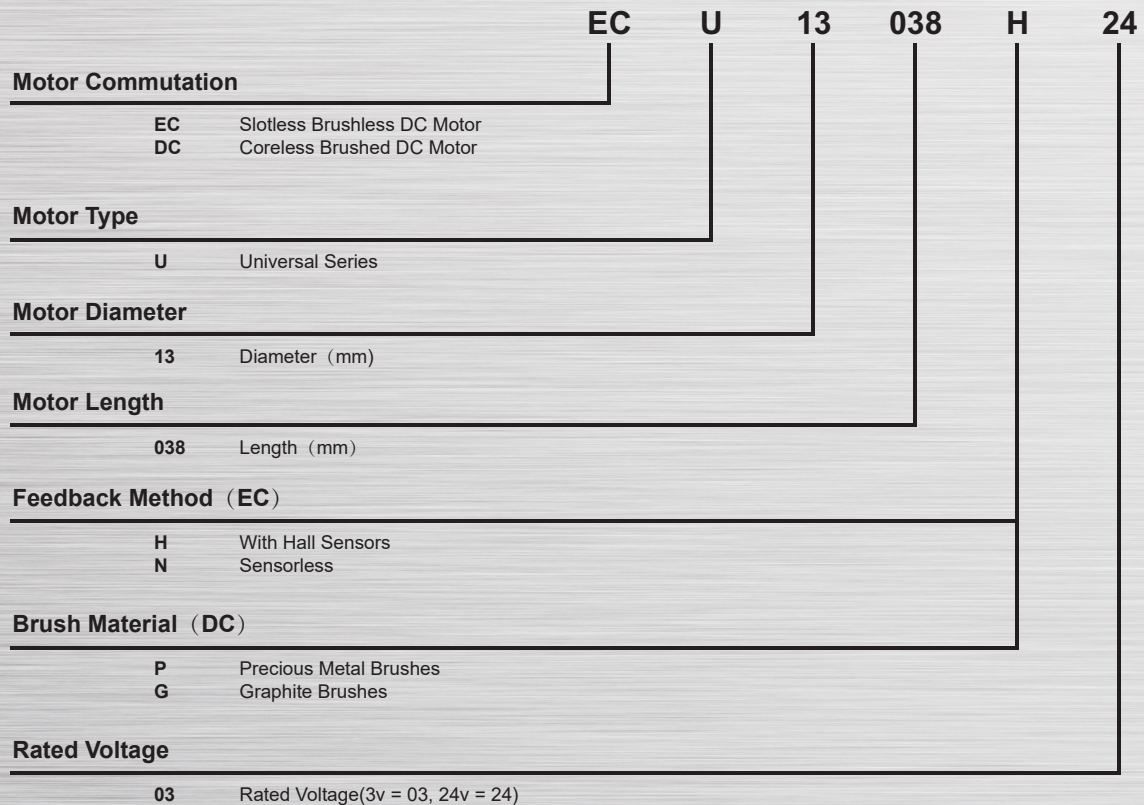


# Product Feature

MOONS' EC motor and DC motor use independent patented ironless winding. this special design can bring high speed, high torque and low noise. Because of no cogging and compact structure, we can get smoother running at high or low speed, more accurate control, higher efficiency and higher power density.

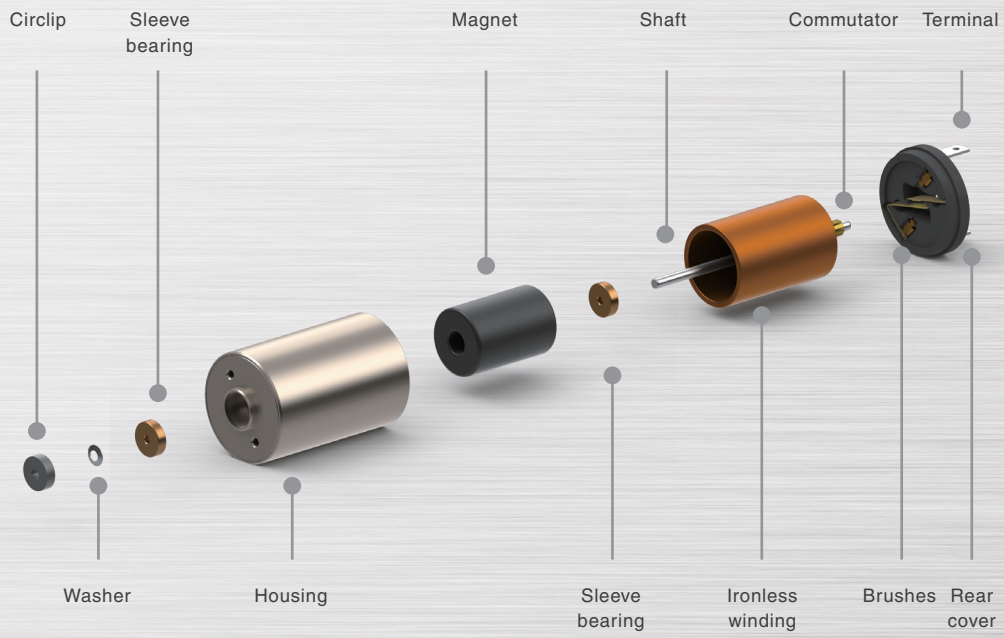
- Ironless Winding
- Small Size
- High Torque
- High Speed

## Product Code

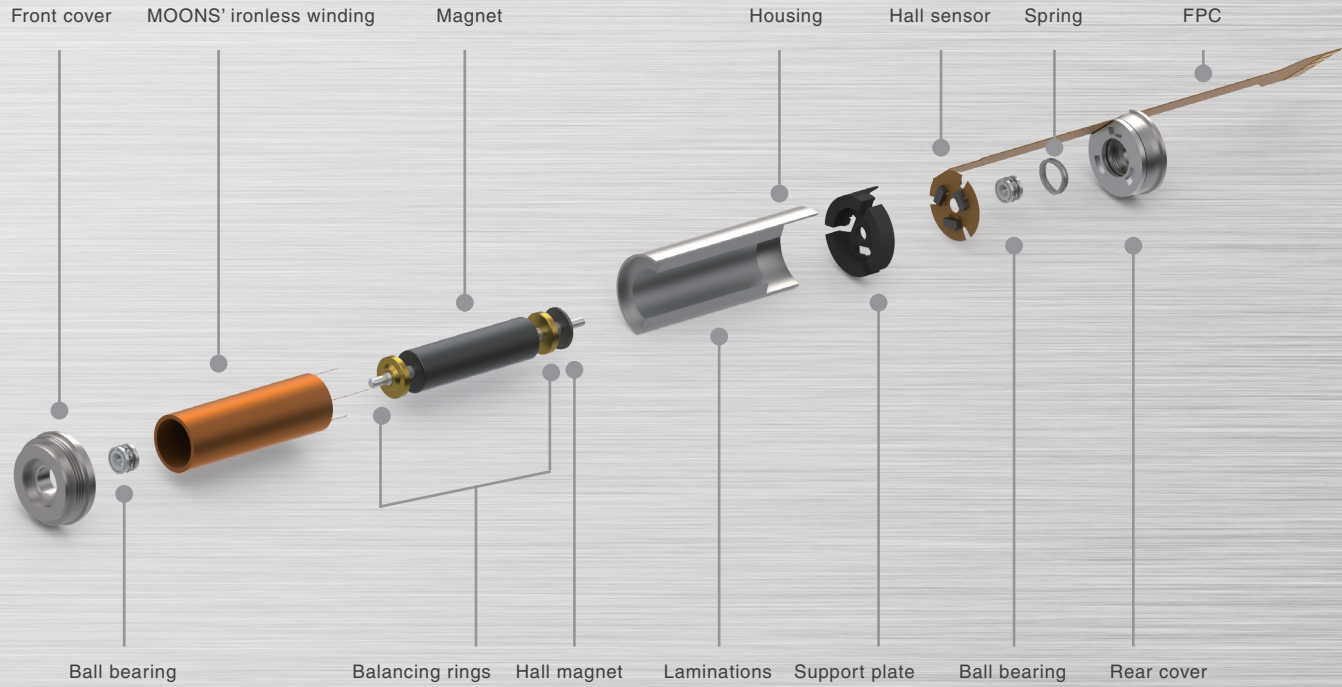




# DC Series Motor Structure



# EC Series Motor Structure





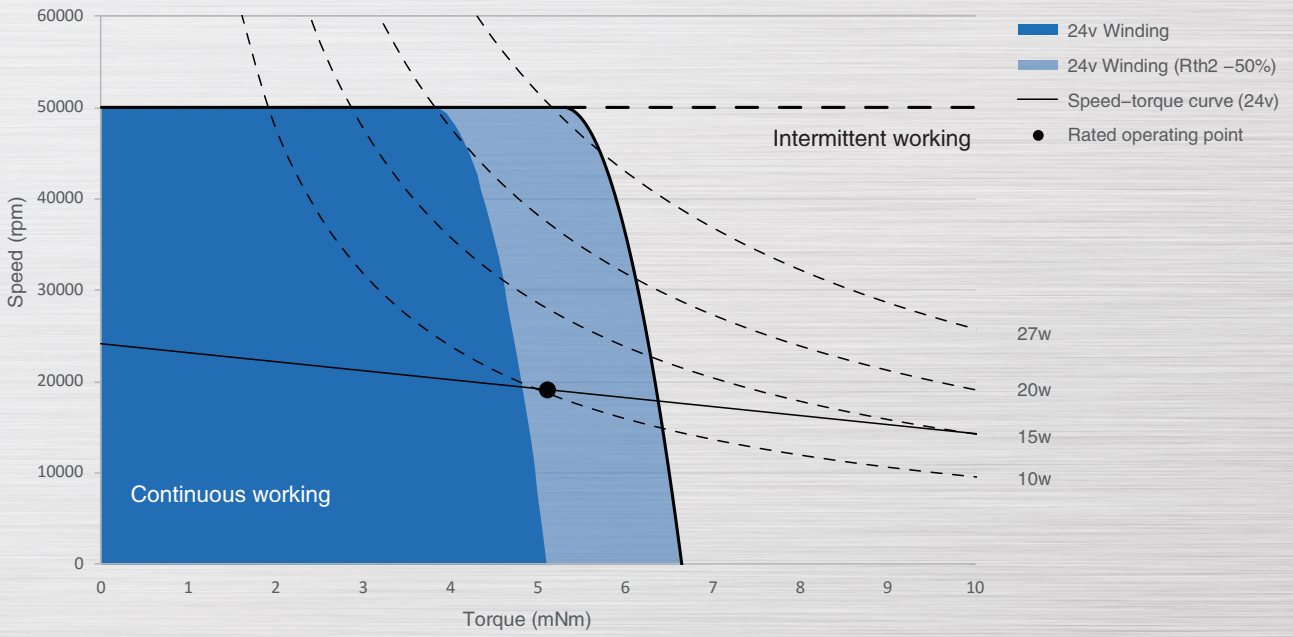
# ECU13038 $\varnothing$ 13mm 10/20W

Motor Data		Part Numbers					
With hall sensors		ECU13038H06	ECU13038H09	ECU13038H12	ECU13038H18	ECU13038H24	ECU13038H36
Sensorless		ECU13038N06	ECU13038N09	ECU13038N12	ECU13038N18	ECU13038N24	ECU13038N36
Nominal voltage	V	6	9	12	18	24	36
No load speed	rpm	24600	24600	24700	25400	24700	27000
No load current	mA	200	135	97	71	52	41
Rated speed	rpm	18000	19000	19000	19000	19900	22000
Rated torque	mNm	5.13	5.55	5.18	5.50	5.13	5.40
Rated current	A	2.23	1.70	1.12	0.81	0.55	0.45
Stall torque	mNm	21.23	25.87	23.71	28.70	24.63	28.57
Stall current	A	9.23	7.63	5.11	4.19	2.64	2.28
Max efficiency	%	74	76	75	76	74	77
Terminal Resistance	Ohm	0.65	1.18	2.35	4.30	9.09	15.8
Terminal Inductance	mH	0.010	0.024	0.041	0.085	0.159	0.299
Torque constant	mNm / A	2.30	3.39	4.64	6.85	9.33	12.53
Speed constant	rpm / V	4100	2733	2058	1411	1029	750
Speed/torque gradient	rpm / mNm	1159	951	1042	885	1003	945
Mechanical time constant ms		3.95	3.15	3.60	3.00	3.45	3.10

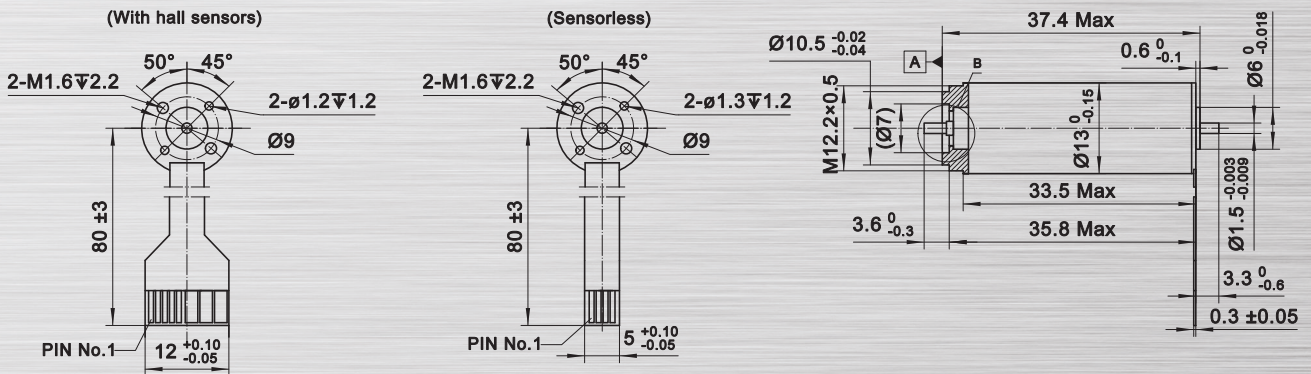
## Specification

Max speed	rpm	50000
Rotor inertia	gcm <sup>2</sup>	0.325
Number of pole pairs		1
Ambient temperature	° C	-40~+100
Max winding temperature	° C	155
Thermal resistance		
Housing - Ambient	° C/ W	25.2
Winding - Housing	° C/ W	1.27
Thermal time constant		
Motor	s	254
Winding	s	0.64
Max axial load	N	0.8
Max radial load	N	4
Weight	g	29

## Operating Range



## Dimension



	With hall sensors	Sensorless
PIN No.	Signal	Signal
1	4.5-24VDC	Winding 1
2	Hall 3	Winding 2
3	Hall 1	Winding 3
4	Hall 2	N.C.
5	GND	
6	Winding 3	
7	Winding 2	
8	Winding 1	

	With hall sensors	Sensorless
Connection	Part number	Part number
Tyco	1-84959-3	84959-4
Molex	52207-1133	52207-0433
Molex	52089-1119	52089-0419

FPC, 11-pol, Pitch 1.0mm, top contact style.

