.037	1.70	2.40	3.10	3.60
270	27	M	100KHz, 0.1V	0.06	0.100	0.062	0.048	1.60	2.20	2.80	3.30
330	33	M	100KHz, 0.1V	0.07	0.110	0.078	0.055	1.40	2.00	2.50	2.90
390	39	M	100KHz, 0.1V	0.08	0.140	0.087	0.073	1.40	1.80	2.30	2.70
470	47	M	100KHz, 0.1V	0.10	0.160	0.099	0.083	1.30	1.70	2.10	2.50
560	56	M	100KHz, 0.1V	0.11	0.190	0.130	0.092	1.20	1.50	1.90	2.30
680	68	M	100KHz, 0.1V	0.14	0.220	0.140	0.120	1.10	1.40	1.70	2.10
820	82	M	100KHz, 0.1V	0.16	0.290	0.160	0.140	1.00	1.30	1.60	1.90
101	100	K	1KHz, 0.1V	0.19	0.320	0.210	0.160	0.90	1.30	1.40	1.70
121	120	K	1KHz, 0.1V	0.22	0.380	0.240	0.200	0.82	1.20	1.30	1.50
151	150	K	1KHz, 0.1V	0.27	0.500	0.320	0.230	0.74	1.00	1.20	1.40
181	180	K	1KHz, 0.1V	0.31	0.560	0.350	0.310	0.71	0.84	1.10	1.30
221	220	K	1KHz, 0.1V	0.38	0.780	0.450	0.340	0.64	0.76	0.96	1.10
271	270	K	1KHz, 0.1V	0.53	0.920	0.610	0.400	0.57	0.69	0.87	1.00
331	330	K	1KHz, 0.1V	0.61	1.100	0.690	0.520	0.51	0.62	0.79	0.93
391	390	K	1KHz, 0.1V	0.69	1.300	0.780	0.650	0.48	0.57	0.72	0.86
471	470	K	1KHz, 0.1V	0.89	1.500	1.000	0.710	0.43	0.52	0.66	0.78
561	560	K	1KHz, 0.1V	1.01	1.900	1.200	1.000	0.40	0.48	0.60	0.71
681	680	K	1KHz, 0.1V	1.18	2.200	1.400	1.100	0.35	0.43	0.55	0.65
821	820	K	1KHz, 0.1V	1.57	2.600	1.800	1.300	0.32	0.40	0.50	0.59
102	1000	K	1KHz, 0.1V	1.84	3.200	2.100	1.800	0.30	0.36	0.45	0.53
122	1200	K	1KHz, 0.1V	2.10	-	-	-	0.27	-	-	-
152	1500	K	1KHz, 0.1V	2.80	-	-	-	0.23	-	-	-
182	1800	K	1KHz, 0.1V	3.21	-	-	-	0.21	-	-	-
222	2200	K	1KHz, 0.1V	4.21	-	-	-	0.19	-	-	-
272	2700	K	1KHz, 0.1V	4.94	-	-	-	0.17	-	-	-
332	3300	K	1KHz, 0.1V	6.16	-	-	-	0.15	-	-	-
392	3900	K	1KHz, 0.1V	6.84	-	-	-	0.14	-	-	-
472	4700	K	1KHz, 0.1V	7.89	-	-	-	0.13	-	-	-
562	5600	K	1KHz, 0.1V	11.50	-	-	-	0.12	-	-	-
682	6800	K	1KHz, 0.1V	13.20	-	-	-	0.11	-	-	-
822	8200	K	1KHz, 0.1V	15.20	-	-	-	0.10	-	-	-
103	10000	K	1KHz, 0.1V	22.00	-	-	-	0.089	-	-	-
123	12000	K	1KHz, 0.1V	25.00	-	-	-	0.073	-	-	-
153	15000	K	1KHz, 0.1V	29.10	-	-	-	0.068	-	-	-
183	18000	K	1KHz, 0.1V	38.90	-	-	-	0.066	-	-	-
223	22000	K	1KHz, 0.1V	44.90	-	-	-	0.059	-	-	-
273	27000	K	1KHz, 0.1V	55.70	-	-	-	0.052	-	-	-
333	33000	K	1KHz, 0.1V	64.20	-	-	-	0.048	-	-	-
393	39000	K	1KHz, 0.1V	74.20	-	-	-	0.042	-	-	-
473	47000	K	1KHz, 0.1V	96.40	-	-	-	0.038	-	-	-

**■ Package**

Type	Parts plate	Parts Per box / bind
DRGH654	120/plate	600/box
DRGH664	120/plate	600/box
DRGH855	200/plate	2400/bind
DRGH875	200/plate	2400/bind
DRGH895	200/plate	2400/bind
DRGH106	120/plate	600/box
DRGH108	120/plate	600/box
DRGH110	144/plate	1296/bind

**■ IR-Reflow**



**DIP Power Inductor**

**■ Reliability of DIP Ferrite Wire Wound Power Inductor**

**Mechanical Performance**

Item	Specification	Test Method
Vibration	Appearance: No damage L change: within±10% RDC: within specification	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
Resistance to Soldering Heat	Appearance: No Damage	Pre-heating:150℃,1Min. Solder Composition: Sn/Ag/Cu=95.6/3.0/0.5 Solder Temperature: 260±5℃ Immersion Time: 4±1Sec.
Solderability	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag/Cu=95.6/3.0/0.5 Solder Temperature: 245±5℃ Immersion Time: 4±1sec

**Environmental Performance**

Item	Specification	Test Method		
Temperature Shock	Appearance: No damage L change: within±10% RDC: within specification	10 cycles (Air to Air) 1 cycles shall consist of: 30 minutes exposure to -55 ℃ 30 minutes exposure to 125 ℃ 15 seconds maximum transition between temperatures		
Temperature Cycle		One cycle:		
		Step	Temperature (℃)	Time (min)
		1	-25±3	30
		2	25±2	3
		3	30	
		4	25±2	3
		Total: 100cycles Measured after exposure in the room condition for 24hrs		
Humidity Resistance		Temperature: 40±2℃ Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs		
Heat Temperature Resistance		Temperature: 85±3℃ Relative Humidity: 20% Applied Current: Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs		
Low Temperature Resistance		Temperature: -25±3℃ Relative Humidity: 0% Time: 1000hrs Measured after exposure in the room condition for 24hrs		

■ Storage Temperature :25±3℃;<80%RH