



### 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

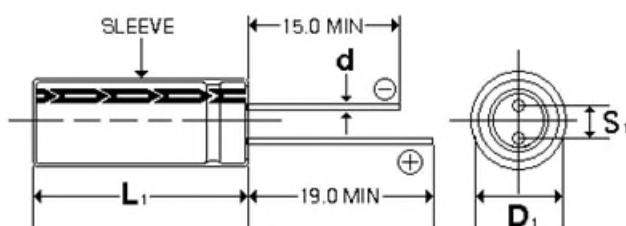
|                                                                                                                                     |                                                                                                                     |                                               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

[RoHS Compliant](#)

 810a Recognized



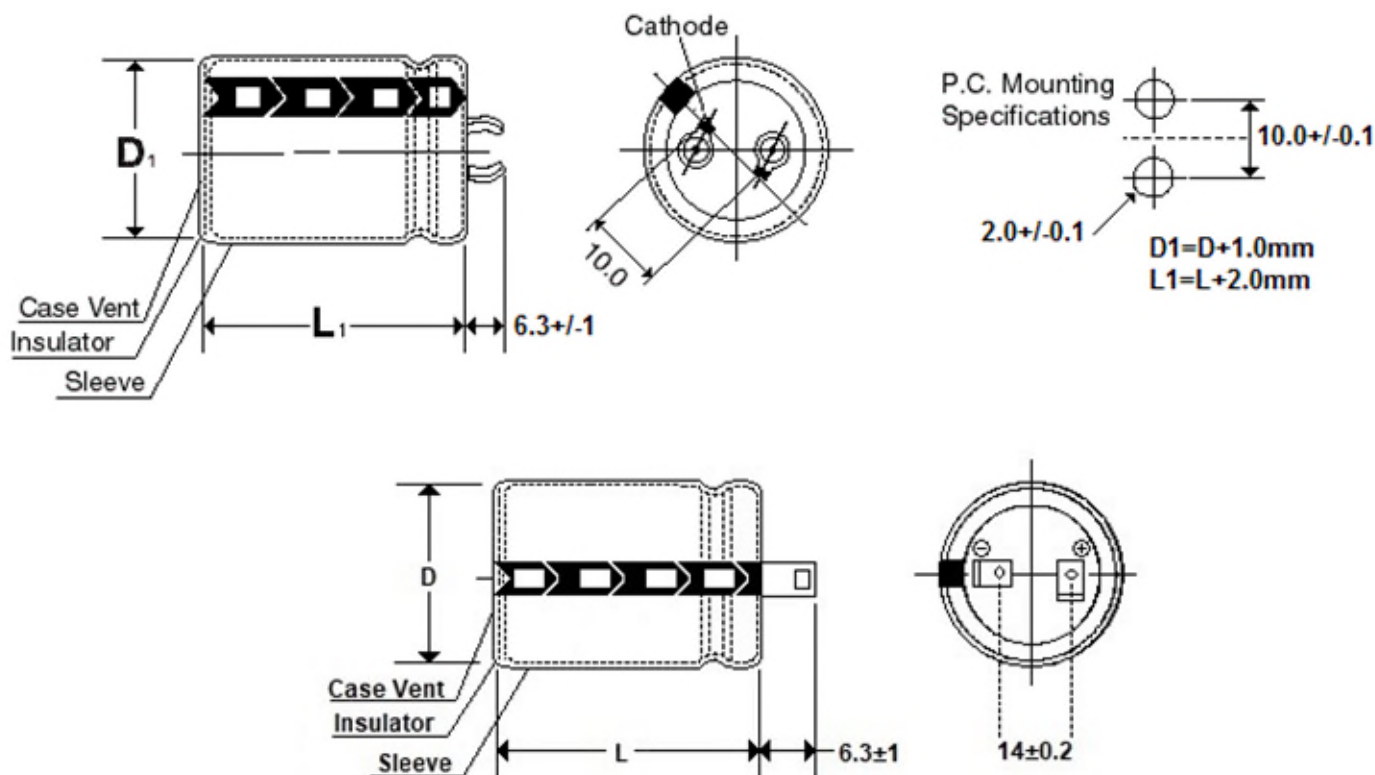
### Diameter 6.3mm to 18mm



| 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

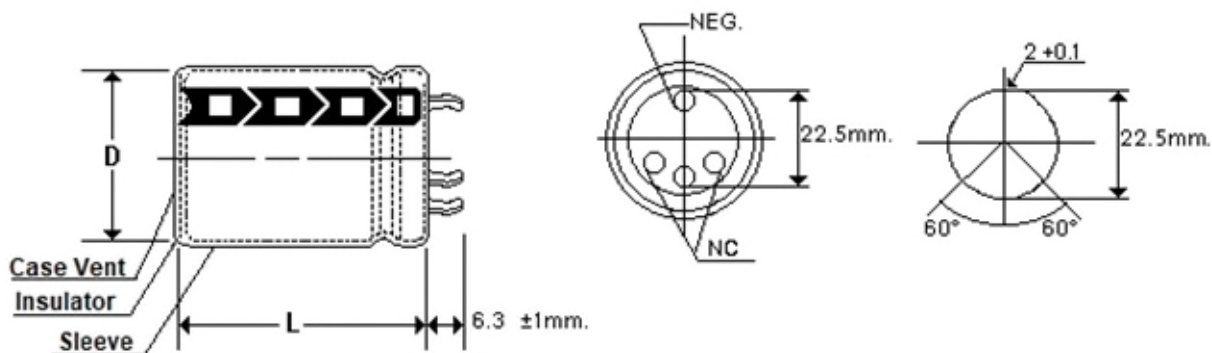
### Capacitance 100F to 350F



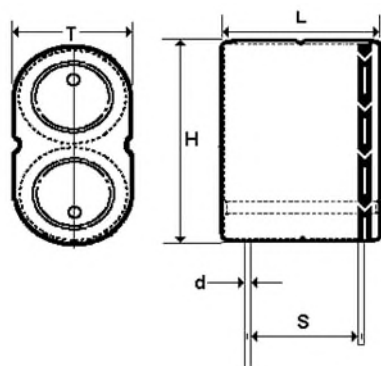
\*Lead style L available for 350F



### Capacitance 400F to 600F

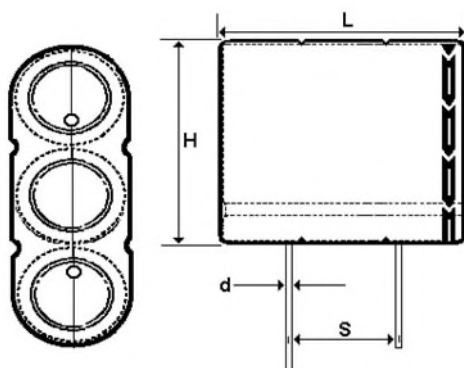


### Capacitance 0.5F to 5F 5.5 Volts



| 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) ( $\Delta T=15^{\circ}\text{C}$ ) | 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<br>(F) | IC PART NUMBER | Weight<br>(grams) | Volume<br>(mL) | Dims<br>DxL<br>LxHxT<br>(mm) | Lead<br>Spacing<br>S<br>(mm) | Lead<br>Diameter<br>d<br>(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                           |