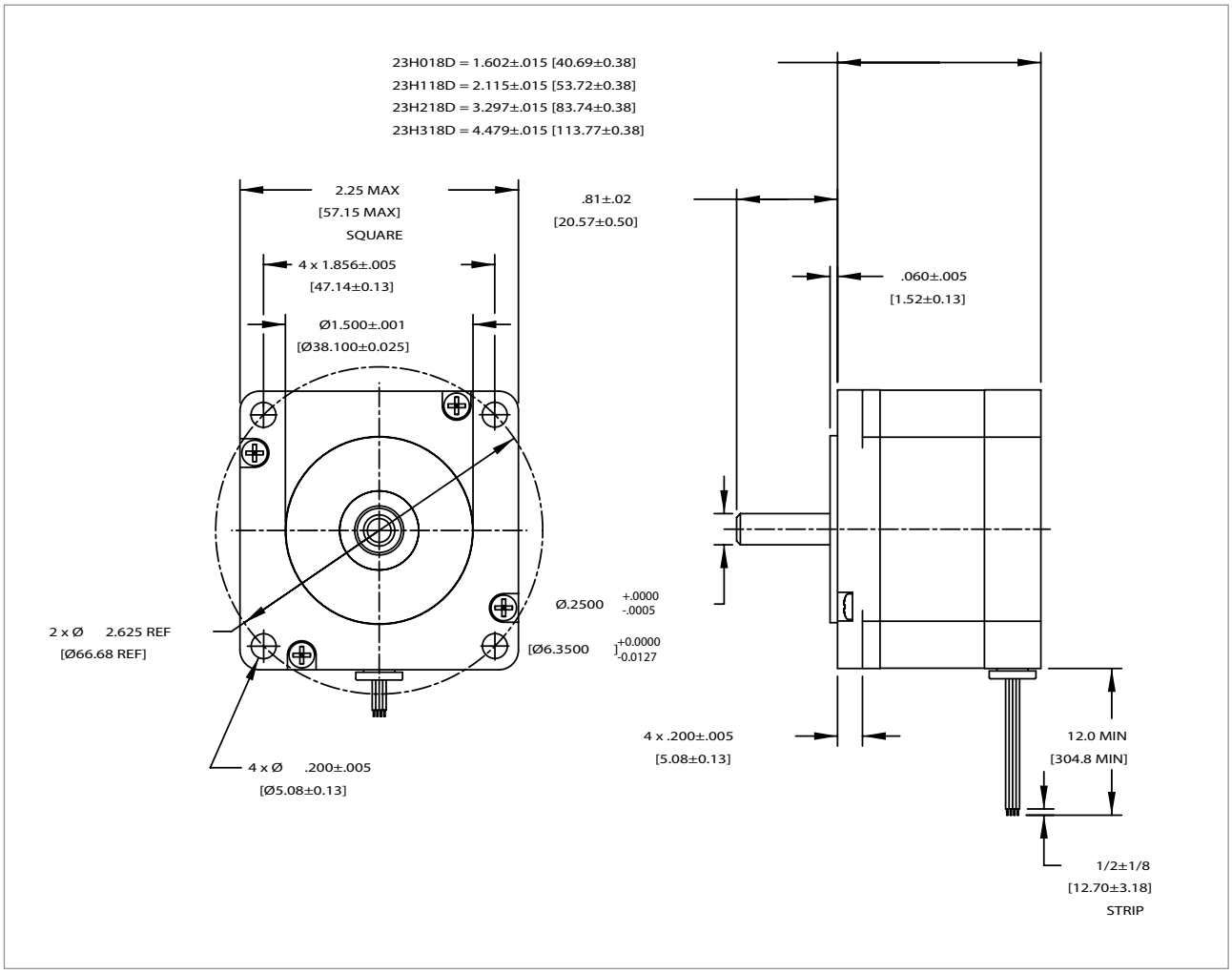
23HX18D


23H018D = 1.602±.015 [40.69±0.38]
23H118D = 2.115±.015 [53.72±0.38]
23H218D = 3.297±.015 [83.74±0.38]
23H318D = 4.479±.015 [113.77±0.38]
2.25 MAX
[57.15 MAX]
SQUARE
.81±.02
[20.57±0.50]
4 x 1.856±.005
[47.14±0.13]
Ø1.500±.001
[Ø38.100±0.025]
.060±.005
[1.52±0.13]
Ø.2500 +.0000 -.0005
[Ø6.3500 +0.0000 -0.0127]
2 x Ø 2.625 REF
[Ø66.68 REF]
4 x .200±.005
[5.08±0.13]
12.0 MIN
[304.8 MIN]
4 x Ø .200±.005
[Ø5.08±0.13]
1/2±1/8
[12.70±3.18]
STRIP

23HX18D

Motor Part Number			23HX18D10B	23HX18D20B	23HX18D30B
Rated voltage	Short Stack	vdc	5.70	2.86	1.89
	1 Stack	vdc	6.84	3.42	2.28
	2 Stack	vdc	8.50	4.26	2.82
	3 Stack	vdc	10.75	5.38	3.57
Resistance per phase, ± 10%	Short Stack	ohms	5.70	1.43	0.63
	1 Stack	ohms	6.84	1.71	0.76
	2 Stack	ohms	8.50	2.13	0.94
	3 Stack	ohms	10.75	2.69	1.19
Inductance per phase, typ	Short Stack	mH	11.15	2.66	1.21
	1 Stack	mH	25.56	6.10	2.78
	2 Stack	mH	34.28	8.33	3.92
	3 Stack	mH	43.52	13.35	4.99
Rated current per phase *		amps	1.0	2.0	3.0
Holding torque, typical *	Short Stack	oz-in / Nm		75 / 0.53	
	1 Stack	oz-in / Nm		180 / 1.27	
	2 Stack	oz-in / Nm		330 / 2.33	
	3 Stack	oz-in / Nm		400 / 2.82	
Detent torque, typical	Short Stack	oz-in / Nm		6.0 / 0.042	
	1 Stack	oz-in / Nm		9.0 / 0.064	
	2 Stack	oz-in / Nm		15.0 / 0.106	
	3 Stack	oz-in / Nm		18.0 / 0.127	
Thermal resistance	Short Stack	ºC/watt		3.99	
	1 Stack	ºC/watt		3.57	
	2 Stack	ºC/watt		2.62	
	3 Stack	ºC/watt		1.58	
Rotor moment of inertia	Short Stack	oz-in-s^2/ kg-cm^2		.0026 / 0.19	
	1 Stack	oz-in-s^2/ kg-cm^2		.0035 / 0.24	
	2 Stack	oz-in-s^2/ kg-cm^2		.0068 / 0.48	
	3 Stack	oz-in-s^2/ kg-cm^2		.0102 / 0.72	
Step angle, ± 5% *		degrees		1.8	
Steps per revolution *				200	
Ambient temperature range					
Operating		ºC		-20 ~ +40	
Storage		ºC		-40 ~ +85	
Bearing type				Ball bearing	
Insulation resisitance at 500vdc		Mohms		100 megohms	
Dielectric withstanding voltage		vac		1200 for 1 second	
Weight	Short Stack	lb / kg		1.0 / 0.45	
	1 Stack	lb / kg		1.4 / 0.64	
	2 Stack	lb / kg		2.4 / 1.09	
	3 Stack	lb / kg		3.4 / 1.55	
Shaft load ratings, max at 1500 rpm					
Radial		lb / kg		20 / 9 (at shaft center)	
Axial		lb / kg		50 / 23 (Both directions)	
Leadwires				AWG 22 UL 3266	
Temperature class, max				B (130°C)	
RoHS				COMPLIANT	

ALL MOTOR DATA VALUES AT 25ºC UNLESS OTHERWISE SPECIFIED
* ENERGISE AT RATED CURRENT, 2 PHASE ON

23HX18D

Motor Part Number			23HX18D10U	23HX18D20U	23HX18D30U
Rated voltage	Short Stack	vdc	5.70	2.86	1.89
	1 Stack	vdc	6.84	3.42	2.28
	2 Stack	vdc	8.50	4.26	2.82
	3 Stack	vdc	10.75	5.38	3.57
Resistance per phase, ± 10%	Short Stack	ohms	5.70	1.43	0.63
	1 Stack	ohms	6.84	1.71	0.76
	2 Stack	ohms	8.50	2.13	0.94
	3 Stack	ohms	10.75	2.69	1.19
Inductance per phase, typ	Short Stack	mH	7.06	1.66	0.76
	1 Stack	mH	13.10	2.97	1.46
	2 Stack	mH	21.32	5.33	1.97
	3 Stack	mH	26.79	6.44	3.34
Rated current per phase *		amps	1.0	2.0	3.0
Holding torque, typical *	Short Stack	oz-in / Nm		60 / 0.42	
	1 Stack	oz-in / Nm		135 / 0.95	
	2 Stack	oz-in / Nm		235 / 1.66	
	3 Stack	oz-in / Nm		300 / 2.12	
Detent torque, typical	Short Stack	oz-in / Nm		6.0 / 0.042	
	1 Stack	oz-in / Nm		9.0 / 0.064	
	2 Stack	oz-in / Nm		15.0 / 0.106	
	3 Stack	oz-in / Nm		18.0 / 0.127	
Thermal resistance	Short Stack	ºC/watt		3.99	
	1 Stack	ºC/watt		3.57	
	2 Stack	ºC/watt		2.62	
	3 Stack	ºC/watt		1.58	
Rotor moment of inertia	Short Stack	oz-in-s²/ kg-cm²		.0026 / 0.19	
	1 Stack	oz-in-s²/ kg-cm²		.0035 / 0.24	
	2 Stack	oz-in-s²/ kg-cm²		.0068 / 0.48	
	3 Stack	oz-in-s²/ kg-cm²		.0102 / 0.72	
Step angle, ± 5% *		degrees		1.8	
Steps per revolution *				200	
Ambient temperature range					
Operating		ºC		-20 ~ +40	
Storage		ºC		-40 ~ +85	
Bearing type				Ball bearing	
Insulation resisitance at 500vdc		Mohms		100 megohms	
Dielectric withstanding voltage		vac		1200 for 1 second	
Weight	Short Stack	lb / kg		1.0 / 0.45	
	1 Stack	lb / kg		1.4 / 0.64	
	2 Stack	lb / kg		2.4 / 1.09	
	3 Stack	lb / kg		3.4 / 1.55	
Shaft load ratings, max at 1500 rpm					
Radial		lb / kg		20 / 9 (at shaft center)	
Axial		lb / kg		50 / 23 (Both directions)	
Leadwires				AWG 22 UL 3266	
Temperature class, max				B (130°C)	
RoHS				COMPLIANT	

ALL MOTOR DATA VALUES AT 25ºC UNLESS OTHERWISE SPECIFIED
* ENERGISE AT RATED CURRENT, 2 PHASE ON

23HX18E

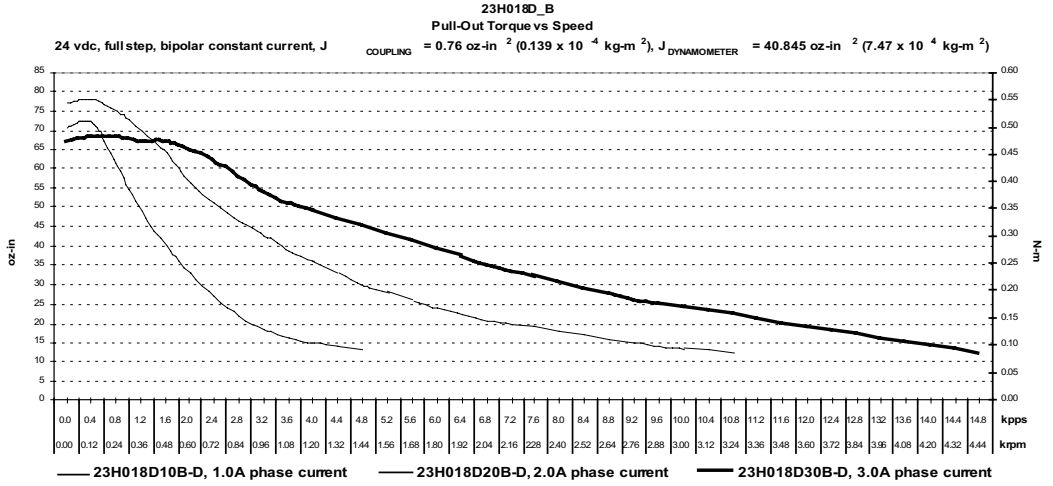
Motor Part Number			23HX18E10B	23HX18E20B	23HX18E30B
Rated voltage	Short Stack	vdc	5.70	2.86	1.89
	1 Stack	vdc	6.84	3.42	2.28
	2 Stack	vdc	8.50	4.26	2.82
	3 Stack	vdc	10.75	5.38	3.57
Resistance per phase, ± 10%	Short Stack	ohms	5.70	1.43	0.63
	1 Stack	ohms	6.84	1.71	0.76
	2 Stack	ohms	8.50	2.13	0.94
	3 Stack	ohms	10.75	2.69	1.19
Inductance per phase, typ	Short Stack	mH	11.15	2.66	1.21
	1 Stack	mH	25.56	6.10	2.78
	2 Stack	mH	34.28	8.33	3.92
	3 Stack	mH	43.52	13.35	4.99
Rated current per phase *		amps	1.0	2.0	3.0
Holding torque, typical *	Short Stack	oz-in / Nm		84 / 0.59	
	1 Stack	oz-in / Nm		227 / 1.60	
	2 Stack	oz-in / Nm		426 / 3.01	
	3 Stack	oz-in / Nm		524 / 3.70	
Detent torque, typical	Short Stack	oz-in / Nm		10.0 / 0.071	
	1 Stack	oz-in / Nm		15.0 / 0.106	
	2 Stack	oz-in / Nm		26.0 / 0.184	
	3 Stack	oz-in / Nm		31.0 / 0.219	
Thermal resistance	Short Stack	ºC/watt		3.99	
	1 Stack	ºC/watt		3.57	
	2 Stack	ºC/watt		2.62	
	3 Stack	ºC/watt		1.58	
Rotor moment of inertia	Short Stack	oz-in-s^2/ kg-cm^2		.0026 / 0.19	
	1 Stack	oz-in-s^2/ kg-cm^2		.0035 / 0.24	
	2 Stack	oz-in-s^2/ kg-cm^2		.0068 / 0.48	
	3 Stack	oz-in-s^2/ kg-cm^2		.0102 / 0.72	
Step angle, ± 5% *		degrees		1.8	
Steps per revolution *				200	
Ambient temperature range					
Operating		ºC		-20 ~ +40	
Storage		ºC		-40 ~ +85	
Bearing type				Ball bearing	
Insulation resisitance at 500vdc		Mohms		100 megohms	
Dielectric withstanding voltage		vac		1200 for 1 second	
Weight	Short Stack	lb / kg		1.0 / 0.45	
	1 Stack	lb / kg		1.5 / 0.68	
	2 Stack	lb / kg		2.5 / 1.14	
	3 Stack	lb / kg		3.6 / 1.64	
Shaft load ratings, max at 1500 rpm					
Radial		lb / kg		20 / 9 (at shaft center)	
Axial		lb / kg		50 / 23 (Both directions)	
Leadwires				AWG 22 UL 3266	
Temperature class, max				B (130°C)	
RoHS				COMPLIANT	

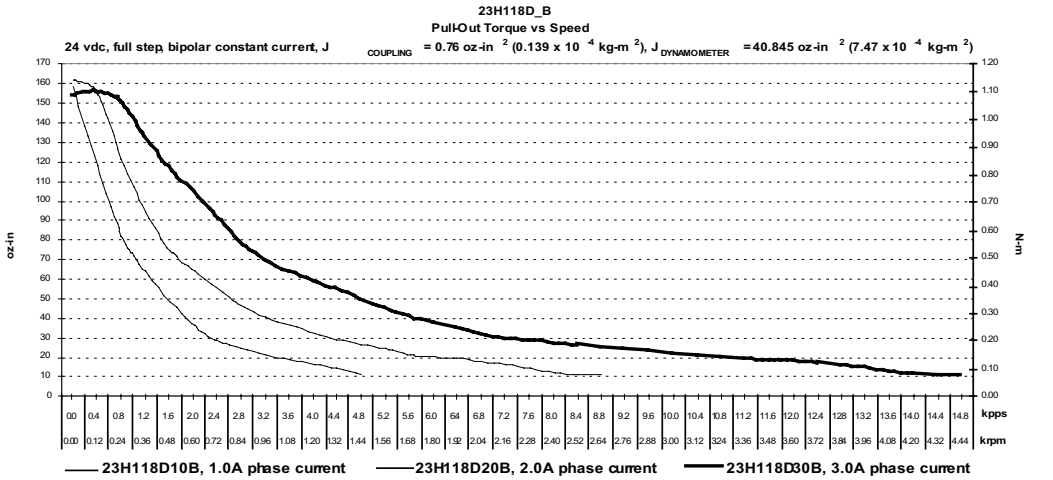
ALL MOTOR DATA VALUES AT 25ºC UNLESS OTHERWISE SPECIFIED
* ENERGISE AT RATED CURRENT, 2 PHASE ON

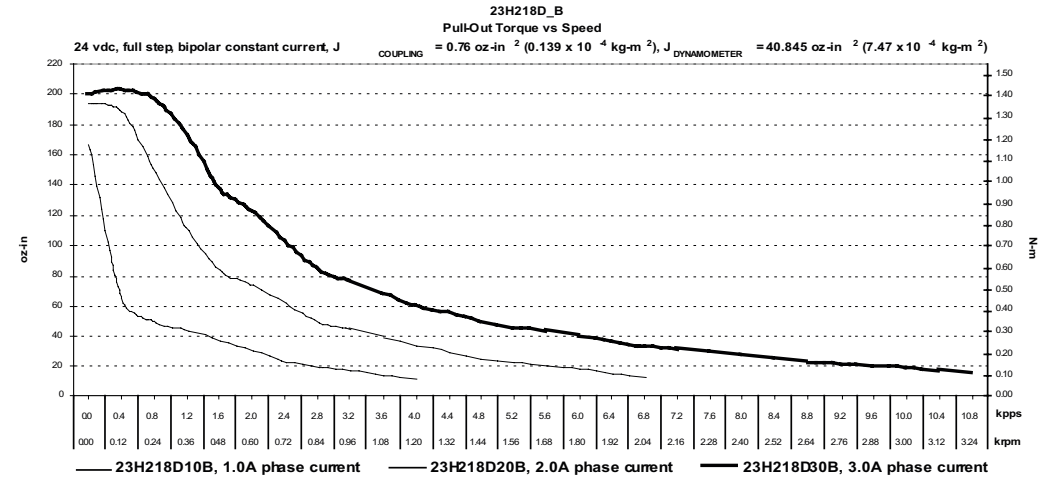
23HX18E

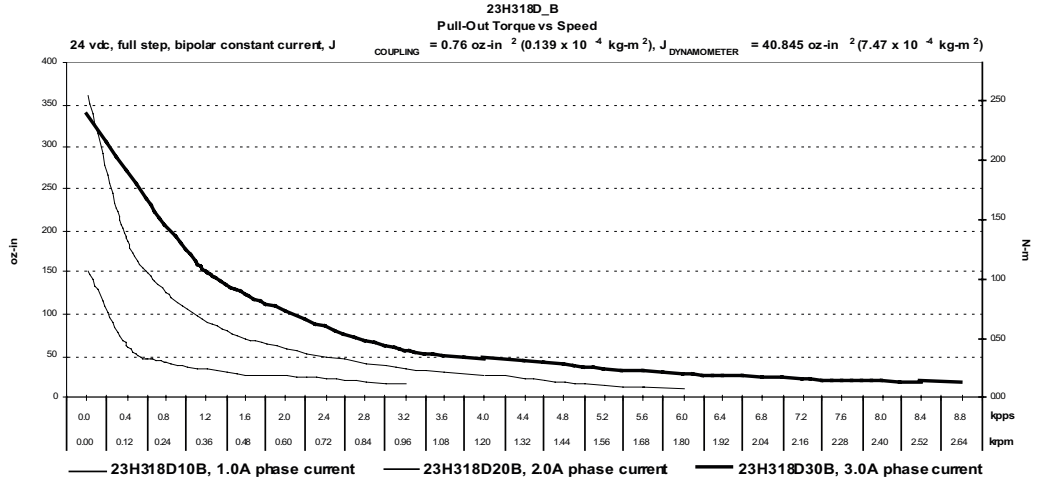
Motor Part Number			23HX18E10U	23HX18E20U	23HX18E30U
Rated voltage	Short Stack	vdc	5.70	2.86	1.89
	1 Stack	vdc	6.84	3.42	2.28
	2 Stack	vdc	8.50	4.26	2.82
	3 Stack	vdc	10.75	5.38	3.57
Resistance per phase, ± 10%	Short Stack	ohms	5.70	1.43	0.63
	1 Stack	ohms	6.84	1.71	0.76
	2 Stack	ohms	8.50	2.13	0.94
	3 Stack	ohms	10.75	2.69	1.19
Inductance per phase, typ	Short Stack	mH	7.06	1.66	0.76
	1 Stack	mH	13.10	2.97	1.46
	2 Stack	mH	21.32	5.33	1.97
	3 Stack	mH	26.79	6.44	3.34
Rated current per phase *		amps	1.0	2.0	3.0
Holding torque, typical *	Short Stack	oz-in / Nm		72 / 0.51	
	1 Stack	oz-in / Nm		170 / 1.20	
	2 Stack	oz-in / Nm		303 / 2.14	
	3 Stack	oz-in / Nm		393 / 2.78	
Detent torque, typical	Short Stack	oz-in / Nm		10.0 / 0.071	
	1 Stack	oz-in / Nm		15.0 / 0.106	
	2 Stack	oz-in / Nm		26.0 / 0.184	
	3 Stack	oz-in / Nm		31.0 / 0.219	
Thermal resistance	Short Stack	°C/watt		3.99	
	1 Stack	°C/watt		3.57	
	2 Stack	°C/watt		2.62	
	3 Stack	°C/watt		1.58	
Rotor moment of inertia	Short Stack	oz-in-s^2/ kg-cm^2		.0026 / 0.19	
	1 Stack	oz-in-s^2/ kg-cm^2		.0035 / 0.24	
	2 Stack	oz-in-s^2/ kg-cm^2		.0068 / 0.48	
	3 Stack	oz-in-s^2/ kg-cm^2		.0102 / 0.72	
Step angle, ± 5% *		degrees		1.8	
Steps per revolution *				200	
Ambient temperature range					
Operating		°C		-20 ~ +40	
Storage		°C		-40 ~ +85	
Bearing type				Ball bearing	
Insulation resisitance at 500vdc		Mohms		100 megohms	
Dielectric withstanding voltage		vac		1200 for 1 second	
Weight	Short Stack	lb / kg		1.0 / 0.45	
	1 Stack	lb / kg		1.5 / 0.68	
	2 Stack	lb / kg		2.5 / 1.14	
	3 Stack	lb / kg		3.6 / 1.64	
Shaft load ratings, max at 1500 rpm					
Radial		lb / kg		20 / 9 (at shaft center)	
Axial		lb / kg		50 / 23 (Both directions)	
Leadwires				AWG 22 UL 3266	
Temperature class, max				B (130°C)	
RoHS				COMPLIANT	

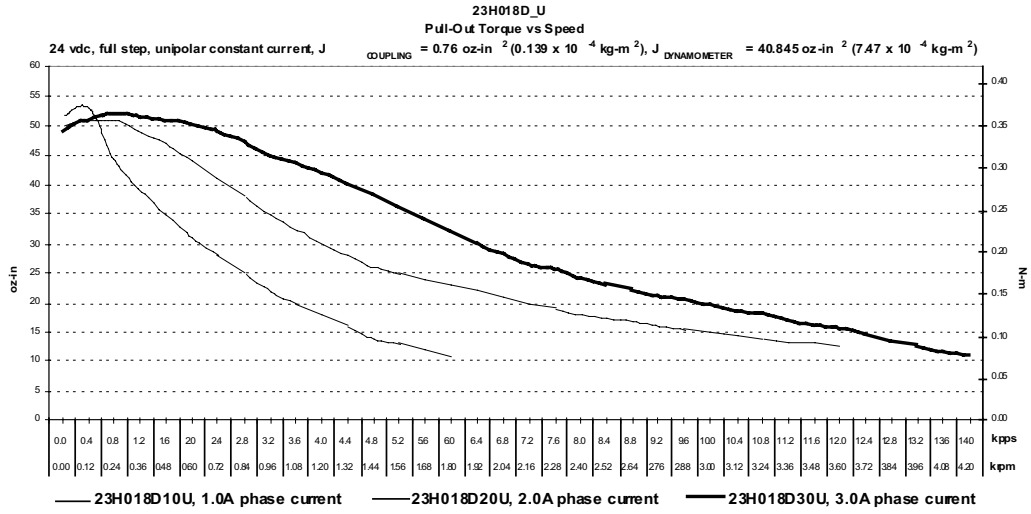
ALL MOTOR DATA VALUES AT 25°C UNLESS OTHERWISE SPECIFIED
* ENERGISE AT RATED CURRENT, 2 PHASE ON

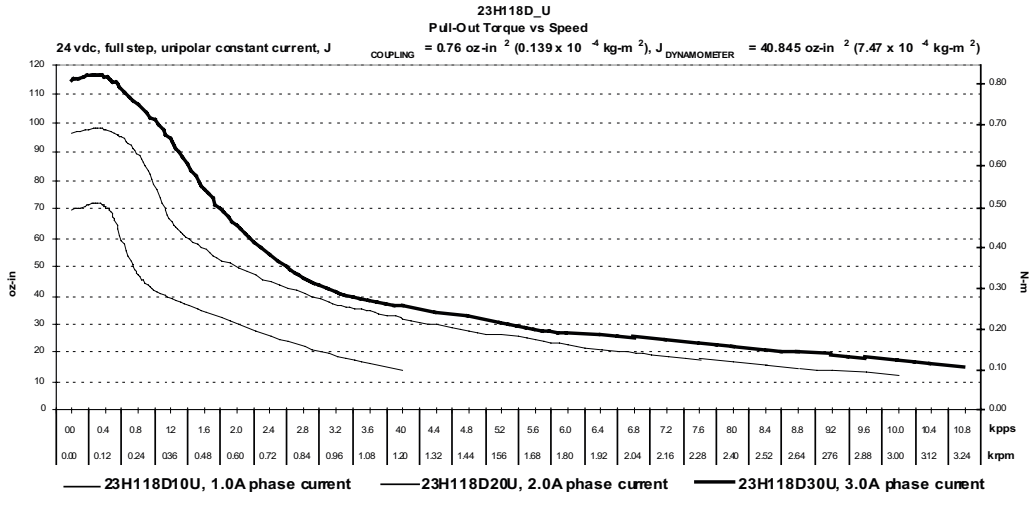

23H018D_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H018D10B-D, 1.0A phase current
23H018D20B-D, 2.0A phase current
23H018D30B-D, 3.0A phase current

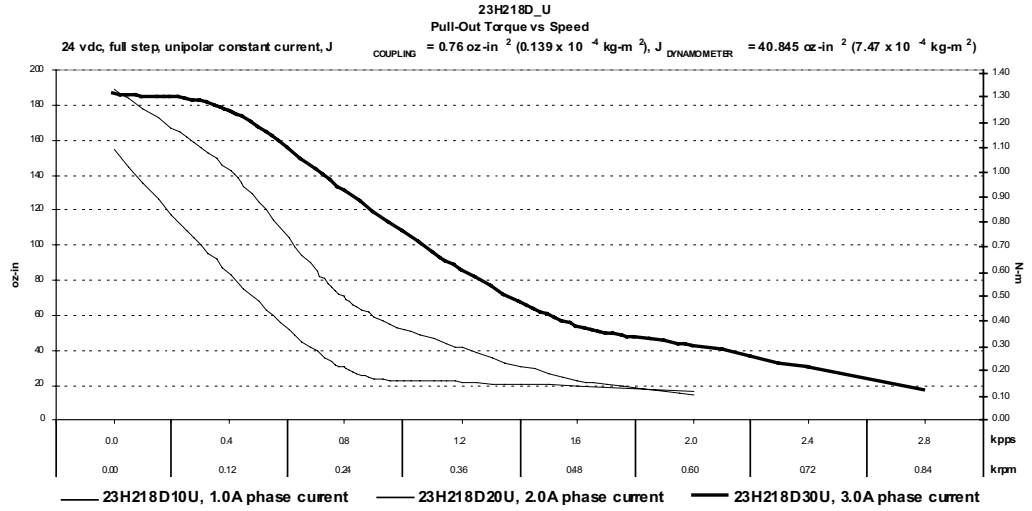

23H118D_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H118D10B, 1.0A phase current
23H118D20B, 2.0A phase current
23H118D30B, 3.0A phase current

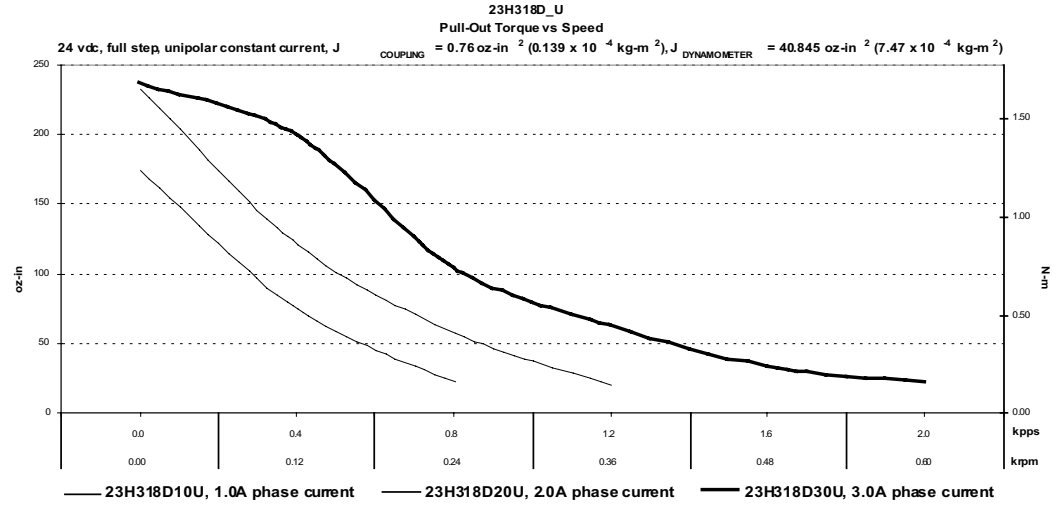

23H218D_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H218D10B, 1.0A phase current
23H218D20B, 2.0A phase current
23H218D30B, 3.0A phase current

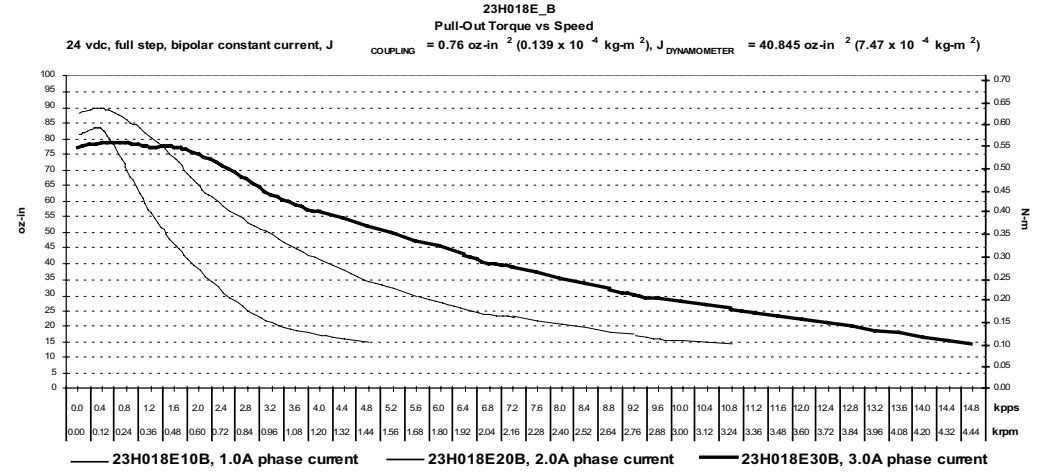

23H318D_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H318D10B, 1.0A phase current
23H318D20B, 2.0A phase current
23H318D30B, 3.0A phase current

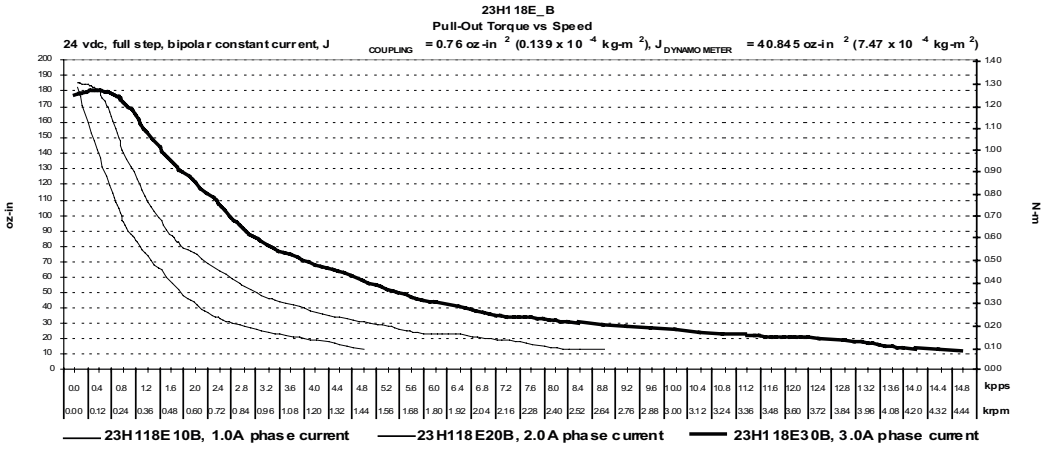

23H018D_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H018D10U, 1.0A phase current
23H018D20U, 2.0A phase current
23H018D30U, 3.0A phase current

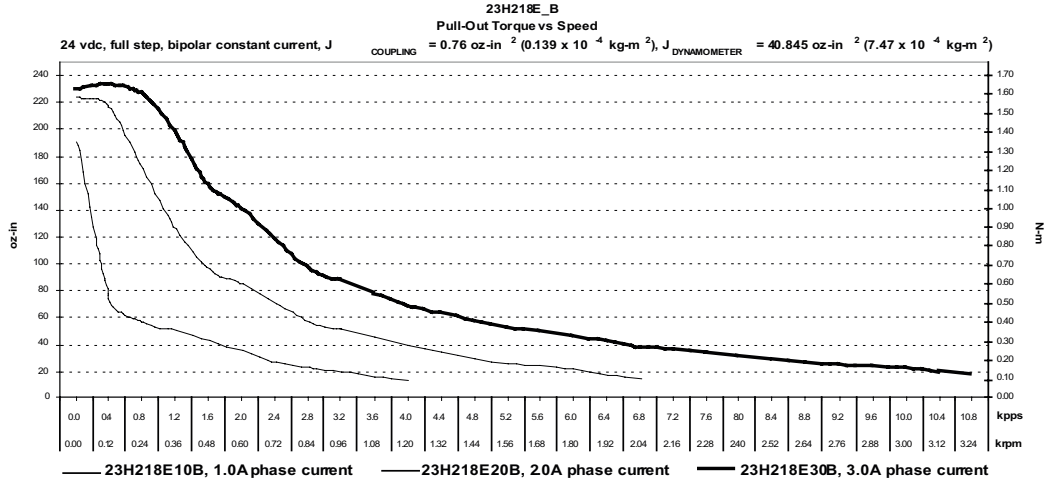

23H118D_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H118D10U, 1.0A phase current
23H118D20U, 2.0A phase current
23H118D30U, 3.0A phase current

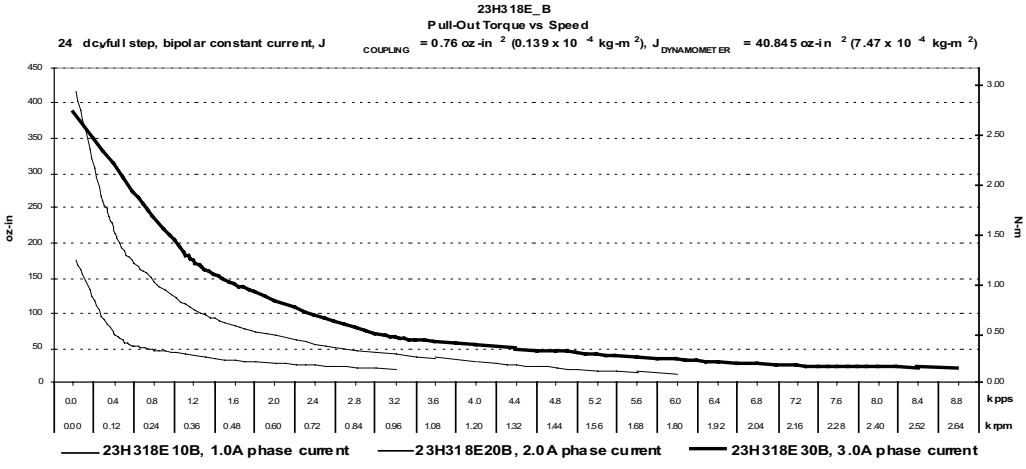

23H218D_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H218D10U, 1.0A phase current
23H218D20U, 2.0A phase current
23H218D30U, 3.0A phase current

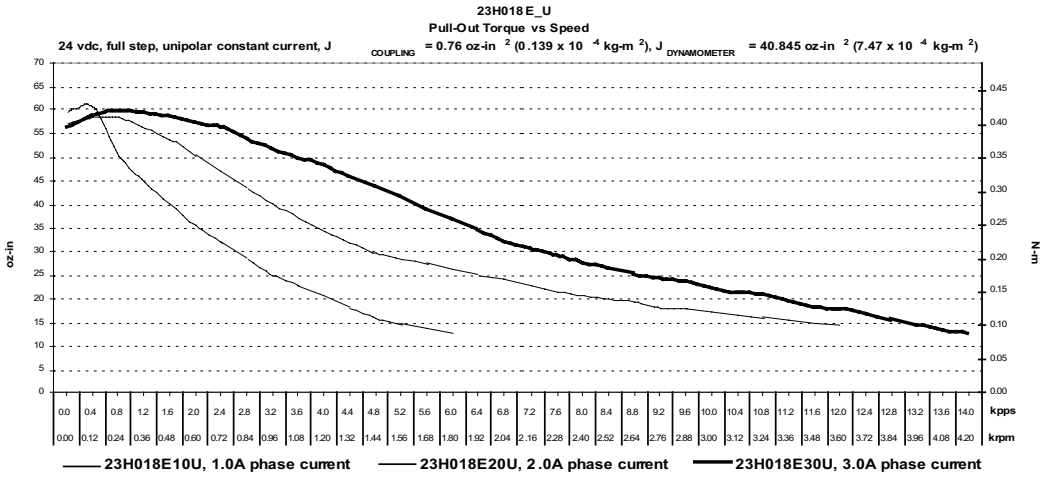

23H318D_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H318D10U, 1.0A phase current
23H318D20U, 2.0A phase current
23H318D30U, 3.0A phase current

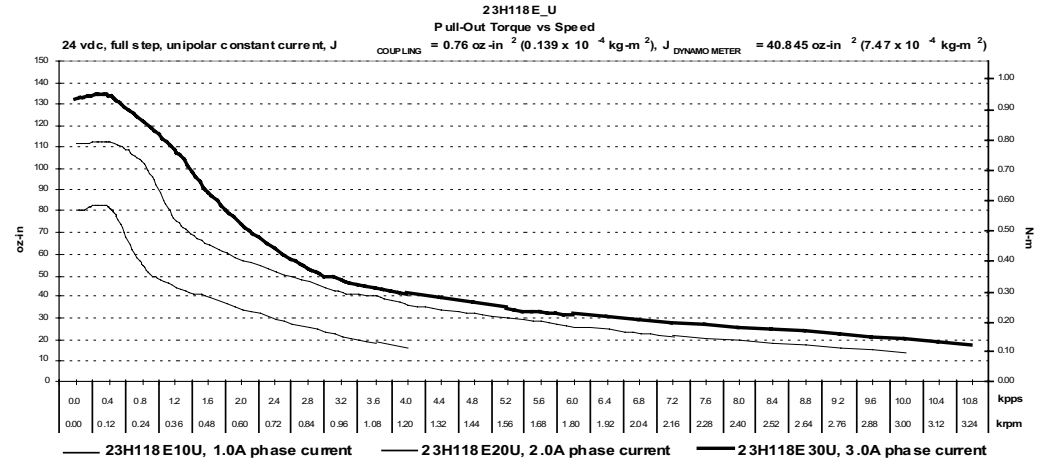

23H018E_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H018E10B, 1.0A phase current
23H018E20B, 2.0A phase current
23H018E30B, 3.0A phase current

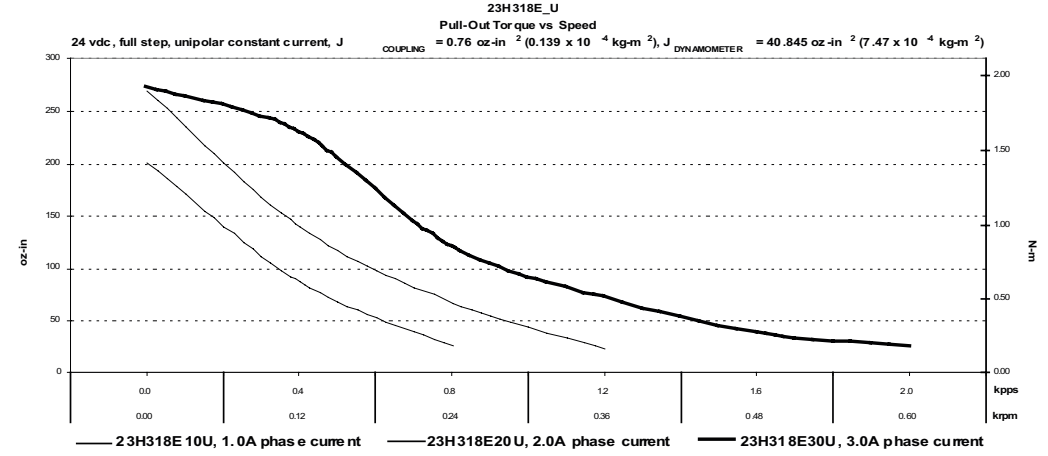

23H118E_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H118E10B, 1.0A phase current
23H118E20B, 2.0A phase current
23H118E30B, 3.0A phase current


23H218E_B
Pull-Out Torque vs Speed
24 vdc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H218E10B, 1.0A phase current
23H218E20B, 2.0A phase current
23H218E30B, 3.0A phase current


23H318E_B
Pull-Out Torque vs Speed
24 dc, full step, bipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H318E10B, 1.0A phase current
23H318E20B, 2.0A phase current
23H318E30B, 3.0A phase current


23H018E_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H018E10U, 1.0A phase current
23H018E20U, 2.0A phase current
23H018E30U, 3.0A phase current


23H118E_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H118E10U, 1.0A phase current
23H118E20U, 2.0A phase current
23H118E30U, 3.0A phase current


23H318E_U
Pull-Out Torque vs Speed
24 vdc, full step, unipolar constant current, J COUPLING = 0.76 oz-in 2 (0.139 x 10 -4 kg-m 2), J DYNAMOMETER = 40.845 oz-in 2 (7.47 x 10 -4 kg-m 2)
oz-in
N-m
kpps
krpm
23H318E10U, 1.0A phase current
23H318E20U, 2.0A phase current
23H318E30U, 3.0A phase current