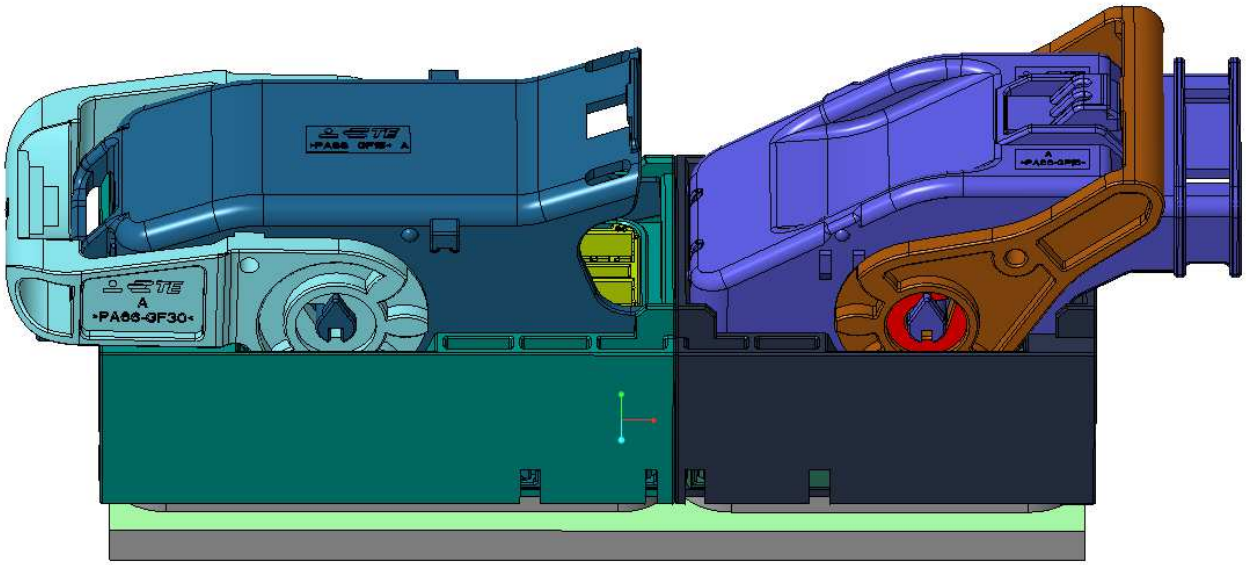
154P B-TYPE COVER ASS`Y
“ECU, TCU CONNECTOR”



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REV.	**DESCRIPTION**	**DR/CHK**	**DATE**

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1. Scope

This test specification covers a general efficiency for the plastic product applying engine room.

* Realeted PN and Descriptions

Part number	Descriptions
x-1452380-x	ECU 96P PLUG ASS`Y
x-1452419-x	ECU 96P PLUG ASS`Y
x-1452415-x	ECU 58P PLUG ASS`Y

2. Quality

The quality of connector have to meet each characteristics at column 3 with items of test in table 1~2

3. Requirements

3.1) Mechanical function

NO	Item	Characteristics	Measuring method
1	Appearance	No harmful crack, rust, burr, damage, deformation, discoloration etc.	4.1
2	Connector engage And disengage Force	150N or less	4.2
3	HSG lock strength	10kgf or more	4.3
4	Lock release force	Force on release force point of lock part shall be 6kgf or less.	4.4
5	Connector coupling sound	65 dB(A) or more	4.5
6	Cold temperature	No harmful crack, rust, burr, damage, deformation, discoloration etc.	4.6
7	Temperature and humidity cycle	No harmful crack, rust, burr, damage, deformation, discoloration etc.	4.7

< Table 1 >

3.2) Material

NO	Item	Characteristics	Measuring method
1	Heat Cycle Resistance	- No visible distortion, deformation, discoloration, tear, crack, peeling, excessive hardness change, tack or other defects. - No loose screw, nut, caulking, etc. - No internal component loss of performance degradation.	4.8
2	Water resistance	- No remarkable discoloration, peeling, swelling etc. - No rust for insert parts and accessories.	4.9
3	Chemical Resistance	- No visible discoloration, peeling, crack, blister, etc. - Min.3 grade in gray scale	4.10

< Table 2 >

4. Measurement Method

4.1) Appearance

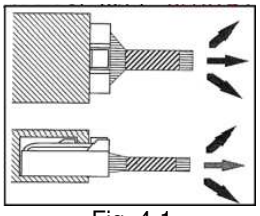
- By sense of sight and touch

4.2) Connector engage and disengage force

- Measure force by inserting and disengaging the connector with terminal assembled at constant 50 mm/min speed. However, remove lock part when measuring disengage force.

4.3) HSG lock strength

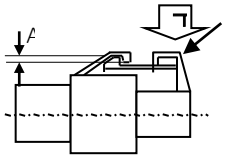
- Combine housing only, fix the one side of housing in completely locked condition, and extend the other side in axial direction and 30 angle direction at a constant speed of 100 mm/min. Then measure weight when lock structure is disengaged or destroyed.



< Fig. 4-1 >

4.4) Lock release force

- Apply force (F) to lock releasing part, and measure weight on the point of A=0. However, cut connector and then perform test at the section in order to secure visibility.



< Fig. 4-2 >

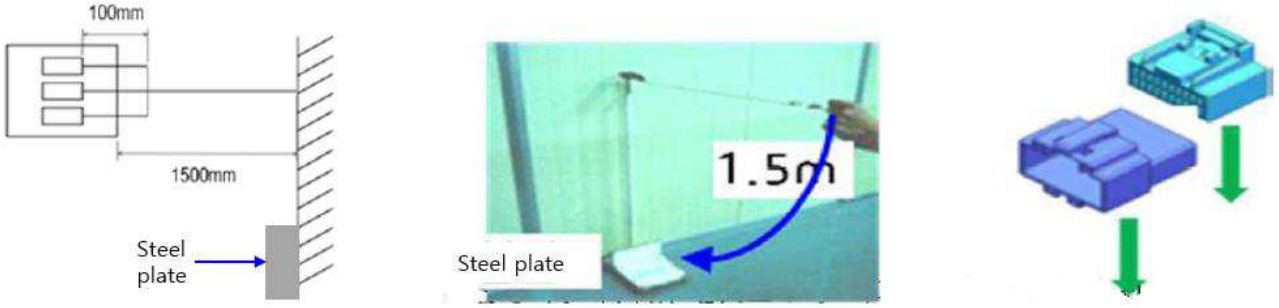
4.5) Connector coupling sound

- Put sound measurement equipment on 350± 50mm away from the connector.
  Measure the peak sound that occurs when you combine the connector. Sounds unit: dB(A)

4.6) Cold temperature

- Leave connector with terminal assembled in temperature chamber of -40℃ for 120 hours and estimate below items for each sample dividing two groups.

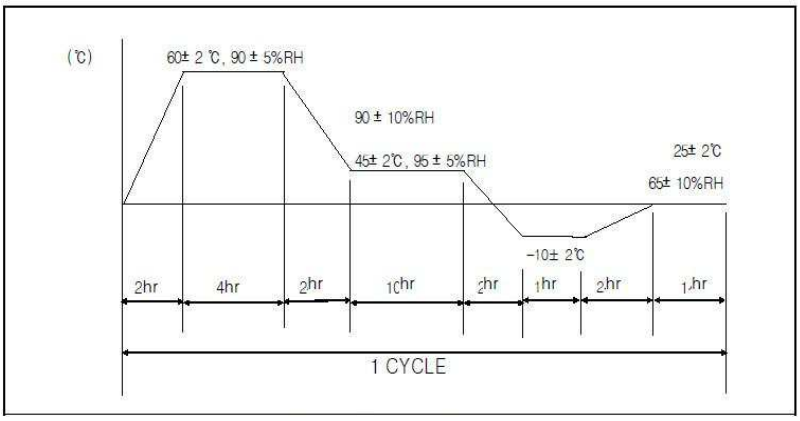
  a) Estimate voltage drop and leakage current assembled connector.
  b) Leave connector for 2 hours and separate connector with male and female, and then drop it onto the concreate surface more than 10T from 1.5m height 3 items. The method of connector drop follows figure 4-3.



< Fig. 4-3 >

4.7) Temperature and humidity cycle

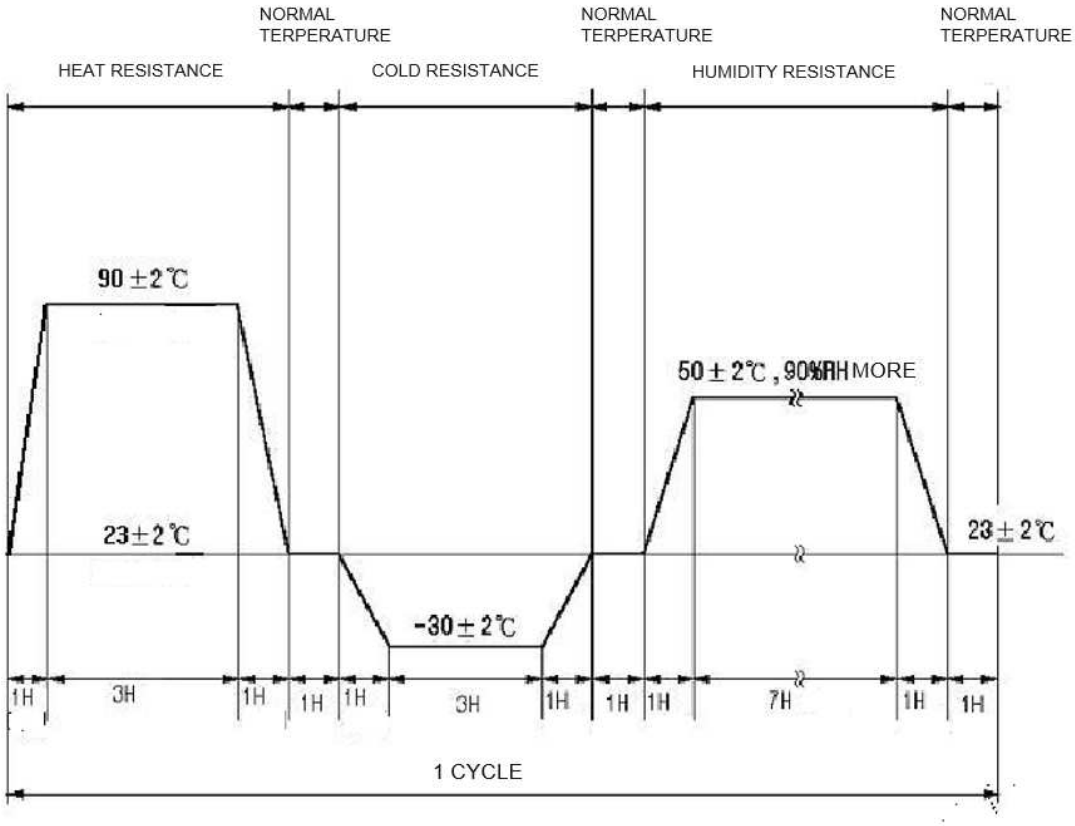
- Engage and disengage connector with terminal assembled 10 times with hands, and leave it at 25℃ ambient temperature and 65% relative humidity for 25 hours. And perform 5cycles of the method specified in figure 4-4. Then pick connector out of chamber and dry it for 2 hours or more



< Fig. 4-4 >

4.8) Heat and humidity cycle resistance

- Repeat 3 times with designated condition Figure 4-5.
  Apply the heat and humidity cycle resistance test - TYPE C for the plastic product which is to install around the engine room and to be affected by high temperature such as radiant heat or convection in engine room.



< Fig. 4-5>

4.9) Water resistance

- Dip the sample into 40±2℃ water bath for 240 hours, then clean the surface.
  Use an air blower to drain and dry it and leave the specimen under the test condition as specified 4-1 for an hours.

4.10) Chemical resistance

*. CHEMICAL TYPE : Gasoline, Paint-protect was, Was remover, Brake fluid, Anti-freezer, Engine oil, Wind shild washer, Gloss was, Solvent including Benzene or Toluene, Thinner, Nonflammable washer.

LABORATORY CONDITION	
Temperature	23 ± 2 ℃
Humidity	50 ± 5%

< Table 3 >

a) WIPPING Test

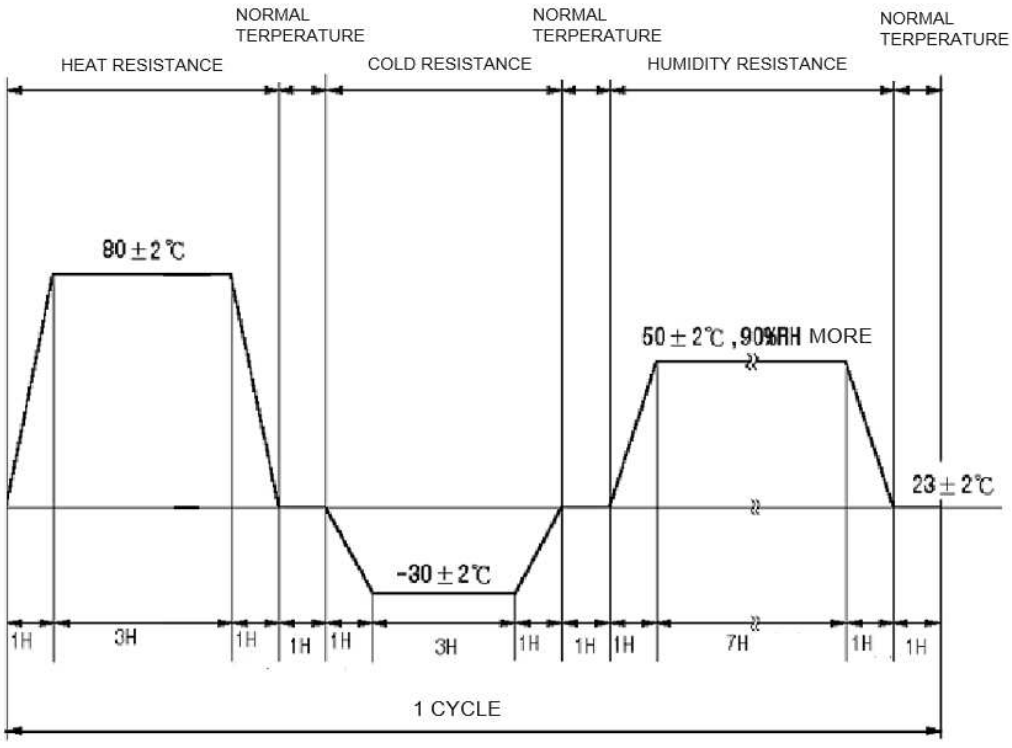
Wet the surface using 250 X 250 mm horizontally and vertically folded medicine gauze with 5 ㎖ of chemicals fully as mentioned chemical type and then leave it for 30 minutes under the test condition as table 3.

Apply the heat and humidity cycle resistance test - TYPE A as shown Figure 4-6 to it for 1 cycle and remove the chemical.

b) SPOT Test

Use the dropping pipet to drop 0.2 ㎖ to chemical as mentioned chemical type on the surface and leave it for 1 hours under the test condition as table3.

Apply the heat and humidity cycle resistance test – TYPE A as shown Figure 4-6 to it for 1 cycle and remove the chemical.



< Fig. 4-6>