

# Brushless DC-Micromotors

## 0,023 mNm

sensorless  
smoovy® Technology

For combination with  
Gearheads:  
03A  
Linear Actuators:  
03A S3  
Drive Electronics:  
Speed controller

### Series 0308 ... B

	0308 H		003 B		
1 Nominal voltage	$U_N$		3		Volt
2 Terminal resistance, phase-phase	R		33,5		$\Omega$
3 Output power <sup>1)</sup>	$P_{2 \max.}$		0,04		W
4 Efficiency	$\eta_{\max.}$		16,94		%
5 No-load speed	$n_0$		60 500		rpm
6 No-load current (with shaft $\varnothing$ 0,6 mm)	$I_0$		0,029		A
7 Stall torque	$M_H$		0,024		mNm
8 Friction torque, static	$C_0$		$1,77 \cdot 10^{-3}$		mNm
9 Friction torque, dynamic	$C_v$		$1,09 \cdot 10^{-7}$		mNm/rpm
10 Speed constant	$k_n$		33 043		rpm/V
11 Back-EMF constant	$k_E$		0,03		mV/rpm
12 Torque constant	$k_M$		0,289		mNm/A
13 Current constant	$k_I$		3,46		A/mNm
14 Slope of n-M curve	$\Delta n / \Delta M$		$3,8 \cdot 10^6$		rpm/mNm
15 Terminal inductance, phase-phase	L		60		$\mu H$
16 Mechanical time constant	$\tau_m$		8		ms
17 Rotor inertia	J		$2 \cdot 10^{-4}$		gcm <sup>2</sup>
18 Angular acceleration	$\alpha_{\max.}$		1 200		$\cdot 10^3 \text{ rad/s}^2$
19 Thermal resistance	$R_{th 1} / R_{th 2}$	29 / 188			K/W
20 Thermal time constant	$\tau_{w1} / \tau_{w2}$	0,4 / 8			s
21 Operating temperature range		- 30 ... + 60			°C
22 Shaft bearings		jewel bearings			
23 Shaft load max.:					
– radial at 3 000 (1 mm from mounting flange)		0,2			N
– axial at 3 000 rpm (push-on only)		0,2			N
– axial at standstill (push-on only)		2			N
24 Shaft play:					
– radial	$\leq$	0,03			mm
– axial	$\leq$	0,15			mm
25 Housing material		Nickel alloy			
26 Weight		0,31			g
27 Direction of rotation		electronically reversible			
<b>Recommended values - mathematically independent of each other</b>					
28 Speed up to <sup>2)</sup>	$n_e \max.$		84 000		rpm
29 Torque up to <sup>1) 2)</sup>	$M_e \max.$		0,023		mNm
30 Current up to (thermal limits) <sup>1) 2)</sup>	$I_e \max.$		0,1		A

<sup>1)</sup> at 15 000 rpm

<sup>2)</sup> thermal resistance  $R_{th 2}$  not reduced

