

# DC Motor Ø 23

# 1.13.078.XXX



Design	
Commutator	Copper/3-segments
RFI Protection	VDR; 2 capacitors
Insulation class	Winding F, otherwise A
Protection class	IP30
Commutation	carbon brushes
Armature	straight slot
Magnet system	Permanent magnets, 2-pole
Bearings	2 sintered bronze bearings
Housing	Steel, corrosion protected
End shields	brush end plastic drive end zinc die-cast

Type 1.13.078.XXX			011	012
<b>Characteristics*</b>				
Rated voltage	V	V	12	24
Rated power	$P_N$	W	4.3	4.3
Rated torque	$T_N$	mNm	10	10
Rated speed	$n_N$	rpm	4060	4100
Rated current	$I_N$	A	0.63	0.32

<b>No load characteristics*</b>				
No load speed	$n_o$	rpm	5900	6100
No load current	$I_o$	A	0.09	0.04

<b>Starting characteristics*</b>				
Starting torque	$T_s$	mNm	31	31
Starting current	$I_s$	A	1.8	0.9

<b>Performance characteristics*</b>				
max. Output power	$P_{max}$	W	5.0	5.0
max. Constant torque	$T_{max}$	mNm	6.0	6.0

<b>Motor parameters*</b>				
Weight	G	g	78	78
Rotor inertia	J	gcm <sup>2</sup>	8.1	8.1
Terminal resistance	R	Ohm	6.7	27
Mech. time constant	$\tau_m$	ms	18	19
Electr. time constant	$\tau_e$	ms	0.9	0.8
Speed regulation constant	$R_m$	rpm/mNm	184	198
Torque constant	$k_t$	mNm/A	18	35
Thermal resistance	$R_{th1}$	K/W	16	16
Thermal resistance	$R_{th2}$	K/W	18	18
Axial play		mm	0.05 - 0.7	0.05 - 0.7
Direction of rotation			bidirectional	

