



# PRODUCT SPECIFICATION

## [1] SCOPE

THIS PRODUCT SPECIFICATION COVERS THE GENERAL REQUIREMENTS FOR THE 2.0 DIA W/W CONNECTOR SERIES.

## [2] PRODUCT DESCRIPTION

### [2.1] PRODUCT NAME AND PART NUMBER

#### [2.1.1] TERMINAL

| PRODUCT NAME            | PART No.   | APPLICABLE TERMINAL |
|-------------------------|------------|---------------------|
| 2.0 DIA PIN TERMINAL    | 35727-0201 | AWG #20 - #14       |
| 2.0 DIA SOCKET TERMINAL | 35728-0201 | AWG #20 - #14       |

#### [2.1.2] HOUSING

| CIRCUIT | 2.0 DIA RECEPTACLE HOUSING | 2.0 DIA PLUG HIUSING |
|---------|----------------------------|----------------------|
| 1       | 35141-0101                 | 35143-0101           |
| 2       | 35141-0200                 | 35143-0201           |
|         | 35141-0201                 |                      |
|         | 35142-0201                 |                      |
| 3       | 35141-0300                 | 35143-0301           |
|         | 35141-0301                 |                      |
| 4       | 35141-0401                 | 35143-0401           |
|         | 35142-0401                 |                      |
| 6       | 35141-0601                 | 35143-0601           |
| 9       | 35141-0901                 | 35143-0901           |
|         |                            | 35143-0905           |
| 12      | 35141-1201                 | 35143-1201           |
| 15      | 35141-1501                 | 35143-1501           |

### [2.2] MATERIALS, PLATING & DIMENSION

SEE THE APPROPRIATE DRAWINGS FOR INFORMATION ON MATERIALS, PLATINGS AND DIMENSIONS.

## [3] RATINGS

[3.1] CURRENT : 15A MAXIMUM. (AC/DC)

[3.2] VOLTAGE : 300V AC/DC (1 CIRCUIT : 600V AC/DC)

 [3.3] OPERATION TEMPERATURE RANGE : -25°C ~ +90°C  
NON-OPERATION TEMPERATURE RANGE : -25°C ~ +90°C

|   |   |   |                                |
|---|---|---|--------------------------------|
| REVISION:<br><b>E</b>                   | ECR/ECN INFORMATION:<br>EC No: <b>KOR2008-0007</b><br>DATE: <b>2007/07/16</b> | TITLE:<br><b>2.0 DIA W/W CONNECTOR SERIES</b> | SHEET No.<br><b>1 of 5</b>     |
| DOCUMENT NUMBER:<br><b>PS-35141-001</b> | CREATED / REVISED BY:<br><b>EO.KIM</b>  | CHECKED BY:<br><b>BC.YOON</b>                 | APPROVED BY:<br><b>EH.JUNG</b> |



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\* THE CURRENT RATING DIFFERS DEPENDING ON THE NUMBER OF CIRCUIT AND THE WIRE SIZE USED IN EACH CONNECTOR. THE TABLE BELOW LISTS THE CURRENT RATING AS A FUNCTION OF THE NUMBER OF CIRCUITS AND THE WIRE SIZE.

| CIRCUIT SIZE | WIRE SIZE (AWG) |     |     |     |
|--------------|-----------------|-----|-----|-----|
|              | #14             | #16 | #18 | #20 |
| 1            | 15A             | 10A | 8A  | 6A  |
| 2            | 15A             | 10A | 8A  | 6A  |
| 3            | 14A             | 9A  | 8A  | 6A  |
| 4            | 13A             | 9A  | 8A  | 6A  |
| 6            | 12A             | 8A  | 7A  | 6A  |
| 9            | 10A             | 7A  | 6A  | 5A  |
| 12           | 9A              | 7A  | 5A  | 4A  |
| 15           | 9A              | 7A  | 5A  | 4A  |

## [4] PERFORMANCE SPECIFICATION

### [4.1] ELECTRICAL PERFORMANCE

| ITEM                         | CONDITION   | REQUIREMENT             |
|------------------------------|---|-------------------------|
| 4-1<br>INSULATION RESISTANCE | MATE CONNECTORS WITH A VOLTAGE OF 500 VDC BETWEEN ADJACENT TERMINALS AND BETWEEN TERMINALS AND GROUND.                  | 1000M $\Omega$ MINIMUM. |
| 4-2<br>DIELECTRIC RESISTANCE | MATE CONNECTORS WITH A VOLTAGE OF 1500 V AC FOR ONE MINUTE BETWEEN ADJACENT TERMINALS AND BETWEEN TERMINALS AND GROUND. | NO BREAKDOWN            |
| 4-3<br>CONTACT RESISTANCE    | MATE CONNECTORS WITH A MAXIMUM VOLTAGE OF 20mV AND A CURRENT OF 100mA.  | 10 m $\Omega$ MAXIMUM.  |

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## [5] MECHANICAL PERFORMANCE

| ITEM    |   | CONDITION  | REQUIREMENT  |                                |  |                   |
|---------|---|--|--|--------------------------------|--|-------------------|
|         |   |  | (UNIT : Kg.f)  |                                |  |                   |
|         |   |  | CKT'<br>SIZE   | INSERTION<br>(MAX.)            | WITHDRAWAL<br>(MIN.)   |                   |
|         |   |  |  | INITIAL                        | INITIAL  | 10th              |
| 5-1     | CONNECTOR<br>INSERTION &<br>WITHDRAWAL<br>FORCE | INSERT AND WITHDRAW CONNECTORS<br>AT A RATE OF 26±6mm PER MINUTE.  | 1P   | 2.0                            | 0.2  | 0.15              |
|         |   |  | 2P   | 6.0                            | 0.4  | 0.3               |
|         |   |  | 3P   | 9.0                            | 0.6  | 0.45              |
|         |   |  | 4P   | 12.0                           | 0.8  | 0.6               |
|         |   |  | 6P   | 18.0                           | 1.2  | 0.9               |
|         |   |  | 9P   | 20.0                           | 1.8  | 1.35              |
|         |   |  | 12P  | 20.0                           | 2.4  | 1.8               |
|         |   |  | 15P  | 20.0                           | 3.0  | 2.25              |
|         |   |  | 5-2  | TERMINAL<br>RETENTION<br>FORCE | AXIAL PULLOUT FORCE ON THE<br>TERMINAL IN THE HOUSING AT A<br>RATE OF 25±6mm PER MINUTE. | 4.0 Kg.f MINIMUM. |
| 5-3     | HOUSING<br>LOCKING<br>STRENGTH                  | MATE THE MALE AND FEMALE OF A<br>HOUSING, WITHOUT TERMINALS, TO<br>EACH OTHER AND FIX ONE SIDE OF<br>THE HOUSING WITH THEIR LOCK<br>MECHNISM WORKING. AND THEN<br>PULL THE OTHER HOUSING IN THE<br>AXIAL DIRECTION AT THE SPEED OF<br>25±6mm PER MINUTE. | 4.0 Kg.f MINIMUM.  |                                |  |                   |
| 5-4     | WIRE<br>PULLOUT<br>FORCE                        | APPLY ON AXIAL PULLOUT FORCE ON<br>A WIRE AT A RATE OF 25±6mm PER<br>MINUTE.   | WIRE SIZE  | PULLOT FORCE                   |  |                   |
|         |   |  | AWG #20  | 6.1 Kg.f MIN.                  |  |                   |
|         |   |  | AWG #18  | 8.5 Kg.f MIN.                  |  |                   |
|         |   |  | AWG #16  | 13.3 Kg.f MIN.                 |  |                   |
| AWG #14 | 19.4 Kg.f MIN.                                  |  |  |                                |  |                   |
| 5-5     | VIBRATION                                       | *AMPLITUDE : 1.5mm PEAK TO PEAK<br>*SWEEP TIME : 10-55-10 HERTZ IN<br>ONE MINUTE<br>*DURATION : 2 HOURS IN EACH X-Y-Z<br>AXIS.   | *APPEARANCE : NO DAMAGE<br>* CONTACT RESISTANCE :<br>10mΩ MAXIMUM.<br>*DISCONTINUITY :<br>1 MICROSECOND MAX. |                                |  |                   |
| 5-6     | DURABILITY                                      | * MATE CONNECTORS UP TO 10<br>CYCLES<br>REPEATELY AT A RATE OF 10 CYCLES<br>PER MINUTE.  | *CONTACT RESISTANCE :<br>10mΩ MAXIMUM.   |                                |  |                   |

|                     |   |                                     |                |
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|     |       |   |   |
|-----|-------|---|---|
| 5-7 | SHOCK | MATE CONNECTORS AND SHOCK AT 50G'S WITH 3SAW TOOTH WAVEFORM SHOCK'S IN THE $\pm X, \pm Y, \pm Z$ AXIS | *CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM.<br>*DISCONTINUITY :<br>1 MICROSECOND MAX |
|-----|-------|---|---|

## [6] ENVIRONMENTAL PERFORMANCE

| ITEM |                       | CONDITION  |            | REQUIREMENT   |
|------|-----------------------|--|------------|---|
| 6-1  | TEMPERATURE RISE      | MATE CONNECTORS AND MEASURE THE CONTACT TEMPERATURE AT THE RATED CURRENT LOAD.   |            | 30 $^{\circ}$ C MAXIMUM..   |
| 6-2  | SALT SPRAY            | PUT THE CONNECTORS INTO THE CHAMBER AT $35 \pm 2^{\circ}$ C AND SPRAY 5% SOLUTION OF NaCl FOR 48 HOURS                   |            | *APPEARANCE : NO DAMAGE<br>*CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM.   |
| 6-3  | HUMIDITY STEADY STATE | MATE CONNECTORS AND EXPOSED TO A TEMPERATURE OF $65 \pm 2^{\circ}$ C WITH A RELATIVE HUMIDITY OF 90 TO 95% FOR 96 HOURS. |            | *APPEARANCE : NO DAMAGE<br>*CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM.<br>*DIELECTRIC STRENGTH :<br>NO BREAKDOWN<br>*INSULATION RESISTANCE :<br>500M $\Omega$ MIN. |
| 6-4  | THERMAL SHOCK         | MATE CONNNECTORS EXPOSED FOR 5 CYCLES OF   |            | *APPEARANCE : NO DAMAGE<br>*CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM.   |
|      |                       | TEMPERATURE  | DURATION   |   |
|      |                       | -55 +0/-3 $^{\circ}$ C   | 30 MINUTES |   |
|      |                       | +25 $\pm$ 10 $^{\circ}$ C  | 10 MINUTES |   |
|      |                       | +85 +0/-3 $^{\circ}$ C   | 30 MINUTES |   |
|      |                       | +25 $\pm$ 10 $^{\circ}$ C  | 10 MINUTES |   |
| 6-5  | THERMAL AGING         | MATE CONNNECTORS EXPOSED FOR 96 HOURS AT $105 \pm 2^{\circ}$ C   |            | *APPEARANCE : NO DAMAGE<br>*CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM.   |

|                     |   |                                     |                |
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| ITEM |                 | CONDITION  | REQUIREMENT  |
|------|-----------------|--|--|
| 6-6  | COLD RESISTANCE | MATE CONNECTORS : EXPOSE TO A TEMPERATURE OF $-40 \pm 3^{\circ}\text{C}$ FOR 96 HOURS. | *APPEARANCE : NO DAMAGE<br>*CONTACT RESISTANCE :<br>10m $\Omega$ MAXIMUM |

|   |   |   |                                |
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