

Thin Profile DC-Micromotors

with flat ironless rotor

0,3 mNm

Series 1506 ... SR

	1506 N	003 SR	006 SR	012 SR	
Nominal voltage	U_N	3	6	12	Volt
Terminal resistance	R	13,5	54,7	155	Ω
Output power	$P_{2 \text{ max.}}$	0,15	0,15	0,22	W
Efficiency	$\eta_{\text{ max.}}$	62	63	67	%
No-load speed	n_o	11 100	11 800	12 800	rpm
No-load current (with shaft \varnothing 0,8 mm)	I_o	0,010	0,005	0,003	A
Stall torque	M_H	0,52	0,49	0,64	mNm
Friction torque	M_R	0,02	0,02	0,02	mNm
Speed constant	k_n	3 884	2 053	1 107	rpm/V
Back-EMF constant	k_E	0,257	0,487	0,903	mV/rpm
Torque constant	k_M	2,46	4,65	8,63	mNm/A
Current constant	k_i	0,407	0,215	0,116	A/mNm
Slope of n-M curve	$\Delta n / \Delta M$	21 333	24 135	19 947	rpm/mNm
Rotor inductance	L	275	1 157	3 550	μH
Mechanical time constant	τ_m	17	19	16	ms
Rotor inertia	J	0,08	0,08	0,08	gcm^2
Angular acceleration	$\alpha_{\text{ max.}}$	68	63	83	$\cdot 10^3 \text{ rad/s}^2$
Thermal resistance	$R_{\text{th} 1} / R_{\text{th} 2}$	25 / 35			K/W
Thermal time constant	τ_{w1} / τ_{w2}	4,5 / 48,4			s
Operating temperature range:					
– motor		- 30 ... + 80			$^{\circ}\text{C}$
– rotor, max. permissible		+ 85			$^{\circ}\text{C}$
Shaft bearings		sintered sleeves bearings			
Shaft load max.:					
– with shaft diameter		0,8			mm
– radial at 3000 rpm (3 mm from bearing)		0,5			N
– axial at 3000 rpm		0,1			N
– axial at standstill		10			N
Shaft play:					
– radial	\leq	0,03			mm
– axial	\leq	0,2			mm
Housing material		plastic			
Weight		4,3			g
Direction of rotation		clockwise, viewed from the front face			

Recommended values - mathematically independent of each other						
Speed up to	$n_{e \text{ max.}}$		10 000	10 000	10 000	rpm
Torque up to	$M_{e \text{ max.}}$		0,3	0,3	0,3	mNm
Current up to (thermal limits)	$I_{e \text{ max.}}$		0,122	0,064	0,035	A

