

DC-Micromotors

2 mNm

Precious Metal Commutation

For combination with:
 Gearheads: 20/1, 22E, 22/2, 22/5, 22/6, 23/1
 Encoders: 20/21B, 03A, 03B, 10/09A, 10/09B,
 10/09BP, 5500, 5540

Series 2225 ... S

	2225 T	003 S	006 S	009 S	012 S	024 S	
1 Nominal voltage	U_N	3	6	9	12	24	Volt
2 Terminal resistance	R	1,3	9,0	12,0	27,0	102	Ω
3 Output power	$P_{2 \max.}$	1,69	0,97	1,64	1,29	1,36	W
4 Efficiency	$\eta_{\max.}$	79	78	79	76	77	%
5 No-load speed	n_o	8 000	6 200	9 500	8 400	9 500	rpm
6 No-load current (with shaft \varnothing 1,5 mm)	I_o	0,030	0,010	0,010	0,008	0,004	A
7 Stall torque	M_{H}	8,05	5,98	6,60	5,84	5,49	mNm
8 Friction torque	M_R	0,11	0,09	0,09	0,11	0,09	mNm
9 Speed constant	k_n	2 700	1 050	1 070	713	403	rpm/V
10 Back-EMF constant	k_E	0,370	0,953	0,935	1,400	2,480	mV/rpm
11 Torque constant	k_M	3,53	9,10	8,93	13,40	23,70	mNm/A
12 Current constant	k_I	0,283	0,110	0,112	0,075	0,042	A/mNm
13 Slope of n-M curve	$\Delta n/\Delta M$	994	1 040	1 440	1 440	1 730	rpm/mNm
14 Rotor inductance	L	50	350	350	700	2 000	μH
15 Mechanical time constant	τ_m	20	19	18	22	21	ms
16 Rotor inertia	J	1,90	1,80	1,20	1,50	1,20	gcm ²
17 Angular acceleration	$\alpha_{\max.}$	42	34	55	40	47	$\cdot 10^3 \text{rad/s}^2$
18 Thermal resistance	$R_{th 1} / R_{th 2}$	5 / 30					K/W
19 Thermal time constant	τ_{w1} / τ_{w2}	3,7 / 545					s
20 Operating temperature range:							
- motor		- 30 ... + 85 (optional - 55 ... + 125)					$^{\circ}C$
- rotor, max. permissible		+125					$^{\circ}C$
21 Shaft bearings		sintered bronze sleeves	ball bearings	ball bearings, preloaded			
22 Shaft load max.:		(standard)	(optional)	(optional)			
- with shaft diameter		1,5	2,0	2,0			mm
- radial at 3000 rpm (3 mm from bearing)		1,2	8	8			N
- axial at 3000 rpm		0,2	0,8	0,8			N
- axial at standstill		20	10	10			N
23 Shaft play:							
- radial	\leq	0,03	0,015	0,015			mm
- axial	\leq	0,2	0,2	0			mm
24 Housing material		steel, zinc galvanized and passivated					
25 Weight		44					g
26 Direction of rotation		clockwise, viewed from the front face					
Recommended values							
27 Speed up to	$n_{e \max.}$	8 000	8 000	8 000	8 000	8 000	rpm
28 Torque up to	$M_{e \max.}$	2	2	2	2	2	mNm
29 Current up to (thermal limits)	$I_{e \max.}$	1,250	0,450	0,400	0,250	0,140	A

