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ELECTRONICS

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## Jameco Part Number 668511



### 1.27mm Pitch 184 Ckts 25 Deg. DDR DIMM

#### 1.0 SCOPE

This specification covers the performance requirements of the 1.27 mm centerline angled DDR DIMM socket for board to board interconnect for  $1.27 \pm 0.10$  thick memory modules.

### 2.0 PRODUCT DESCRIPTION

### 2.1 PRODUCT NAME AND SERIES NUMBER (S)

Series Number **Product Descriptions** 87623 1.27mm Pitch 184 Ckts 25 Deg. DDR DIMM

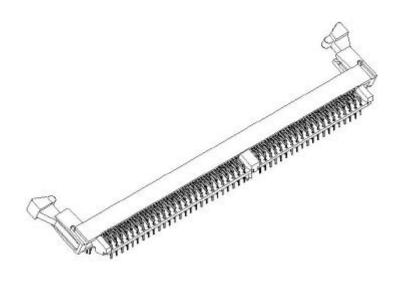
### 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate Sales Drawings for information on dimensions, materials, plating and markings, recommended module outlines and footprint Specifications.

### 2.3 SAFETY AGENCY APPROVALS

UL File E29179

CSA File : 1041513 (LR19980)



| REVISION: | ECR/ECN INFORMATION:      | TITLE:                                    |  |                 | SHEET No.             |  |  |  |  |
|-----------|---------------------------|---|--|-----------------|-----------------------|--|--|--|--|
| Α         | EC No: <b>\$2006-0558</b> | 1.27mm Pito                               | 1.27mm Pitch 184 Ckts 25 Deg. DDR DIMM |                 |                       |  |  |  |  |
|           | DATE: 2005/11/16          |   |  |                 |                       |  |  |  |  |
| DOCUMEN   | T NUMBER:                 | CREATED / REVISED BY:                     | CHECKED BY:                            | APPRO           | OVED BY:              |  |  |  |  |
| PS        | S-87623-002               | KY TANG 2005/11/21 JTAN 2005/11/21 GG LEE |  | GG LEE          | 2005/11/21            |  |  |  |  |
|           |                           |   | TEMPLATE EILENIA                       | ME: DDODLICT SE | DECISIZE ANI/V 1) DOC |  |  |  |  |



### 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents are part of this specification between the requirements of this specified herewith. In the event of conflict between the requirements of this specification and the product drawings, the product drawings shall take precedence. In the event of conflict between the requirements of this specification and reference documents, this specification shall take precedence.

### 4.0 RATINGS

### 4.1 VOLTAGE

50 Volts AC (RMS) DC

### **4.2 CURRENT**

1.0 Amps/ pin

### 4.3 FIELD LIFE AND TEMPERATURE

Field Life: 3 years Field Temperature: 60°C

#### 4.4 OPERATING TEMPERATURE

-40°C TO +85°C

#### 5.0 PERFORMANCE

### **5.1 ELECTRICAL PERFORMANCE**

| Item  |                                       | Test Condition   | Requirement   |
|-------|---------------------------------------|--|---|
| 5-1-1 | Contact<br>Resistance                 | Mate connectors with a maximum voltage of 20 mV and a current of 10 mA (measurement location in section 8.3) | Contact Resistance:<br>40 mohms max<br>(initial)<br>10 mohms max<br>change from initial |
| 5-1-2 | Insulation<br>Resistance              | Mate connectors with a voltage of 500V DC between adjacent terminals or ground                               | 1000 Mohms<br>minimum   |
| 5-1-3 | Dielectric<br>Withstanding<br>voltage | Mate connectors with a voltage of 500V AC (rms) for 1 minute between adjacent terminals and grounds          | No breakdown  |
| 5-1-4 | Capacitance                           | Measure between adjacent terminals at 1 MHz (loaded: 50 ohms impedance)                                      | Loaded: 2 picofarads maximum  |

|           | ·                        |                       | TEMPLATE ELLENA                        | ME DECEMENT OF | DECICIZE A 41/1/41 DOC |  |  |
|-----------|--------------------------|-----------------------|--|----------------|------------------------|--|--|
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| DOCUMEN   | T NUMBER:                | CREATED / REVISED BY: | CHECKED BY:                            | APPRO          | OVED BY:               |  |  |
| A         | DATE: 2005/11/16         |                       | 1.27mm Pitch 184 Ckts 25 Deg. DDR DIMM |                |                        |  |  |
| Α         | EC No: <b>S2006-0558</b> | 1.27mm Pito           |  |                |                        |  |  |
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### 5.2 MECHANICAL PERFORMANCE

| Item                        |  | Test Cond  | ition   | Requirement  |  |   |  |      |
|-----------------------------|--|--|---|--|--|---|--|------|
| 5-2-1                       | Terminal<br>Retention<br>Force in<br>Housing                             | Apply an axial pull force the housing at a rate of 28 minute   | he housing at a rate of 25±6 mm per   |  |  | Apply an axial pull force on the terminal in the housing at a rate of 25±6 mm per minimum |  | lbs) |
| 5-2-2                       | Durability   | Mate connectors up to 25 maximum rate of 10 cycle to define environmental to                                   | es per minute prior I   | Contact Resistant 10 mohms muchange from   | aximum   |   |  |      |
| 5-2-3                       | Vibration<br>(Mil-std-1344<br>Method<br>2005.1<br>condition I)           | Amplitude: 1.5mm peak to<br>Sweep: 10-55-10 Hz in or<br>Duration: 2 hours in each<br>(Test module shall be per | nė minute<br>X-Y-Z axis   | Contact Resistance: 10 mohms maximum change from initial Discontinuity: Not greater than 1 micro-second  |  |   |  |      |
| 5-2-4                       | Mechanical<br>shock<br>(Mil-std-1344<br>Method<br>2004.1<br>condition A) | 30g's with half-sine wave pulses of 11 milliseconds x,y,z axis. (total 18 shocks) (Test module shall be per    | duration in each  | Contact Resistance: 10 mohms maximum change from initial  Discontinuity: Not greater than 1 micro-second  Insertion force shall be 0.78N (2.8 oz) maximum with a maximum blade. Withdrawal force shall be 0.07N (0.25 oz) minimum with a minimum blade per contact respectively x the total contact population |  |   |  |      |
| 5-2-5                       | Total insertion and withdrawal force (excluding latches)                 | Insert and withdraw a ste of 25±6 mm/min. Latches excluded in the test. (gage dimensions refer to              | s shall be  |  |  |   |  |      |
| 5-2-6                       | Total insertion force (with latches)                                     | Insert a nominal thickness<br>edge chamfer at a rate of<br>Latches shall be included                           | 25±6 mm/min.  | Maximum ins<br>force:<br>15.57 kgf (34<br>- 184 ck   |  |   |  |      |
| 5-2-7                       | Latch<br>Overstress<br>Force   | Apply an actuation force of rate of 25±6 mm/min in the position and hold for 10 s                              | on the latch at a<br>le fully open<br>econds  | 66.72N (15 lb<br>minimum forc<br>10 seconds w<br>damage  | e held for   |   |  |      |
| 5-2-8                       | Latch<br>Actuation<br>Force  | Apply an actuation force of rate of 25±6 mm/min with test module inserted into                                 | apply an actuation force on the latch at a late of 25±6 mm/min with recommended lest module inserted into connector |  | The force to fully actuate the latch open shall be 44.48N (10 lbs) maximum per latch |   |  |      |
| 5-2-9                       | Forklock<br>retention<br>force<br>in housing                             | Apply an axial pullout forcing the housing at a rate of  | ce on the forklock<br>25±6 mm/min   | 1.0 kgf (2.2 lbs)<br>minimum   |  |   |  |      |
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|                             | CR/ECN INFORMATION<br>C No: <b>\$2006-0558</b>                           |  | ch 184 Ckts 25 Deg. DD  | R DIMM   | 3 of 12  |   |  |      |
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| CUMENT NUMBER:              |  | CREATED / REVISED BY: CHECKED BY:  |   | APPROVED BY:   |  |   |  |      |
|                             | 37623-002  |  | 1   |  |  |   |  |      |



### 5.2 MECHANICAL PERFORMANCE (CONTINUE....)

| Item   |  | Test Condition  | Requirement  |  |  |
|--------|--|---|--|--|--|
| 5-2-10 | Retention of connector to PCB                  | Pull or push connector with a force of 0.45kgf on connector mounted on PCB prior at a rate of 25 ± 6 mm/min | No lifting of connector from PCB when apply a force of 0.45kgf (0.99lbs)       |  |  |
| 5-2-11 | Insertion<br>Force of<br>connector into<br>PCB | Push connector into minimum recommended diameter holes. PCB: 1.57±0.18 mm thick. Rate: 25.4 ±6 mm/min       | 2.5 kgf (5.5lbs) max.<br>per forklock  |  |  |
| 5-2-12 | Module<br>Ripout Force                         | Pull up from the center of the module with the latches closed at a rate of 25±6 mm/min                      | 88.96N (20 lbs) minimum retention force of module in connector with no damage. |  |  |

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| Α            | EC No: <b>S2006-0558</b> | 1.27mm Pito                               | <b>4</b> of <b>12</b> |  |            |  |  |  |  |
| _ ^          | DATE: 2005/11/16         |   | ·                     |  |            |  |  |  |  |
| DOCUMEN      | T NUMBER:                | CREATED / REVISED BY: CHECKED BY: APPROVE |                       |  |            |  |  |  |  |
| PS-87623-002 |                          | KY TANG 2005/11/21                        |                       |  | 2005/11/21 |  |  |  |  |



### 5.3 ENVIRONMENT PERFORMANCE

| Item  |   | Test Condition   | Requirement   |
|-------|---|--|---|
| 5-3-1 | Thermal<br>Shock<br>(Mil-std-202F<br>Method 107E) | Mate connectors and expose to 5 cycles of the following:-  a) -40 +0/-3 °C for 15 minutes b) +25 ± 10 for 5 minutes max. c) +65 +3/-0 for 15 minutes d) +25 ± 10 for 5 minutes max.  | Contact Resistance: 10 mohms maximum change from initial Appearance: No physical damage   |
| 5-3-2 | Thermal<br>Aging<br>(Mil-std-202F<br>Method 108)  | Mate connectors and expose to a temperature of 85 ± 2°C for 240 ± 10 hr.   | Contact Resistance: 10 mohms maximum change from initial Appearance: No physical damage   |
| 5-3-3 | Temperature<br>Rise                               | Mate connectors, series four contacts and measure the temperature rise at the rated current after 4 hours  | Temperature Rise:<br>30 °C maximum<br>above ambient   |
| 5-3-4 | Temperature<br>Cycling                            | Mate connectors and expose 335 cycles relative humidity uncontrolled with A temperature transition of 10 °C per minutes  Temperature °C  Duration (Min)  0± 3°C  +75± 3°C  Allow to air dry for 24 hours prior to measurements | Contact Resistance: 10 mohms maximum change from initial  Dielectric Withstanding voltage: No breakdown  Insulation Resistance: 1000 Mohms minimum  Appearance: No damage |

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| Α         | EC No: <b>\$2006-0558</b> | 1.27mm Pito           | 1.27mm Pitch 184 Ckts 25 Deg. DDR DIMM |                 |                       |  |  |  |
|           | DATE: 2005/11/16          |                       |  |                 |                       |  |  |  |
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| PS        | S-87623-002               | KY TANG 2005/11/21    |  | 2005/11/21      |                       |  |  |  |
|           |                           |                       | ΤΕΜΡΙ ΔΤΕ ΕΙΙ ΕΝΔ                      | ME: PRODUCT, SE | PECISIZE A41(V 1) DOC |  |  |  |



## 5.3 ENVIRONMENT PERFORMANCE (CONTINUE....)

|       | Item                               | Test Condition   | Requirement  |
|-------|------------------------------------|--|--|
|       |                                    |  | Contact Resistance:<br>10 mohms maximum<br>change from initial       |
| 5-3-5 | Humidity<br>(Stoody Stoto)         | Mate connectors and expose to a temperature of 50 ± 2°C with a relative humidity of 80 ± 3% for 300 hours. Remove surface moisture and | Dielectric<br>Withstanding voltage:<br>No breakage                   |
|       | (Steady State)                     | air dry for 24 hours prior to measurement  | Insulation Resistance:<br>1000 Mohms<br>minimum                      |
|       |                                    |  | Appearance: No damage  |
| 5-3-6 | Solderability                      | Steam age for 1 hours. Solder time 5 ± 0.5 seconds Solder temperature :260 ± 5°C. Use non-activated flux                               | 95% of the immersed area must show no voids or pin holes             |
| 5-3-7 | Resistance to<br>Soldering<br>Heat | Solder time: 3 ± 5 seconds<br>Solder temperature: 260 ± 5°C<br>Immerse leads to a depth of 1.57mm (.062 in)<br>from connector body     | Appearance:<br>No blistering or<br>deformation of plastic<br>housing |
| 5-3-8 | IR. Process                        | Exposure: Molex IR. profile per section 8.4  | Appearance:<br>No blistering or<br>deformation of plastic<br>housing |

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|           | ·                         | <u> </u>              | TEMPLATE EILENIA                       | ME: DRODUCT SE | DECISIZE AAI/V 1) DOC |  |  |  |  |



## 6.0 TEST SEQUENCE

| Test Description<br>Sequence                         |                     | Test Group           |      |          |               |   |   |    |   |   |   |          |
|--|---------------------|----------------------|------|----------|---------------|---|---|----|---|---|---|----------|
| 55405.055  |                     | I                    | П    |          | Ш             |   |   | IV |   |   | V |          |
|  | а                   | b                    | а    | b        |               | а | b | С  | d | а | b | С        |
| Initial Contact Resistance                           | 1                   | 1                    | 1    | 1        | 1             |   |   |    |   |   |   |          |
| Durability (2 mate/unmates)                          | 2,<br>8             | 2, 10                |      |          | 2, 8          |   |   |    |   |   |   |          |
| (4 mate/unmates)                                     |                     |                      |      | 2        |               |   |   |    |   |   |   |          |
| (5 mate/unmates)                                     | <del>_</del>        |                      |      |          |               |   |   |    |   |   |   |          |
| (24 mate/unmates)                                    |                     |                      | 2    |          |               |   |   |    |   |   |   |          |
| Contact Resistance                                   | 3,<br>5,<br>7,<br>9 | 3, 5,<br>7, 9,<br>11 | 3, 5 | 3, 5     | 3, 5,<br>7, 9 |   |   |    |   |   |   |          |
| Thermal Age  | 4                   |                      |      |          |               |   |   |    |   |   |   |          |
| Disturbance  | 6                   | 8                    |      |          | 6             |   |   |    |   |   |   |          |
| Thermal shock  | l                   | 4                    |      |          |               |   |   |    |   |   |   |          |
| Thermal cycling                                      | <br>                | 6                    |      | <u> </u> |               |   |   |    |   |   |   | <u> </u> |
| Mechanical Shock                                     |                     | <u> </u>             | 4    |          |               |   |   |    |   |   |   |          |
| Vibration  |                     |                      |      | 4        |               |   |   |    |   |   |   |          |
| Steady State Humidity                                |                     |                      |      |          | 4             |   |   |    |   |   |   |          |
| Temperature Rise                                     |                     |                      |      |          |               | 1 |   |    |   |   |   |          |
| Solderability  |                     |                      |      |          |               |   | 1 |    |   |   |   |          |
| Resistance to soldering                              |                     |                      |      |          |               |   |   | 1  |   |   |   |          |
| IR. compatibility                                    | l                   |                      |      |          |               |   |   |    | 1 |   |   |          |
| Connector mate/unmate<br>forces<br>(1,2,5,25 cycles) |                     |                      |      |          |               |   |   |    |   | 1 |   |          |
| Latch Actuation Force                                | <u>-</u>            | <u> </u>             |      |          |               |   |   |    |   |   | 1 |          |
| Module Ripout Force                                  | l                   |                      | l    |          |               |   |   |    |   |   | 2 | l        |
| Connector Insertion and retention to PCB             | <u> </u>            |                      |      |          |               |   |   |    |   |   |   | 1        |
| Contact Retention                                    | <u> </u>            |                      |      |          |               |   |   |    |   |   |   | 2        |
| Latch Overstress Force                               |                     |                      |      |          |               |   |   |    |   |   |   | 3        |
| Sample size per test group                           | 5                   | 5                    | 5    | 5        | 5             | 5 | 5 | 5  | 5 | 5 | 5 | 5        |

Note: Disturbance consists of a 10° rotation of the module in the connector.

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| ζ         | DATE: 2005/11/16         |                       | <b>7</b> of <b>12</b>                  |                  |                       |  |  |  |
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| PS        | S-87623-002              | KY TANG 2005/11/21    | JTAN 2005/11/21                        | GG LEE 2005/11/2 |                       |  |  |  |
|           |                          |                       | TEMPI ATE FII ENAI                     | ME: PRODUCT_SE   | PECISIZE A4I(V 1) DOC |  |  |  |

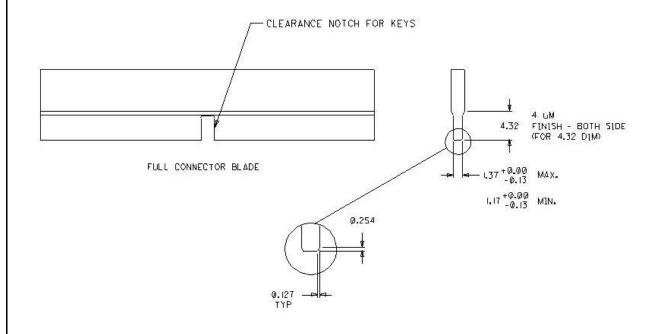


### 7.0 PACKAGING

Part shall be packed to protect against damage during handling, transportation and storage.

## 8.0 GAGES, FIXTURES AND SCHEMATICS

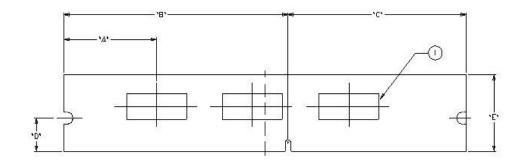
### 8.1 CONTACT INSERTION AND WITHDRAWAL BLADES

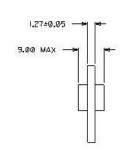


| TEMPLATE ELLENAME, PRODUCT, SPECISIZE ANIVAN DOC |                          |  |                       |                   |           |
|--|--------------------------|--|-----------------------|-------------------|-----------|
| PS-87623-002                                     |                          | KY TANG 2005/11/21                           | JTAN 2005/11/21       | GG LEE 2005/11/21 |           |
| DOCUMENT NUMBER:                                 |                          | CREATED / REVISED BY: CHECKED BY: APPROVED B |                       | OVED BY:          |           |
|  | DATE: 2005/11/16         |  | 0 01 12               |                   |           |
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### 8.2 SHOCK AND VIBRATION TEST MODULE





|                 |                            |           |           |           | SOJ Weight (gm ± 10%) |           |                          |                                |
|-----------------|----------------------------|-----------|-----------|-----------|-----------------------|-----------|--------------------------|--------------------------------|
| Circuit<br>Size | JEDEC<br>Module<br>outline | "A"<br>mm | "B"<br>mm | "C"<br>mm | "D"<br>mm             | "E"<br>mm | shock test<br>(weighted) | Vibration test<br>(unweighted) |
| 184             | MO-206                     | 30.8      | 73.295    | 60.055    | 21.97                 | 38.1      | 24.76                    | 13.77                          |

### Notes:

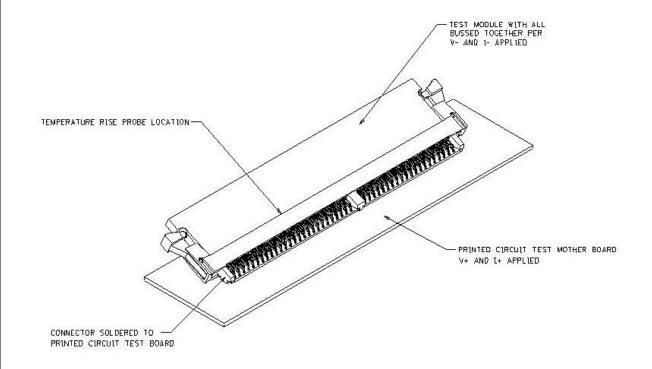
- 1. Item 1 (weights) shall be exploited to recommended module test board. Material shall be aluminium.
- 2. Total weight of the finished test module shall be per the table.

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| DOCUMENT NUMBER: |                          | CREATED / REVISED BY: | CHECKED BY:           | APPR(      | OVED BY:  |
| PS-87623-002     |                          | KY TANG 2005/11/21    |                       | 2005/11/21 |           |



### 8.3 CONTACT RESISTANCE AND TEMPERATURE RISE SETUP

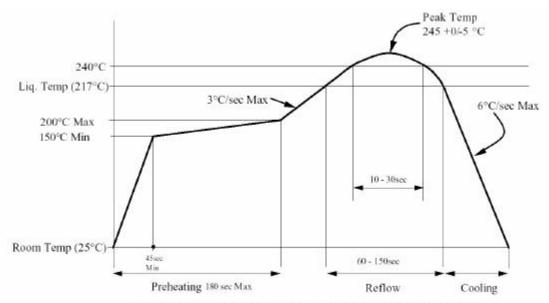
Contact Resistance test arrangement and Temp / Rise measurement location



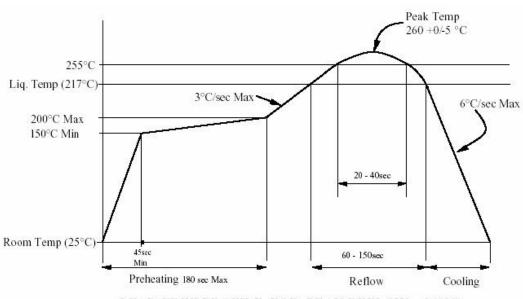
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| DOCUMENT NUMBER:                                 |                          | CREATED / REVISED BY: CHECKED BY: APPROVED BY: |                        |                   | OVED BY:  |
| PS-87623-002                                     |                          | KY TANG 2005/11/21                             | JTAN 2005/11/21        | GG LEE 2005/11/21 |           |
| TEMPLATE FUENAME, PRODUCT OPECICIZE A 474.41 POO |                          |  |                        |                   |           |



### 8.4 RECOMMENDED PB-FREE REFLOW PROFILES



LEAD-FREE PROFILE FOR PEAK REFLOW - 245°C



LEAD-FREE PROFILE FOR PEAK REFLOW - 260°C

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| PS-87623-002     |                          | KY TANG 2005/11/21    | JTAN 2005/11/21          | GG LEE 2005/11/21 |           |



#### Notes:

- 1) Temperature indicated refers to the PCB surface temperature at soldertail area.
- 2) Connector can withstand up to 2 reflow cycles with a cool-down to room temperature in- between.
- 3) Actual reflow profile also depends on equipment, solder paste, PCB thickness, and other components on the board. Please consult your solder paste & reflow equipment manufacturer for their recommendations to adopt a suitable process.

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| DOCUMENT NUMBER: |                           | CREATED / REVISED BY: | CHECKED BY:            | CHECKED BY: APPROVED BY: |           |  |
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