

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: QCA0452A1121GAA001

Catalog No: QCA0452A1121GAA001

TerraMAX® Cast Iron Motor, 60 HP, 3 Ph, 50 Hz, 400 V, 1500 RPM, 225M Frame, TEFC



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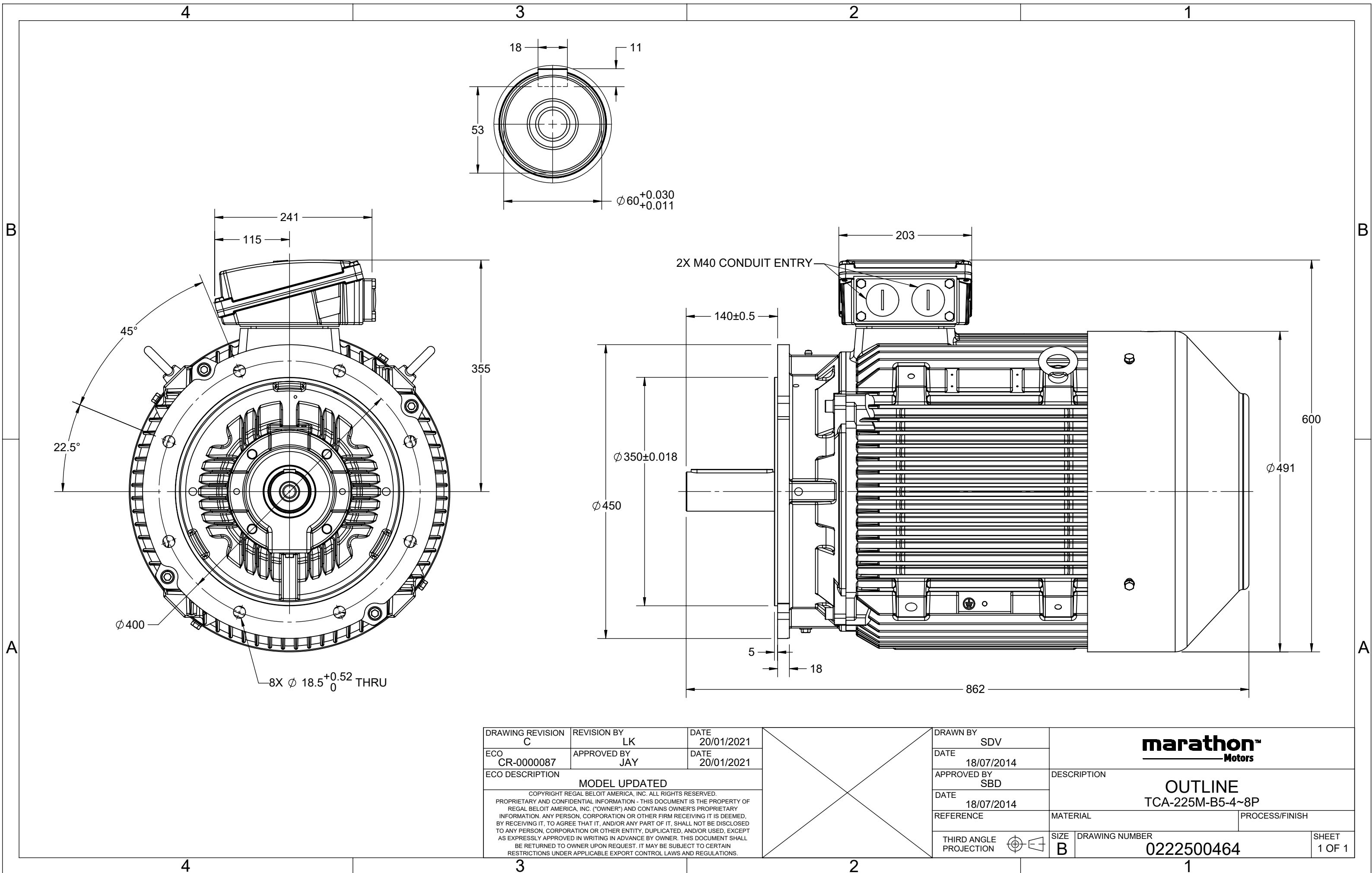
Nameplate Specifications

| | | | |
|------------------------|----------------------|----------------------------|------------------------------------|
| Output HP | 60 Hp | Output KW | 45.0 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 82.6 A | Speed | 1486 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 95.4 % | Power Factor | 0.83 |
| Duty | S1 | Insulation Class | F |
| Frame | 225M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6313 | Opp Drive End Bearing Size | 6213 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE4 |


Technical Specifications

| | | | |
|-----------------------|----------------------|-----------------------|-----------------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 4 | Rotation | Bi-Directional |
| Mounting | B5 | Motor Orientation | Horizontal |
| Drive End Bearing | C3 | Opp Drive End Bearing | C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 862 mm | Frame Length | 425 mm |
| Shaft Diameter | 60 mm | Shaft Extension | 140 mm |
| Assembly/Box Mounting | Top | | |
| Outline Drawing | 0222500464 | Connection Drawing | 8442000085 |

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| | | |
|---|--------------------|--------------------|
| DRAWING REVISION C | REVISION BY LK | DATE 20/01/2021 |
| ECO CR-0000087 | APPROVED BY JAY | DATE 20/01/2021 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | |
|---------------------------|---|-------------------------------------|
| DRAWN BY SDV |  | |
| DATE 18/07/2014 | | |
| APPROVED BY SBD | DESCRIPTION OUTLINE TCA-225M-B5-4~8P | |
| DATE 18/07/2014 | MATERIAL | PROCESS/FINISH |
| REFERENCE | SIZE B | DRAWING NUMBER 0222500464 |
| THIRD ANGLE PROJECTION | SHEET 1 OF 1 | |

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| | | |
|---|---------------------------|---------------------------|
| DRAWING REVISION A | REVISION BY SN | DATE 13/01/2017 |
| ECO ECO-0116390 | APPROVED BY SBD | DATE 13/01/2017 |
| 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 SN | DATE 16/12/2016 | |  Regal Beloit America, Inc. | |
| | APPROVED BY SBD | DESCRIPTION CONN DIAGRAM-NAMEPLATE | | |
| | DATE 16/12/2016 | REFERENCE | MATERIAL | PROCESS/FINISH |
| | THIRD ANGLE PROJECTION  | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. QCA0452A1121GAA001

| U (V) | Δ / Y Conn | f [Hz] | P | | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load | | | | PF at __ load | | | I _A /I _N [pu] | T _A /T _N [pu] | T _K /T _N [pu] |
|----------|---------------|-----------|------|------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
| | | | [kW] | [hp] | | | | | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | | | |
| 400 | Δ | 50 | 45 | 60 | 82.6 | 1486 | 287.64 | IE4 | - | 95.4 | 95.4 | 94.7 | 0.83 | 0.77 | 0.66 | 8.4 | 3.0 | 3.6 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|-----------------------------|---|--|
| Motor type | QCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B5 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 225M | Motor weight - approx. | 442 kg |
| Duty | S1 | Gross weight - approx. | 472 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.8148 kgm ² |
| 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) | 65 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 +40 °C | Type of coupling | Direct |
| Temperature rise (by resistance) | 80 [Class B] K | LR withstand time (hot/cold) | 15/30 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 | PTC 150°C |
| Rotor type | Aluminum Die cast | Accessory - 2 | - |
| Bearing type | Anti-friction ball | Accessory - 3 | - |
| DE / NDE bearing | 6313 C3 / 6213 C3 | Terminal box position | TOP |
| Lubrication method | Regreasable | Maximum cable size/conduit size | 1R x 3C x 50mm ² /2 x M40 x 1.5 |
| Type of grease | CHEVRON SRI-2 or Equivalent | Auxiliary terminal box | NA |

I_A/I_N - Locked Rotor Current / Rated Current

T_K/T_N - Breakdown Torque / Rated Torque

T_A/T_N - 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 slight variations between calculated values in this datasheet and the motor nameplate figures.

| Efficiency Standards | Europe IEC 60034-30-1 | China - | India - | Aus/Nz AS/NZ 1359:5:2004 | Brazil - | Global IEC IEC 60034-30-1 |
|----------------------|--------------------------|------------|------------|-----------------------------|-------------|------------------------------|
| | | | | | | |



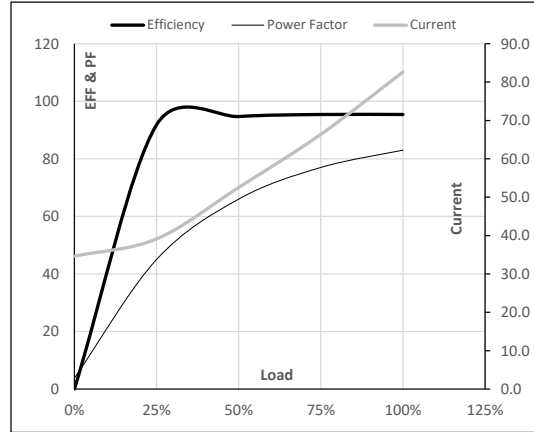
Model No. QCA0452A1121GAA001

| 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 ²] | Weight [kg] |
|-----------|-------|------------|--------|--------|--------|-------|---------|---------|--------|----------|----------|------|---------------|------------------------------|-------------|
| TEFC | 400 | Δ | 50 | 45 | 60 | 82.6 | 1486 | 29.33 | 287.64 | IE4 | 40 | S1 | 1000 | 0.8148 | 442 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current | A | 34.6 | 39.1 | 52.5 | 66.4 | 82.6 | |
| Torque | Nm | 0.0 | 71.4 | 143.1 | 215.2 | 287.6 | |
| Speed | r/min | 1500 | 1496 | 1493 | 1489 | 1486 | |
| Efficiency | % | 0.0 | 91.8 | 94.7 | 95.4 | 95.4 | |
| Power Factor | % | 3.8 | 45.0 | 66.0 | 77.0 | 83.0 | |

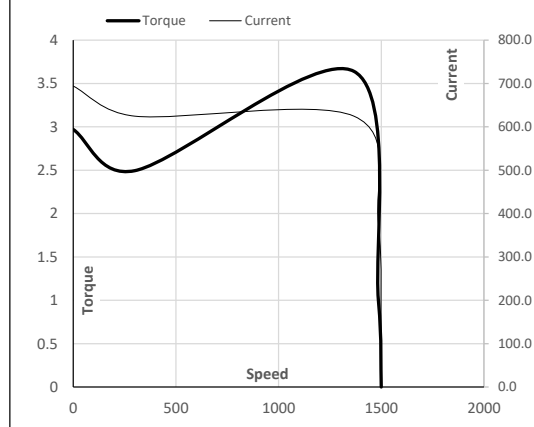
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 300 | 1367 | 1486 | 1500 |
| Current | A | 694.1 | 624.7 | 377.6 | 82.6 | 34.6 |
| Torque | pu | 3.0 | 2.5 | 3.6 | 1 | 0 |

Starting Characteristics Chart



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

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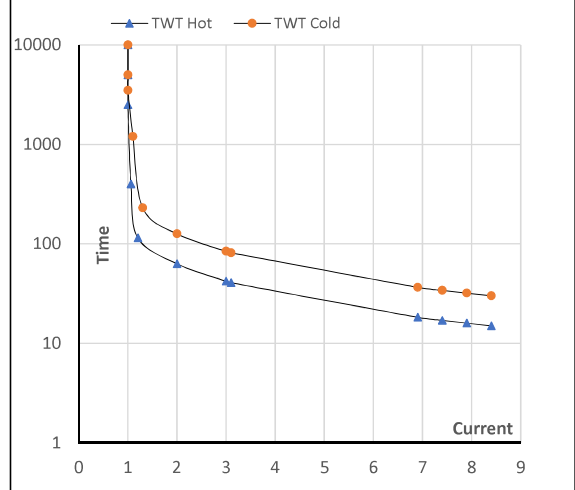
Model No. QCA0452A1121GAA001

| | | | | | | | | | | | | | | | |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| 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 ²] | Weight [kg] |
| TEFC | 400 | Δ | 50 | 45 | 60 | 82.6 | 1486 | 29.33 | 287.64 | IE4 | 40 | S1 | 1000 | 0.8148 | 442 |

Motor Speed Torque Data

| Load | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR | |
|----------|---------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| TWT Hot | s 10000 | 63 | 42 | 34 | 25 | 20 | 15 | |
| TWT Cold | s 10000 | 126 | 84 | 70 | 55 | 50 | 30 | |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 8.4 |

Thermal Characteristics Chart



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

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