

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA0151A3113GACD01

Catalog No: TCA0151A3113GACD01

Cast Iron Motor, 20 HP, 3 Ph, 50 Hz, 415 V, 3000 RPM, 160M Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

Output HP	20 Hp	Output KW	15.0 kW
Frequency	50 Hz	Voltage	415 V
Current	25.0 A	Speed	2950 rpm
Service Factor	1	Phase	3
Efficiency	91.9 %	Power Factor	0.91
Duty	S1	Insulation Class	F
Frame	160M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	50 °C
Drive End Bearing Size	6309	Opp Drive End Bearing Size	6209
UL	No	CSA	No
CE	Yes	IP Code	55
Number of Speeds	1	Efficiency Class	IE3

### Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B3	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	622 mm	Frame Length	254 mm
Shaft Diameter	42 mm	Shaft Extension	110 mm
Assembly/Box Mounting	R Side		
Connection Drawing	8442000085	Outline Drawing	0216000810

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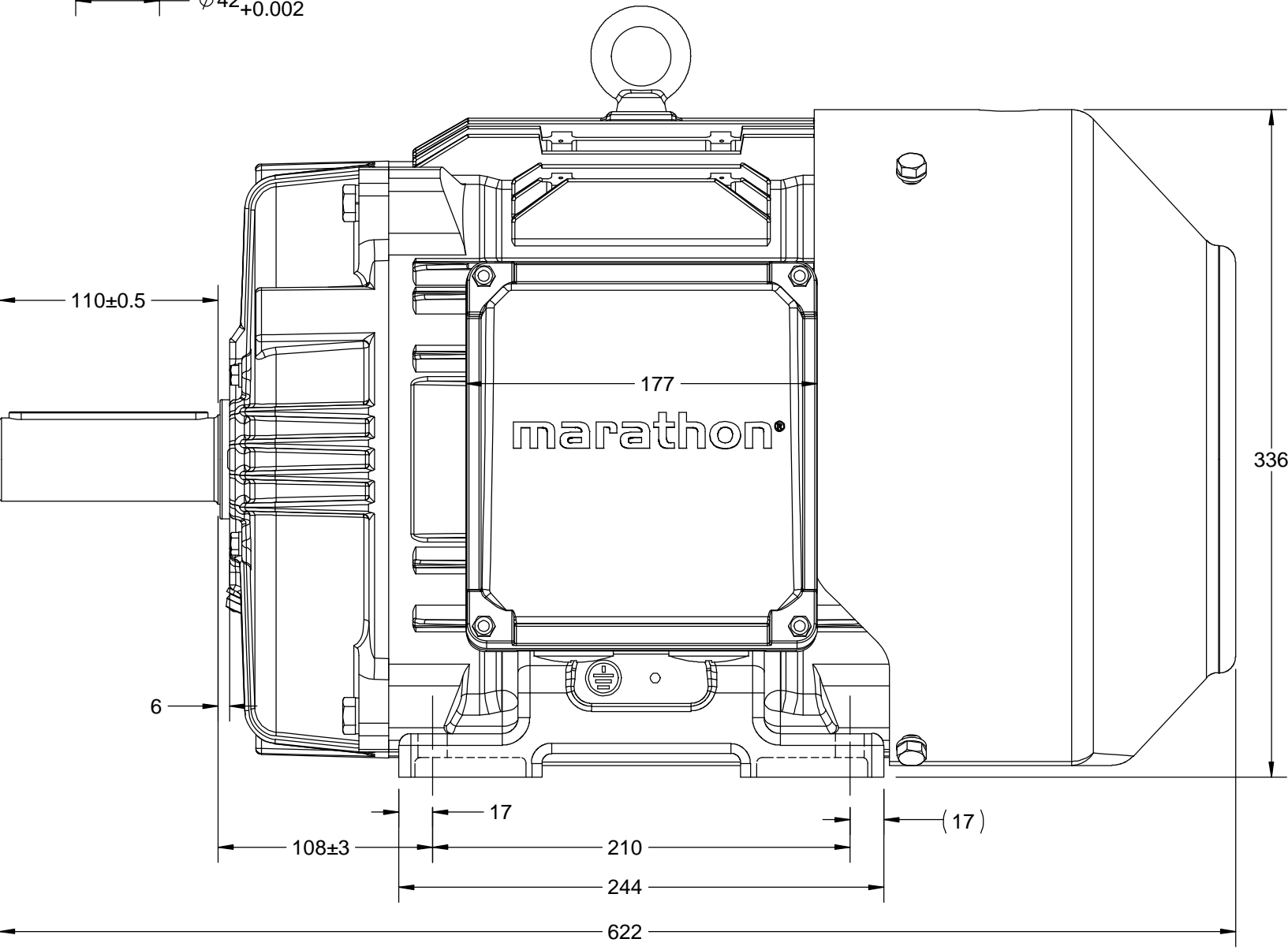
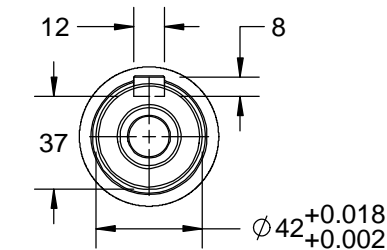
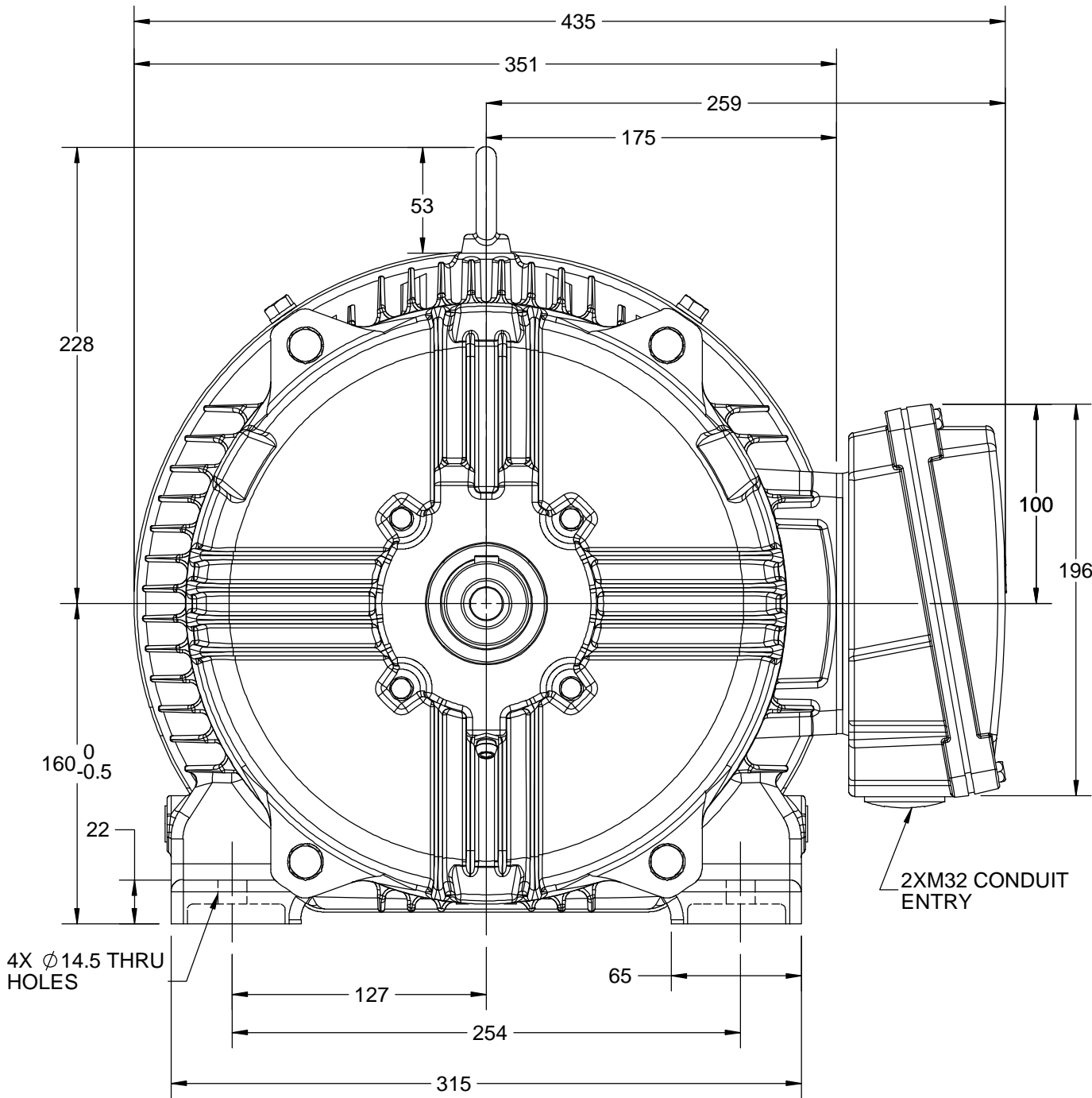
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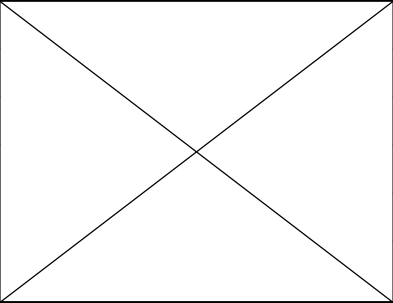
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DRAWING REVISION B	REVISION BY BISWA	DATE 27/07/2018
ECO ECO-0148344	APPROVED BY SBD	DATE 27/07/2018
ECO DESCRIPTION		
DRAWING UPDATED		
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DRAWN BY SN	<b>marathon™</b> Motors		
DATE 19/08/2016			
APPROVED BY SBD	DESCRIPTION		
DATE 19/08/2016	OUTLINE		
REFERENCE	160M FR B3-MTG.TYPE: TCA/QCA-RHS TB		
	MATERIAL	PROCESS/FINISH	
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0216000810	SHEET 1 OF 1

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DRAWING REVISION <b>A</b>	REVISION BY <b>SN</b>	DATE <b>13/01/2017</b>
ECO <b>ECO-0116390</b>	APPROVED BY <b>SBD</b>	DATE <b>13/01/2017</b>

ECO DESCRIPTION  
**NEW DRAWING RELEASE**

GEOMETRIC TOLERANCE		
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



# NOTES:

1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

	DRAWN BY <b>SN</b>		<b>Regal Beloit America, Inc.</b>				
	DATE <b>16/12/2016</b>						
	APPROVED BY <b>SBD</b>		DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>				
	DATE <b>16/12/2016</b>						
	REFERENCE		MATERIAL		PROCESS/FINISH		
	THIRD ANGLE PROJECTION		SIZE <b>A</b>		DRAWING NUMBER <b>8442000085</b>		SHEET <b>1 OF 1</b>

Model No. TCA0151A3113GACD01

U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I <sub>A</sub> /I <sub>N</sub> [pu]	T <sub>A</sub> /T <sub>N</sub> [pu]	T <sub>K</sub> /T <sub>N</sub> [pu]
415	Δ	50	15	20.0	25.0	2950	48.28	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7.5	2.3	3.4
									-	91.9	91.9	91.2	0.91	0.88	0.81			

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	160M	Motor weight - approx.	152 kg
Duty	S1	Gross weight - approx.	172 kg
Voltage variation *	± 10%	Motor inertia	0.0796 kgm <sup>2</sup>
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.2 mm/s
Design	N	Noise level ( 1meter distance from motor)	71 dB(A)
Service factor	1.0	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	F	Starting method	DOL
Ambient temperature	-20 to +50 °C	Type of coupling	Direct
Temperature rise (by resistance)	70 [ Class B ] K	LR withstand time (hot/cold)	10/20 s
Altitude above sea level	1000 meter	Direction of rotation	Bi-directional
Hazardous area classification	NA	Standard rotation	Clockwise form DE
Zone classification	NA	Paint shade	RAL 5014
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	-
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball bearing	Accessory - 3	-
DE / NDE bearing	6309-2Z / 6209-2Z	Terminal box position	RHS
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 35mm <sup>2</sup> /2 X M32 x 1.5
Type of grease	NA	Auxiliary terminal box	NA

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>A</sub>/T<sub>N</sub> - Locked Rotor Torque / Rated Torque

#### NOTE

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

\* Voltage, Frequency and combined variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	-	IS 12615 : 2018	-	-	-

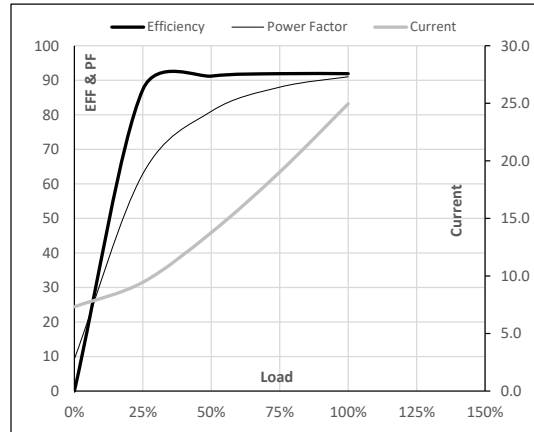
**Model No.** TCA0151A3113GACD01

Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	15	20.0	25.0	2950	4.92	48.28	IE3	50	S1	1000	0.0796	152

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	7.3	9.5	13.8	19.0	25.0	
Torque	Nm	0.0	11.9	23.9	36.0	48.3	
Speed	r/min	3000	2988	2976	2964	2950	
Efficiency	%	0.0	87.3	91.2	91.9	91.9	
Power Factor	%	9.3	62.9	81.0	88.0	91.0	

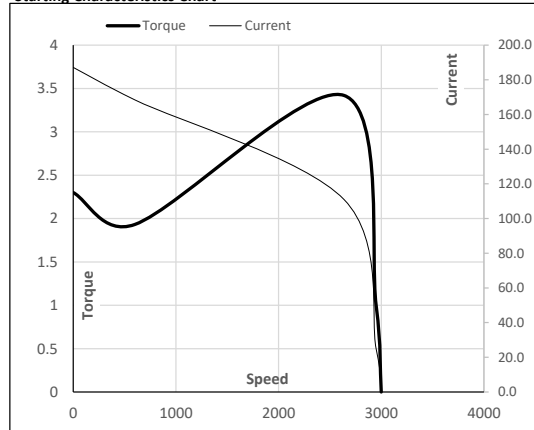
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2637	2950	3000
Current	A	187.2	168.4	111.0	25.0	7.3
Torque	pu	2.3	1.9	3.4	1	0

**Starting Characteristics Chart**



**NOTE** Refer data sheet for applicable standard and tolerances on performance parameters

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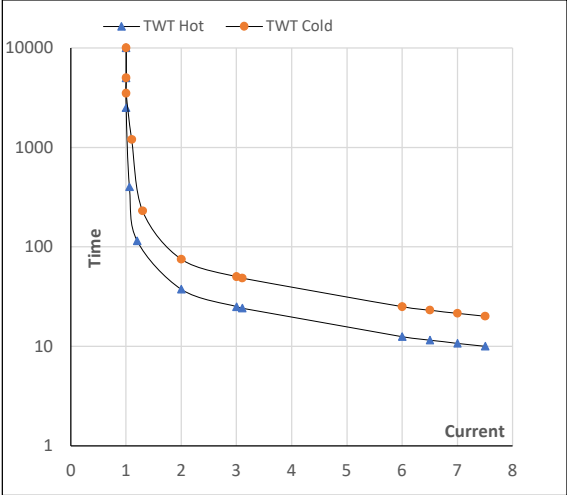
Model No.   TCA0151A3113GACD01

Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [rpm]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	15	20	25.0	2950	4.92	48.28	IE3	50	S1	1000	0.0796	152

Motor Speed Torque Data

Load		FL	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>	LR
TWT Hot	s	10000	38	25	20	15	13	10
TWT Cold	s	10000	75	50	40	30	25	20
Current	pu	1	2	3	4	5	6	7.5

Thermal Characteristics Chart



NOTE      Refer data sheet for applicable standard and tolerances on performance parameters

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