



**THE DATASHEET OF  
DGH105Q5R5**





### FEATURES

Very Fast Charge/Discharge – High Power Density – Lower ESR –  
RoHS Compliant

### APPLICATIONS

Battery Backup/Alternative – Pulse Power – Energy Harvesting – LED  
Displays – Mechanical Actuators – Audio Systems

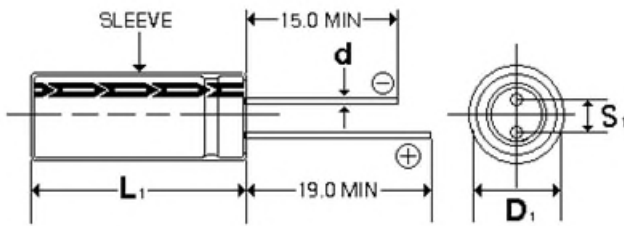
<b>Operating Temperature Range</b>	<b>-40°C to +85°C</b>	
<b>Storage Temperature</b>	<b>-40°C to +70°C</b>	
<b>Capacitance Tolerance @ 20°C</b>	<b>-10% +30% (Q Tolerance) -20% +20% (M Tolerance)</b>	
<b>Voltage (Vdc) (+65°C / +85°C)</b>	<b>2.7V / 2.3V 5.5V / 4.6V 8.1V / 6.9V</b>	
<b>Life Time</b>	<b>1500 hours with rated voltage applied at rated temperature</b>	
	<b>Capacitance change</b>	≤30% of initially measured values
	<b>ESR</b>	≤400% of initially specified values ≤200% of initially specified values (100F to 600F)
	<b>Leakage current</b>	≤100% specified maximum value
<b>Shelf Life</b>	<b>1000 hours with no voltage applied at 65°C (1F to 70F) 1500 hours with no voltage applied at 65°C (100F to 600F)</b>	
	<b>Capacitance change</b>	≤30% of initially measured values
	<b>ESR</b>	≤200% of initially specified values
<b>Life Cycles</b> ( 25°C) 1 cycle= Charge to WVDC for 20s, constant voltage charging for 10s, discharge to ½ WVDC for 20s, rest for 10s	<b>500,000 cycles</b>	
	<b>Capacitance change</b>	<30% of initially measured values
	<b>ESR change</b>	<200% of initially specified values

[RoHS Compliant](#)

 810a Recognized



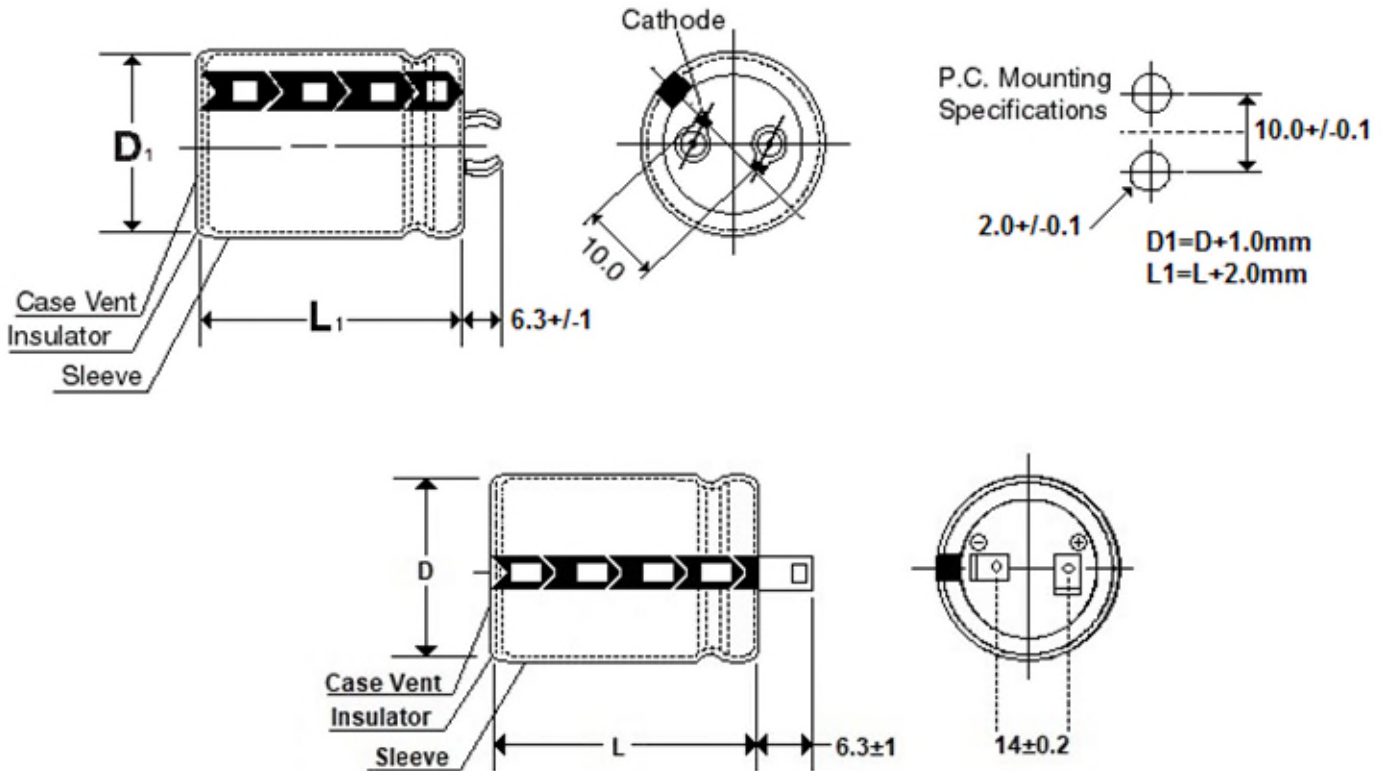
### Diameter 6.3mm to 18mm



Lead spacing VS. Case diameter						
D	6.3	8	10	12.5	16	18
S	2.5	3.5	5.0	5.0	7.5	7.5
d	0.6	0.6	0.6	0.6	0.8	0.8
α	1.5	1.5	2.0	2.0	2.0	2.0

$L_1 = L + \alpha$  mm  
 $D_1 = D + 0.5$  mm  
 $S_1 = S \pm 0.5$  mm  
 $d = d \pm 0.05$  mm

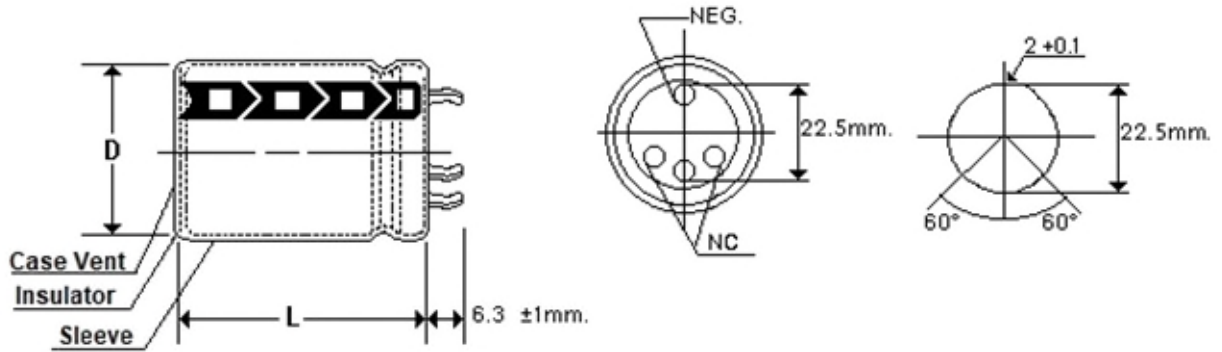
### Capacitance 100F to 350F



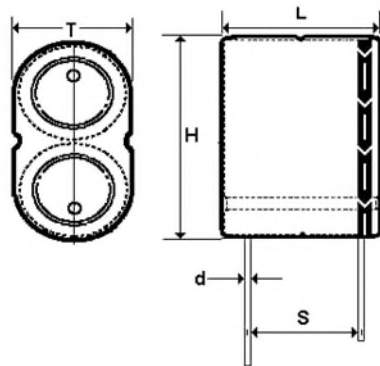
\*Lead style L available for 350F



### Capacitance 400F to 600F

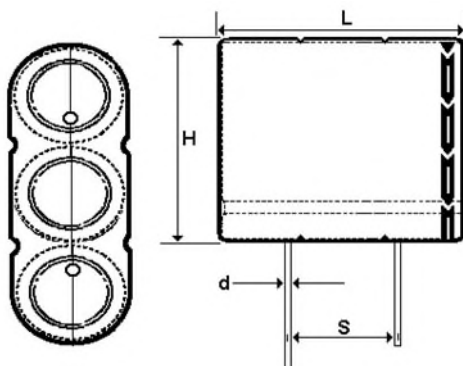


### Capacitance 0.5F to 5F 5.5 Volts



Capacitance (F)	Dims (LxHxT) (mm) ±2.0mm	Lead spacing (S) (mm) ±0.5mm	Lead diameter (d) (mm) ±0.05mm
0.5	17x16x8.5	12	0.6
1	17x16x8.5	12	0.6
1.5	17x22x8.5	12	0.6
2.5	21x22x11	15.5	0.6
3.5	21x27x11	15.5	0.6
5	26x27x13	18	0.6

### Capacitance 0.33F to 5F 8.1 Volts



Capacitance (F)	Dims (LxHxT) (mm) ±1.0mm	Lead spacing (S) (mm) ±1mm	Lead diameter (d) (mm) ±0.05mm
0.33	25x16x8.5	13.5	0.6
0.5	21x20x6.5	11	0.6
0.67	25x16x8.5	13.5	0.6
1	25x22x8.5	13.5	0.6
2	31x23x11	16	0.6
3.3	31x27x11	16	0.6
5	39x33x13	21	0.6

# DGH

High pulse power, extends battery life

WVDC	Capacitance (F)	IC PART NUMBER	MAX Current (A) (1 Sec.)	Maximum Continuous Current (A) ( $\Delta T=15^{\circ}C$ )	Short Circuit Current (A)	ESR AC 1 kHz (m $\Omega$ )	DC ESR (m $\Omega$ ) 20°C	Max stored energy (mWh)	LC (mA), (72 hrs)	Energy Density (Wh/kg)	Energy Volumetric Density (Wh/l)	Power Density (kW/kg)	Power Volumetric Density (kW/l)
2.7	1.0	DGH105Q2R7	0.96	0.60	6.8	200	400	1.01	0.008	0.92	1.44	1.988	3.1
2.7	1.2	DGH125M2R7	0.94	0.10	4.5	300	600	1.22	0.008	1.52	2.59	1.82	3.12
2.7	1.5	DGH155M2R7	1.1	0.13	4.8	280	560	1.5	0.008	1.6	2.7	1.64	2.78
2.7	2.0	DGH205Q2R7	1.8	0.70	11	120	240	2.03	0.01	1.68	2.879	2.91	3.97
2.7	3.0	DGH305Q2R7	2.8	1.2	18	80	150	3.04	0.012	2.17	3.02	4.16	5.8
2.7	3.3	DGH335Q2R7	3	1.2	18	80	150	3.34	0.014	2.23	3.33	3.89	5.8
2.7	5.0	DGH505Q2R7	4.1	1.3	21	70	130	5.06	0.016	2.531	3.22	3.37	4.27
2.7	6.0	DGH605Q2R7	4.5	0.51	21	65	130	6.08	0.016	2.89	3.86	3.2	4.28
2.7	7.0	DGH705Q2R7	6.1	1.7	34	55	80	7.09	0.02	2.83	3.61	4.37	5.57
2.7	10.0	DGH106Q2R7	8.4	3.5	45	40	60	10.13	0.03	3.89	5.16	5.6	7.43
2.7	10.0	DGH106Q2R7B	8.4	3.5	45	40	60	10.13	0.03	2.978	4.299	4.288	6.191
2.7	10.0	DGH106Q2R7C	8.4	3.5	45	40	60	10.13	0.03	3.38	5.16	4.86	7.4
2.7	15.0	DGH156Q2R7	11.6	2.4	54	30	60	15.19	0.045	3.375	4.127	3.89	4.75
2.7	20.0	DGH206Q2R7	15	2.6	68	25	50	20.25	0.06	3.11	4.02	3.36	4.3
2.7	25.0	DGH256Q2R7	18	3.1	77	25	35	25.31	0.08	2.98	5.04	2.94	4.96
2.7	30.0	DGH306Q2R7	21.3	4.0	90	22	30	30.38	0.1	3.79	5.03	3.64	4.8
2.7	50.0	DGH506Q2R7	32.1	5.2	123	15	22	50.63	0.14	3.62	4.97	2.84	3.91
2.7	70.0	DGH706Q2R7	39.4	5.8	135	14	20	70.88	0.16	3.938	5.573	2.43	3.439
2.7	100.0	DGH107Q2R7	61.4	8.3	225	8	12	101.25	0.3	4.821	5.922	3.471	4.264
2.7	200.0	DGH207Q2R7	90	10	270	6	10	202.5	0.7	5.192	5.732	2.243	2.476
2.7	350.0	DGH357Q2R7	212	18.9	771	3	3.5	354.4	1	5.45	6.13	3.85	4.33
2.7	350.0	DGH357Q2R7L	212	18.9	771	3	3.5	354.4	1	5.45	6.13	3.85	4.33
2.7	400.0	DGH407Q2R7	225	33.17	771	3	3.5	405	1	5.96	7.016	4.02	4.736
2.7	470.0	DGH477Q2R7	240	18.9	771	3	3.5	475.9	1.3	6.61	8.244	3.47	4.33
2.7	600.0	DGH607Q2R7	261	18	771	3	3.5	608	1.5	7.41	9.02	3.1	3.71
5.5	0.5	DGH504Q5R5	0.96	0.6	6.8	400	800	2.1	0.008	0.955	0.855	2.06	1.85
5.5	1.0	DGH105Q5R5	1.8	0.70	11	280	520	4.2	0.01	1.68	1.71	2.9	2.96
5.5	1.5	DGH155Q5R5	2.8	1.2	18	160	300	6.3	0.012	2.101	1.89	4.03	3.64
5.5	2.5	DGH255Q5R5	4.1	1.3	21	140	260	10.5	0.016	2.02	1.98	2.69	2.63
5.5	3.5	DGH355Q5R5	6.1	1.7	34	110	160	14.7	0.02	2.45	2.36	2.52	2.42
5.5	5.0	DGH505Q5R5	8.4	3.5	45	80	120	21	0.03	2.53	2.3	3.65	2.21
8.1	0.33	DGH334Q8R1	0.95	0.09	6.64	620	1220	3	0.055	1.27	1.44	1.265	1.44
8.1	0.5	DGH504M8R1	1.1	0.13	4.8	860	1700	4.6	0.2	1.6	2.71	1.59	2.7
8.1	0.67	DGH674Q8R1	1.8	0.18	11	380	740	6.1	0.2	2.03	2.88	2.02	2.88
8.1	1.0	DGH105Q8R1	2.76	0.26	17.2	245	470	9.1	0.25	2.17	2.01	2.17	3.007
8.1	2.0	DGH205Q8R1	4.6	0.51	21.3	200	380	18.2	0.32	2.89	3.87	2.89	3.86
8.1	3.3	DGH335Q8R1	6.86	0.84	28	155	290	30.3	0.6	3	5.17	3.75	5.16
8.1	5.0	DGH505Q8R1	10.13	1.27	40.5	110	200	45.6	0.9	3.38	4.13	3.375	4.127

# DGH

High pulse power, extends battery life

WVDC	Capacitance (F)	IC PART NUMBER	Weight (grams)	Volume (mL)	Dims DxL LxHxT (mm)	Lead Spacing S (mm)	Lead Diameter d (mm)
2.7	1.0	DGH105Q2R7	0.8	0.703	8x14	3.5	0.6
2.7	1.2	DGH125M2R7	0.8	0.47	6.3x15	2.5	0.5
2.7	1.5	DGH155M2R7	0.95	0.56	6.3x18	2.6	0.5
2.7	2.0	DGH205Q2R7	1	0.703	8x14	3.5	0.6
2.7	3.0	DGH305Q2R7	1.4	1.01	8x20	3.5	0.6
2.7	3.3	DGH335Q2R7	1.5	1.01	8x20	3.5	0.6
2.7	5.0	DGH505Q2R7	2.1	1.57	10x20	5	0.6
2.7	6.0	DGH605Q2R7	2.1	1.57	10x20	5	0.6
2.7	7.0	DGH705Q2R7	2.3	1.96	10x25	5	0.6
2.7	10.0	DGH106Q2R7	3.2	2.36	10x30	5	0.6
2.7	10.0	DGH106Q2R7B	3.6	2.36	12.5x25	5	0.6
2.7	10.0	DGH106Q2R7C	2.7	1.96	10x25	5	0.6
2.7	15.0	DGH156Q2R7	4.5	3.68	12.5x30	5	0.6
2.7	20.0	DGH206Q2R7	7	5.03	16x25	7.5	0.8
2.7	25.0	DGH256Q2R7	7	5.03	16x25	7.5	0.8
2.7	30.0	DGH306Q2R7	9.7	6.03	16x30	7.5	0.8
2.7	50.0	DGH506Q2R7	13.8	10.18	18x40	7.5	0.8
2.7	70.0	DGH706Q2R7	15	12.72	18x50	7.5	0.8
2.7	100.0	DGH107Q2R7	20	17.1	22x45	10	1.2
2.7	200.0	DGH207Q2R7	36	35.33	30x50	10	1.2
2.7	350.0	DGH357Q2R7	73	57.73	35x60	10	1.2
2.7	350.0	DGH357Q2R7L	73	57.73	35x60	18.4	1.2
2.7	400.0	DGH407Q2R7	73	57.73	35x60	22.5	1.2
2.7	470.0	DGH477Q2R7	75	57.73	35x60	22.5	1.2
2.7	600.0	DGH607Q2R7	90	67.35	35x70	22.5	1.2
5.5	0.5	DGH504Q5R5	2.2	2.46	17x16x8.5	12	0.6
5.5	1.0	DGH105Q5R5	2.5	2.46	17x16x8.5	12	0.6
5.5	1.5	DGH155Q5R5	3	3.32	17x22x8.5	12	0.6
5.5	2.5	DGH255Q5R5	5.2	5.3	21x22x11	15.5	0.6
5.5	3.5	DGH355Q5R5	6	6.24	21x27x11	15.5	0.6
5.5	5.0	DGH505Q5R5	8.3	9.13	26x27x13	18	0.6
8.1	0.33	DGH334Q8R1	4	2.109	25x16x8.5	13.5	0.6
8.1	0.5	DGH504M8R1	4	1.68	21x20x6.5	11	0.5
8.1	0.67	DGH674Q8R1	4	2.109	25x16x8.5	13.5	0.6
8.1	1.0	DGH105Q8R1	5.5	3.03	25x22x8.5	13.5	0.6
8.1	2.0	DGH205Q8R1	7.5	4.71	31x23x11	16	0.6
8.1	3.3	DGH335Q8R1	10	5.88	31x27x11	16	0.6
8.1	5.0	DGH505Q8R1	15	11.04	39x33x13	21	0.6

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