Serie 2642 012 CR Electric Motor Datasheet

This datasheet is a copy from this internetpage.

Interactively adding your torque and speed requirements at this link allows you to determine the voltage, current, efficiency and motor temperature for your specific loadcase for this specific motor in just a few seconds.

Manufacturer typenumber	Serie 2642 012 CR
Manufacturer brand	Faulhaber
Commutation	brush
Short description of the motor	DC-micromotor graphite commutation

Performance data

Maximum rated output power motoraxis	P_{rated} [W]	22.100
Nominal terminal voltage	U_{nom} [V]	12.000
Motorconstant at standard temp. 22 °C	k [$^{Vs}/_{rad}$ or $^{Nm}/_{A}$]	1.690e-2
Maximum torque at standstill at nominal voltage	T_{stall} [Nm]	0.138
Maximum theoretical velocity motoraxis at no load (and no friction of motor and reduction) and nominal voltage	ω_0 [$^{rad}/_{s}$]	710.059
Maximum allowed velocity motoraxis	ω_{max} [$^{rad}/_{s}$]	6000.000
Maximum voltage allowed to prevent sparking due to brushed commutation	U_{max} [V]	12.000
Maximum output power equal to $^{1}/_{4}T_{stall}\omega_0$	P_{max} [W]	24.828

Mechanical data

Inertia of rotor	J_{rotor} [kgm^2]	1.100e-6
Maximum acceleration at standstill if no load or reduction is attached	max. accel [$^{rad}/_{s}2$]	1.253e+5
Constant friction torque of motor on motoraxis	T_{fric} [Nm]	0.002
Mechanical timeconstant	τ_{mech} [s]	5.585e-3

Electrical data

Resistance windings at standard temp. 22 °C	R [Ω]	1.450
Winding inductance measured at terminals of motor	L [H]	1.300e-4
Slope of the motor	S [$^{Nms}/_{rad}$]	1.970e-4
Electrical timeconstant	τ_{elec} [s]	8.966e-5

Thermal data

Maximum allowed temperature of windings	Θ_{max} [°C]	155.000
Maximum continuous current (thermal limit) at surround temp. 22 °C and at stillstand	$I_{max, thermal}$ [A]	2.144
Thermal resistance between rotor and housing motor	R_{th1} [$^{K}/_{W}$]	2.100
Thermal resistance between housing motor and ambient	R_{th2} [$^{K}/_{W}$]	11.000
Thermal contents between cupper windings and ambient	C_{th1} [$^{sW}/_{K}$]	4.762
Thermal contents between housing motor and ambient	C_{th2} [$^{sW}/_{K}$]	46.364
Thermal timeconstant between cupper windings and motor	τ_1 [s]	10.000
Thermal timeconstant between housing motor and ambient	τ_2 [s]	510.000

Magnet data

the material of the magnet	magnetmaterial	unknown
degrading of the magnetic flux density in percent per ^{o}C or K	TK_{Br} [%/K]	-1.424e-1

Remarks:

1. The derating of the magnetstrength is estimated from a hot and a cold motorconstant and the known temperature-difference between the two situations.
2. The vendor has not provided magnetmaterial. This means that the calculated temperature may be inaccurate.
3. The thermal data is from the situation where no additional heatsink is attached to the motorhouse.

The quality and completeness of the supplied information has quality index: B
This quality index is determined by specAmotor.com. Here is described what the quality index is.