

# Flat DC-Micromotors

## Precious Metal Commutation

0,3 mNm

### Series 1506 ... SR

		1506 N	003 SR	006 SR	012 SR	
1	Nominal voltage	$U_N$	3	6	12	V
2	Terminal resistance	R	13,5	54,7	155	
3	Output power	$P_{2 \max}$	0,15	0,15	0,22	W
4	Efficiency, max.	$\eta_{\max}$	62	63	67	%
5	No-load speed	$n_0$	11 100	11 800	12 800	rpm
6	No-load current (with shaft $\varnothing$ 0,8 mm)	$I_0$	0,01	0,005	0,003	A
7	Stall torque	$M_H$	0,52	0,49	0,64	mNm
8	Friction torque	$M_{fr}$	0,02	0,02	0,02	mNm
9	Speed constant	$k_n$	3 884	2 053	1 107	rpm/V
10	Back-EMF constant	$k_E$	0,257	0,487	0,903	mV/rpm
11	Torque constant	$k_M$	2,46	4,65	8,63	mNm/A
12	Current constant	$k_i$	0,407	0,215	0,116	A/mNm
13	Slope of n-M curve	$\Delta n / \Delta M$	21 333	24 135	19 947	rpm/mNm
14	Rotor inductance	L	275	1 157	3 550	$\mu$ H
15	Mechanical time constant	$\tau_m$	17	19	16	ms
16	Rotor inertia	J	0,08	0,08	0,08	gcm <sup>2</sup>
17	Angular acceleration	$\alpha_{\max}$	68	63	83	$\cdot 10^3 \text{rad/s}^2$
18	Thermal resistance	$R_{th 1} / R_{th 2}$	25 / 35			K/W
19	Thermal time constant	$\tau_{w1} / \tau_{w2}$	4,5 / 48,4			s
20	Operating temperature range:					
	- motor		-25 ... +80			°C
	- rotor, max. permissible		+85			°C
21	Shaft bearings		sintered bearings			
22	Shaft load max.:					
	- with shaft diameter		0,8			mm
	- radial at 3 000 rpm (3 mm from bearing)		0,5			N
	- axial at 3 000 rpm		0,1			N
	- axial at standstill		10			N
23	Shaft play					
	- radial		0,03			mm
	- axial		0,2			mm
24	Housing material		plastic			
25	Weight		4,3			g
26	Direction of rotation		clockwise, viewed from the front face			
<b>Recommended values - mathematically independent of each other</b>						
27	Speed up to	$n_{e \max}$	10 000	10 000	10 000	rpm
28	Torque up to	$M_{e \max}$	0,3	0,3	0,3	mNm
29	Current up to (thermal limits)	$I_{e \max}$	0,122	0,064	0,035	A

