

# Robot DC Gear Head Motor Datasheet

SKU KIT-MTR-36-06-180

<http://www.trossenrobotics.com>

8/1/2012

**Product** 37mm  
**SKU** KIT-MTR-36-06-180

**Rated Voltage** 6v  
**Voltage Range** 6 - 8.4V

**Gearbox** 40:1  
**Shaft** 6mm Diameter/25mm Long

**No Load RPM** 212 +/- 10%  
**No Load Current** 400mA  
**Rated Load RPM** 163 +/- 10%  
**Rated Load Torque** 3 kg.cm  
**Rated Load Current** =< 3 Amps  
**Stall Current** 6 Amps

**Encoder PPR** 13 PPR  
**Encoder Resolution** 520 ticks/revolution  
**Cable** 6-pin / 300mm  
2.54mm JST Connector

**Conn Housing** [455-1162-ND](#)  
**Conn Terminal** [455-2148-1-ND](#)  
**Conn Header** [455-1708-ND](#)

|    | Power Consumption |       |        | Torque |       | Output |       | Effeciency |
|----|-------------------|-------|--------|--------|-------|--------|-------|------------|
|    | Volts             | Amps  | Watts  | N.m    | Kg.cm | RPM    | W     |            |
| 1  | 5.931             | 0.345 | 2.045  | 0.001  | 0.010 | 212.0  | 0.000 | 0.0        |
| 2  | 5.929             | 0.360 | 2.132  | 0.003  | 0.031 | 211.9  | 0.067 | 3.1        |
| 3  | 5.927             | 0.377 | 2.236  | 0.005  | 0.051 | 211.5  | 0.111 | 5.0        |
| 4  | 5.927             | 0.385 | 2.279  | 0.007  | 0.071 | 210.8  | 0.154 | 6.8        |
| 5  | 5.928             | 0.386 | 2.290  | 0.009  | 0.092 | 210.6  | 0.176 | 7.7        |
| 6  | 5.927             | 0.391 | 2.316  | 0.009  | 0.092 | 210.6  | 0.198 | 8.6        |
| 7  | 5.925             | 0.401 | 2.375  | 0.011  | 0.112 | 210.4  | 0.220 | 9.3        |
| 8  | 5.924             | 0.412 | 2.443  | 0.013  | 0.133 | 210.2  | 0.286 | 11.7       |
| 9  | 5.923             | 0.433 | 2.567  | 0.016  | 0.163 | 209.9  | 0.330 | 12.8       |
| 10 | 5.923             | 0.458 | 2.715  | 0.022  | 0.224 | 209.1  | 0.460 | 16.9       |
| 11 | 5.923             | 0.489 | 2.899  | 0.027  | 0.275 | 208.1  | 0.566 | 19.5       |
| 12 | 5.922             | 0.517 | 3.064  | 0.032  | 0.326 | 207.3  | 0.673 | 22.0       |
| 13 | 5.919             | 0.558 | 3.304  | 0.037  | 0.377 | 206.4  | 0.778 | 23.5       |
| 14 | 5.914             | 0.603 | 3.567  | 0.048  | 0.489 | 204.5  | 1.028 | 28.8       |
| 15 | 5.912             | 0.645 | 3.810  | 0.057  | 0.581 | 203.2  | 1.191 | 31.3       |
| 16 | 5.912             | 0.702 | 4.148  | 0.066  | 0.673 | 202.0  | 1.396 | 33.7       |
| 17 | 5.908             | 0.760 | 4.492  | 0.073  | 0.744 | 200.0  | 1.529 | 34.0       |
| 18 | 5.902             | 0.813 | 4.796  | 0.082  | 0.836 | 198.7  | 1.706 | 35.6       |
| 19 | 5.901             | 0.879 | 5.187  | 0.098  | 0.999 | 196.4  | 1.995 | 38.5       |
| 20 | 5.898             | 0.946 | 5.577  | 0.109  | 1.111 | 194.6  | 2.200 | 39.5       |
| 21 | 5.891             | 1.019 | 6.004  | 0.118  | 1.203 | 193.1  | 2.365 | 39.4       |
| 22 | 5.889             | 1.080 | 6.358  | 0.128  | 1.305 | 191.2  | 2.562 | 40.3       |
| 23 | 5.886             | 1.171 | 6.895  | 0.147  | 1.499 | 188.5  | 2.901 | 42.1       |
| 24 | 5.880             | 1.256 | 7.383  | 0.160  | 1.632 | 186.2  | 3.119 | 42.3       |
| 25 | 5.878             | 1.326 | 7.793  | 0.173  | 1.764 | 184.4  | 3.340 | 42.9       |
| 26 | 5.870             | 1.417 | 8.320  | 0.185  | 1.886 | 182.5  | 3.535 | 42.5       |
| 27 | 5.867             | 1.512 | 8.869  | 0.196  | 1.999 | 180.4  | 3.702 | 41.7       |
| 28 | 5.862             | 1.589 | 9.315  | 0.217  | 2.213 | 177.2  | 4.007 | 43.0       |
| 29 | 5.857             | 1.692 | 9.912  | 0.231  | 2.356 | 175.0  | 4.214 | 42.5       |
| 30 | 5.852             | 1.797 | 10.520 | 0.244  | 2.488 | 172.2  | 4.381 | 41.7       |
| 31 | 5.846             | 1.896 | 11.080 | 0.256  | 2.610 | 170.3  | 4.547 | 41.0       |
| 32 | 5.842             | 1.997 | 11.660 | 0.277  | 2.825 | 166.6  | 4.832 | 41.4       |
| 33 | 5.835             | 2.097 | 12.240 | 0.292  | 2.978 | 163.9  | 4.994 | 40.8       |
| 34 | 5.831             | 2.191 | 12.780 | 0.295  | 3.008 | 163.3  | 5.027 | 39.3       |
| 35 | 5.824             | 2.315 | 13.480 | 0.320  | 3.263 | 159.9  | 5.357 | 39.7       |