

- NOTES:
1. MAIN CONDUIT BOX MAY BE ROTATED IN 90~INCREMENTS
  2. STANDARD PRODUCT USE BI-DIRECTIONAL FAN. OPPOSITE ROTATION AVAILABLE ONLY BY CONNECTION CHANGE.
  3. KEY DIMENSIONS EQUAL (MOTOR SUPPLIED WITH KEY)

UNITS: mm  
 TOSHIBA RESERVES THE RIGHT TO MAKE CHANGES OF TECHNICAL IMPROVEMENT WITHOUT NOTICE. DO NOT USE FOR CONSTRUCTION, INSTALLATION, OR APPLICATION PURPOSES UNLESS THE DRAWING IS CERTIFIED.

PERMANENT MAGNET 90L IEC TEFC (IP55) B3 ALUMINUM FRAME	TOLERANCES .X .1 .XX .03 .XXX .005 .XXXX .0005			<b>Tosh-ECO PM</b>
MDSLE024-05	MAXIMUM MOTOR WEIGHT XXX kgs. (XXX lbs.)	0 FIRST ISSUE NO REVISION	R. Roth 08/24/16 DRAWN BY DATE CHECK	
<b>TOSHIBA</b> TOSHIBA INTERNATIONAL CORPORATION			DRAWN BY: _____ CHECK BY: _____ APPROVED BY: _____ www.toshiba.com/ind	



Issued Date 12/9/2016

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### TYPICAL MOTOR PERFORMANCE DATA

Model: PM20

	<b>kW</b>	<b>Pole</b>	<b>r/min</b>	<b>Frame</b>	<b>BEMF K<sub>E</sub> Volt. (V)</b>	<b>Hz</b>	<b>Phase</b>	<b>I<sub>N</sub> Amps (A)</b>
	3	6	1800	90L	288	90	3	6.2
	<b>IP</b>	<b>Ins. Class</b>		<b>Duty</b>	<b>Nom. Eff.</b>			<b>Ambient (°C)</b>
	55	F		S1	91.5			40

<b>Load</b>		<b>kW</b>	<b>Amperes (A)</b>	<b>Efficiency (%)</b>
<b>Full Load</b>		3.00	6.15	91.5
<b>¾ Load</b>		2.25	4.75	91.4
<b>½ Load</b>		1.50	3.21	90.3
<b>¼ Load</b>		0.75	1.69	85.8
<b>No Load</b>			0.75	

<b>Torque</b>			<b>Rotor wk<sup>2</sup> Inertia (kg-m<sup>2</sup>)</b>
<b>Full Load (N-m)</b>		<b>Breakdown (% FLT)</b>	
15.9		260	0.0047

	<b>Sound Pressure dB(A) @ 1M</b>	<b>Bearings*</b>		<b>Approx. Motor Weight (kg)</b>
		<b>DE</b>	<b>NDE</b>	
	66	6205-2Z/C3	6204-2Z/C3	15

\*Bearings are the only recommended spare part(s).

**Motor Options:**

<b>Customer</b>	
<b>Customer PO</b>	
<b>Sales Order</b>	
<b>Project #</b>	

Tag:

All characteristics are average expected values. The declared locked rotor current has a tolerance of 20%.

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<b>Engineering</b>		<b>Doc. Written By</b>	P. Anderson	<b>Doc.# / Rev</b>	MPCF-1190 / 0
<b>Engr. Date</b>		<b>Doc. Approved By</b>	PAA	<b>Doc. Issued</b>	12/6/2016



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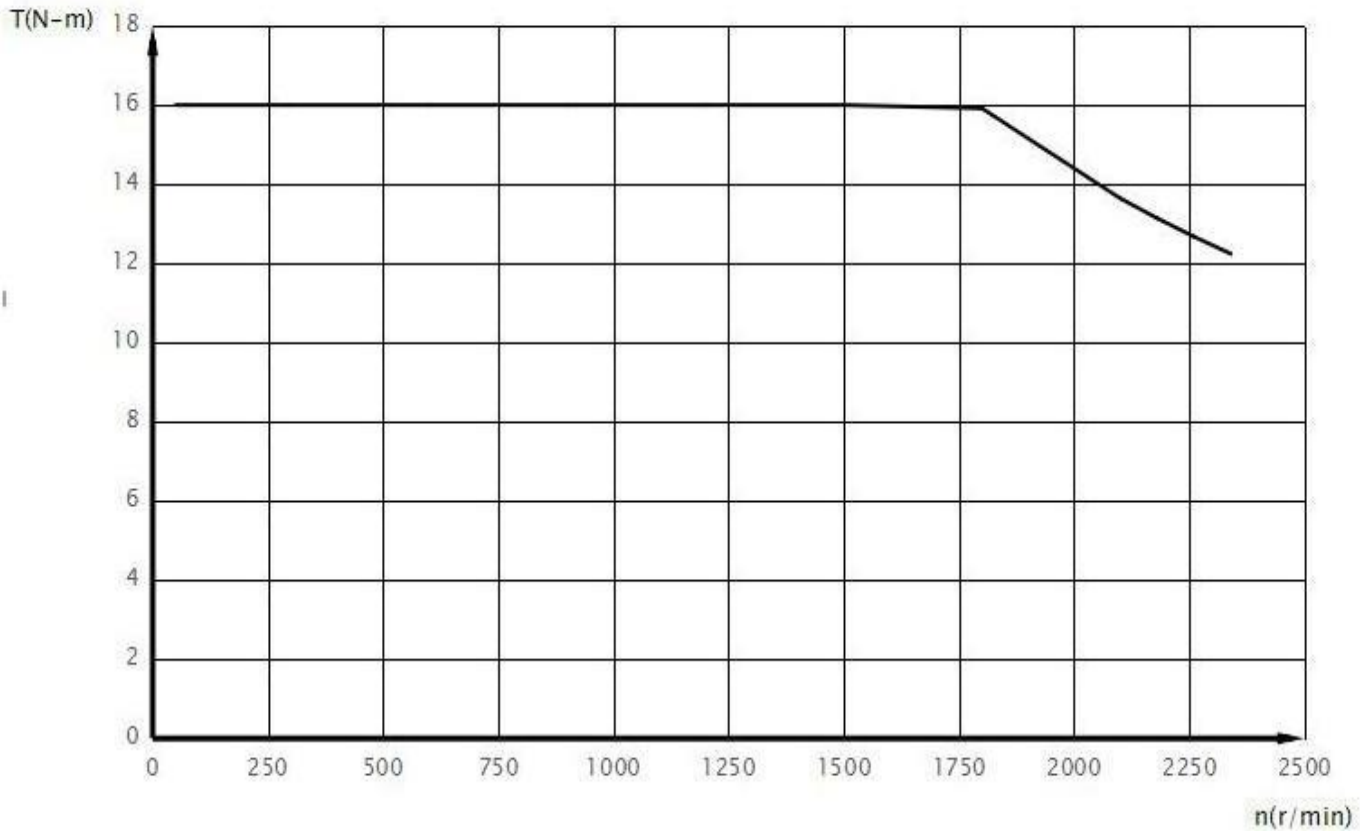
### SPEED TORQUE/CURRENT CURVE

Model: PM20

	<b>kW</b>	<b>Pole</b>	<b>r/min</b>	<b>Frame</b>	<b>BEMF K<sub>E</sub> Volt. (V)</b>	<b>Hz</b>	<b>Phase</b>	<b>I<sub>N</sub> Amps (A)</b>	
	3	6	1800	90L	288	90	3	6.2	
	<b>IP</b>	<b>Ins. Class</b>		<b>Duty</b>	<b>Nom. Eff.</b>			<b>Ambient (°C)</b>	
	55	F		S1	91.5			40	
	<b>Rotor wk<sup>2</sup> Inertia (kg-m<sup>2</sup>)</b>	<b>Torque</b>					<b>Breakdown (%)</b>		
		<b>Full Load (N-m)</b>							
	0.0047	15.9						260	

## CHARACTERISTIC CURVES RELATED TO SPEED

Three-phase synchronous motor



Customer		<b>wk<sup>2</sup> Load Inertia (kg-m<sup>2</sup>)</b>		
Customer PO			<b>Load Type</b>	CONT
Sales Order			<b>Voltage (%)</b>	
Project #			<b>Accel. Time</b>	10-15S

Tag:

All characteristics are average expected values. The declared locked rotor current has a tolerance of 20%.

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**SPARE PARTS LIST\***

Model: PM20

	kW	Pole	r/min	Frame	BEMF K <sub>E</sub> Volt. (V)	Hz	Phase	I <sub>N</sub> Amps (A)
	3	6	1800	90L	288	90	3	6.2
	IP	Ins. Class		Duty	Nom. Eff.			Ambient (°C)
	55	F		S1	91.5			40

<b>DE Bearing:</b>	6205-2Z/C3
<b>NDE Bearing:</b>	6204-2Z/C3

\*Bearings are the only recommended spare part(s).

Other than the grease used for regreasable bearings and the oil used for oil-lubricated bearings, Toshiba advises that there are no "use" parts. The only insurance spares that Toshiba suggests for these squirrel-cage induction motors are industry-standard and commercially available off-the-shelf bearings as noted above.

Motor components such as terminal boxes, fan covers and other machined parts are available on special request. In these cases, please advise our order entry department of the model and serial numbers found on the motor nameplate and a description of the needed components. With this information they will be able to furnish the current part number, price and availability.

Note: Our internal part numbers are subject to change without notice and are not published.

<b>Customer</b>	
<b>Customer PO</b>	
<b>Sales Order</b>	
<b>Project #</b>	

**Tag:**

All characteristics are average expected values.

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### NAMEPLATE DATA

Model: PM20

	kW	Pole	r/min	Frame	BEMF K <sub>E</sub> Volt. (V)	Hz	Phase	I <sub>N</sub> Amps (A)
	3	6	1800	90L	288	90	3	6.2
	IP	Ins. Class		Duty	Nom. Eff.			Ambient (°C)
	55	F		S1	91.5			40

Drive End Bearing: 6205-2Z/C3

Non-Drive End Bearing: 6204-2Z/C3

Rated Torque: 15.9 Nm

Voltage Constant (K<sub>e</sub>): 1.525 VS

Torque Constant (K<sub>t</sub>): 2.64 Nm/A

BEMF at: 1800 r/min

Comments 1:

Customer	
Customer PO	
Sales Order	
Project #	

Tag:

All characteristics are average expected values.

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Engineering		Doc. Written By	P. Anderson	Doc.# / Rev	MPCF-1191 / 0
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**TOSHIBA**

## Motor Connection Diagrams

