

- 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

MDSLE024-05

TOLERANCES  
.X .1  
.XX .03  
.XXX .005  
.XXXX .0005

MAXIMUM  
MOTOR WEIGHT  
XXX kgs.  
(XXX lbs.)

**Tosh-ECO PM**

DRAWN BY: \_\_\_\_\_  
CHECK BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_

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**TOSHIBA**  
TOSHIBA INTERNATIONAL CORPORATION

NO	REVISION	DRAWN BY	DATE	CHECK
0	FIRST ISSUE	R. Roth	08/24/16	



Issued Date 12/6/2016

Transmit #

Issued By Yu Wenhao

Issued Rev

## TYPICAL MOTOR PERFORMANCE DATA

Model: PM16

	<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>
	2.2	6	3600	90L	288	180	3	4.6
	<b>IP</b>	<b>Ins. Class</b>		<b>Duty</b>	<b>Nom. Eff.</b>			<b>Ambient (°C)</b>
	55	F		S1	91.3			40

<b>Load</b>		<b>kW</b>	<b>Amperes (A)</b>	<b>Efficiency (%)</b>
<b>Full Load</b>		2.20	4.55	91.3
<b>¾ Load</b>		1.65	3.49	89.7
<b>½ Load</b>		1.10	2.45	87.9
<b>¼ Load</b>		0.55	1.35	80.6
<b>No Load</b>			0.35	

<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>	
5.96			260	0.002

	<b>Sound Pressure dB(A) @ 1M</b>	<b>Bearings*</b>		<b>Approx. Motor Weight (kg)</b>
		<b>DE</b>	<b>NDE</b>	
	69	6205-2Z/C3	6204-2Z/C3	11

\*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%.

## TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.

<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



Issued Date	12/6/2016	Transmit #	
Issued By	Yu Wenhao	Issued Rev	

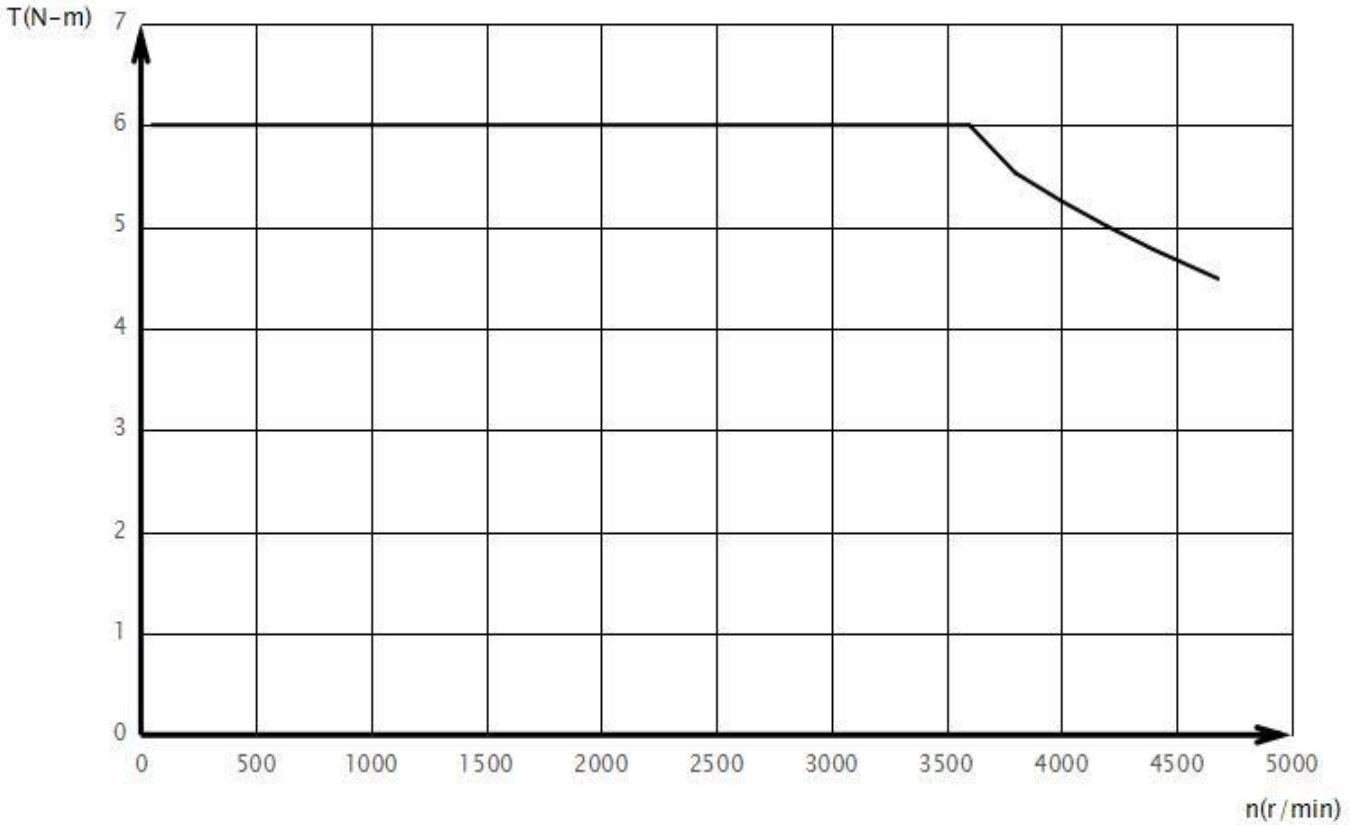
### SPEED TORQUE/CURRENT CURVE

Model: PM16

	<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>
	2.2	6	3600	90L	288	180	3	4.6
	<b>IP</b>	<b>Ins. Class</b>		<b>Duty</b>	<b>Nom. Eff.</b>			<b>Ambient (°C)</b>
	55	F		S1	91.3			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>						
	0.002	5.96						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%.

**TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.**

Engineering		Doc. Written By	P. Anderson	Doc.# / Rev	MPCF-1192 / 0
Engr. Date		Doc. Approved By	PAA	Doc. Issued	12/6/2016



Issued Date	12/6/2016	Transmit #	
Issued By	Yu Wenhao	Issued Rev	

**SPARE PARTS LIST\***

Model: PM16

	kW	Pole	r/min	Frame	BEMF K <sub>E</sub> Volt. (V)	Hz	Phase	I <sub>N</sub> Amps (A)
	2.2	6	3600	90L	288	180	3	4.6
	IP	Ins. Class		Duty	Nom. Eff.			Ambient (°C)
	55	F		S1	91.3			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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Engineering		Doc. Written By	P. Anderson	Doc.# / Rev	MPCF-1193 / 0
Engr. Date		Doc. Approved By	PAA	Doc. Issued	12/6/2016



Issued Date	12/6/2016	Transmit #	
Issued By	Yu Wenhao	Issued Rev	

### NAMEPLATE DATA

Model: PM16

	kW	Pole	r/min	Frame	BEMF K <sub>E</sub> Volt. (V)	Hz	Phase	I <sub>N</sub> Amps (A)
	2.2	6	3600	90L	288	180	3	4.6
	IP	Ins. Class		Duty	Nom. Eff.			Ambient (°C)
	55	F		S1	91.3			40

Drive End Bearing: 6205-2Z/C3

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

Rated Torque: 5.96 Nm

Voltage Constant (K<sub>e</sub>): 0.766 VS

Torque Constant (K<sub>t</sub>): 1.33 Nm/A

BEMF at: 3600 r/min

Comments 1:

Customer	
Customer PO	
Sales Order	
Project #	

Tag:

All characteristics are average expected values.

#### TOSHIBA INTERNATIONAL CORPORATION - HOUSTON, TEXAS U.S.A.

Engineering		Doc. Written By	P. Anderson	Doc.# / Rev	MPCF-1191 / 0
Engr. Date		Doc. Approved By	PAA	Doc. Issued	12/6/2016

**TOSHIBA**

## Motor Connection Diagrams

