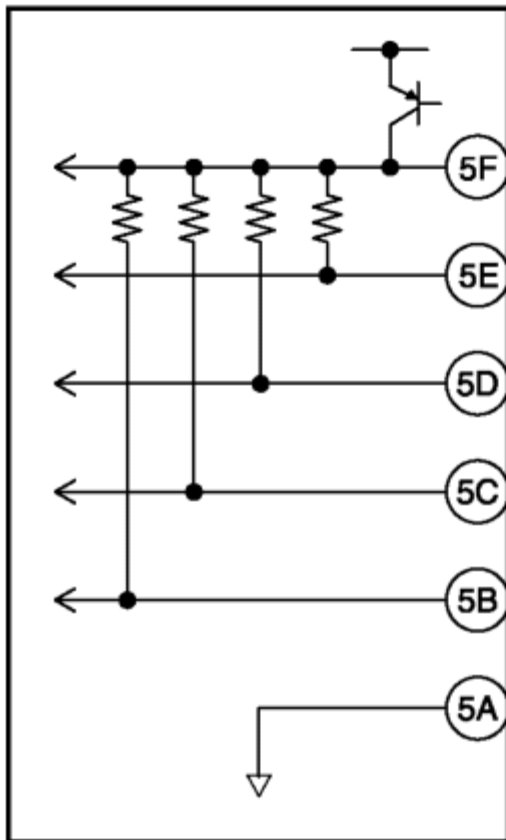


## 2012 - Mazda6 - Body and Accessories

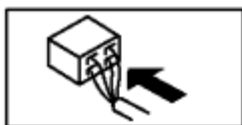
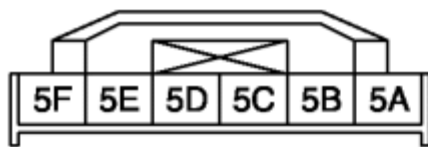
**DTC**  
**C0051:2F/ C0052:11/ C0052:13/ C0053:11/ C0053:13/ C0054:11/ C0054:13/ C0055:11/ C0055:13**  
**[BCM]**

|                     |                                                                                                                                                                                                                                                                                                                                                                    |                                                                           |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| DESCRIPTION         | C0051:2F                                                                                                                                                                                                                                                                                                                                                           | Steering angle sensor signal error                                        |
|                     | C0052:11/ C0052:13                                                                                                                                                                                                                                                                                                                                                 | Steering angle sensor A signal input circuit error                        |
|                     | C0053:11/ C0053:13                                                                                                                                                                                                                                                                                                                                                 | Steering angle sensor B signal input circuit error                        |
|                     | C0054:11/ C0054:13                                                                                                                                                                                                                                                                                                                                                 | Steering angle sensor C signal input circuit error                        |
|                     | C0055:11/ C0055:13                                                                                                                                                                                                                                                                                                                                                 | Steering angle sensor D signal input circuit error                        |
| DETECTION CONDITION | C0051:2F                                                                                                                                                                                                                                                                                                                                                           | Detected error in a combination of signals from each sensor (A, B, C, D). |
|                     | C0052:11/ C0053:11/ C0054:11/ C0055:11                                                                                                                                                                                                                                                                                                                             | The voltage lower than the specification is detected for <b>0.1 s</b> .   |
|                     | C0052:13/ C0053:13/ C0054:13/ C0055:13                                                                                                                                                                                                                                                                                                                             | The voltage higher than the specification is detected for <b>0.1 s</b> .  |
| POSSIBLE CAUSE      | <ul style="list-style-type: none"><li>Steering angle sensor connector or terminals malfunction</li><li>Steering angle sensor malfunction</li><li>BCM connector or terminals malfunction</li><li>Short to ground in steering angle sensor signal input circuit</li><li>Open circuit in steering angle sensor signal input circuit</li><li>BCM malfunction</li></ul> |                                                                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                    |                                                                           |

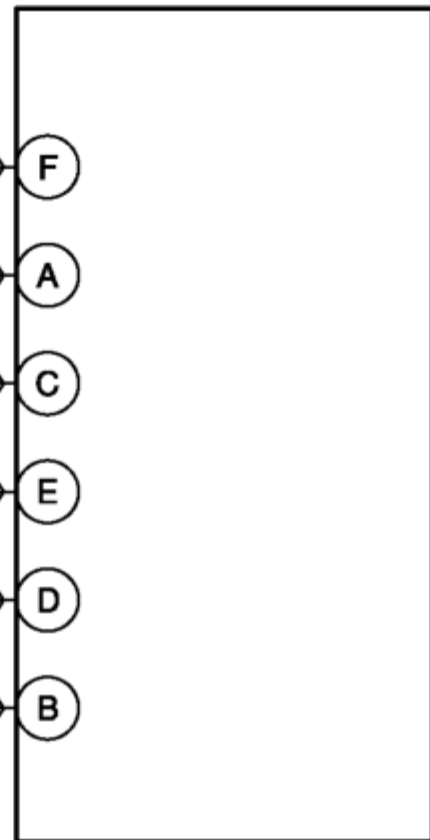
## BCM



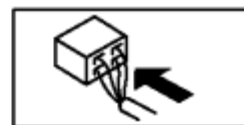
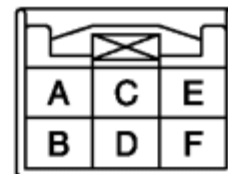
BCM WIRING HARNESS-SIDE CONNECTOR



## STEERING ANGLE SENSOR



STEERING ANGLE SENSOR WIRING HARNESS-SIDE CONNECTOR



## Diagnostic Procedure

| Step | Inspection                                                                                                                                                                                                                                                                     | Action                                                  |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1    | <p><b>PERFORM DTC INSPECTION</b></p> <ul style="list-style-type: none"> <li>Clear the DTC from the BCM memory using the M-MDS.<br/>(See <a href="#">CLEARING DTC [BCM]</a>.)</li> <li>Perform the BCM DTC inspection using the M-MDS with the steering angle sensor</li> </ul> | <p>Yes Go to the next step.</p> <p>No Go to Step 8.</p> |

|   |                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                       |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p>connected.</p> <p>(See <b>DTC INSPECTION [BCM]</b>.)</p> <ul style="list-style-type: none"> <li>Is the same DTC present?</li> </ul>                                                                                                                                                                                                                               |     |                                                                                                                                                                                                                                       |
| 2 | <p><b>INSPECT STEERING ANGLE SENSOR CONNECTOR CONDITION</b></p> <ul style="list-style-type: none"> <li>Switch the ignition to off.</li> <li>Disconnect the negative battery cable.</li> <li>Disconnect the steering angle sensor connector.</li> <li>Inspect for poor connection (damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul> | Yes | Repair or replace the connector or terminals, then go to Step 7.                                                                                                                                                                      |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |
| 3 | <p><b>INSPECT STEERING ANGLE SENSOR</b></p> <ul style="list-style-type: none"> <li>Inspect the steering angle sensor.</li> </ul> <p>(See <b>STEERING ANGLE SENSOR INSPECTION</b>.)</p> <ul style="list-style-type: none"> <li>Is there any malfunction?</li> </ul>                                                                                                   | Yes | <p>Replace the steering angle sensor, then go to Step 7.</p> <p>(See <b>COMBINATION SWITCH REMOVAL/ INSTALLATION</b>.)</p>                                                                                                            |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |
| 4 | <p><b>INSPECT BCM CONNECTOR CONDITION</b></p> <ul style="list-style-type: none"> <li>Disconnect the BCM connector.</li> <li>Inspect for poor connection (damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>                                                                                                                          | Yes | Repair or replace the connector or terminals, then go to Step 7.                                                                                                                                                                      |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | <p>C0051:2F/C0052:11/C0053:11/C0054:11/C0055:11</p> <ul style="list-style-type: none"> <li>Go to the next step.</li> </ul> <p>C0052:13/C0053:13/C0054:13/C0055:13</p> <ul style="list-style-type: none"> <li>Go to Step 6.</li> </ul> |
| 5 | <p><b>INSPECT STEERING ANGLE SENSOR SIGNAL CIRCUIT FOR SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Steering angle sensor and BCM connectors are disconnected.</li> <li>Inspect for continuity between the following terminals and body ground:</li> </ul>                                                                                         | Yes | Repair or replace the wiring harness for a possible short to ground, then go to Step 7.                                                                                                                                               |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |                                                                                             |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------|
|   | <ul style="list-style-type: none"><li>▪ Steering angle sensor terminal A (wiring harness-side)</li><li>▪ Steering angle sensor terminal C (wiring harness-side)</li><li>▪ Steering angle sensor terminal E (wiring harness-side)</li><li>▪ Steering angle sensor terminal D (wiring harness-side)</li></ul> <ul style="list-style-type: none"><li>• Is there continuity?</li></ul>                                                                                         |     |                                                                                             |
| 6 | <b>INSPECT STEERING ANGLE SENSOR SIGNAL CIRCUIT FOR OPEN CIRCUIT</b> <ul style="list-style-type: none"><li>• Steering angle sensor and BCM connectors are disconnected.</li><li>• Inspect for continuity between the following terminals:<ul style="list-style-type: none"><li>▪ Steering angle sensor terminal A (wiring harness-side) and BCM terminal 5E (wiring harness-side)</li><li>▪ Steering angle sensor terminal C (wiring harness-side) and</li></ul></li></ul> | Yes | Go to the next step.                                                                        |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No  | Repair or replace the wiring harness for a possible open circuit, then go to the next step. |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |                                                                                                                                                                                              |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p>BCM terminal 5D (wiring harness-side)</p> <ul style="list-style-type: none"> <li>Steering angle sensor terminal E (wiring harness-side) and BCM terminal 5C (wiring harness-side)</li> <li>Steering angle sensor terminal D (wiring harness-side) and BCM terminal 5B (wiring harness-side)</li> </ul> <p>• Is there continuity?</p>                                                                                                                                           |     |                                                                                                                                                                                              |
| 7 | <p><b>VERIFY TROUBLESHOOTING COMPLETED</b></p> <ul style="list-style-type: none"> <li>Make sure to reconnect all disconnected connectors.</li> <li>Reconnect the negative battery cable.</li> <li>Clear the DTC from the BCM memory using the M-MDS.<br/>(See <b>CLEARING DTC [BCM]</b> .)</li> <li>Perform the BCM DTC inspection using the M-MDS with the steering angle sensor connected.<br/>(See <b>DTC INSPECTION [BCM]</b> .)</li> <li>Is the same DTC present?</li> </ul> | Yes | <p>Repeat the inspection from Step 1.</p> <p>If the malfunction recurs, replace the BCM, then go to the next step.</p> <p>(See <b>BODY CONTROL MODULE (BCM) REMOVAL/ INSTALLATION</b> .)</p> |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No  | Go to the next step.                                                                                                                                                                         |
| 8 | <p><b>VERIFY THAT NO OTHER DTCs ARE PRESENT</b></p> <ul style="list-style-type: none"> <li>Are any DTCs present?</li> </ul>                                                                                                                                                                                                                                                                                                                                                       | Yes | <p>Go to the applicable DTC inspection.</p> <p>(See <b>DTC TABLE [BCM]</b> .)</p>                                                                                                            |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No  | DTC troubleshooting completed.                                                                                                                                                               |



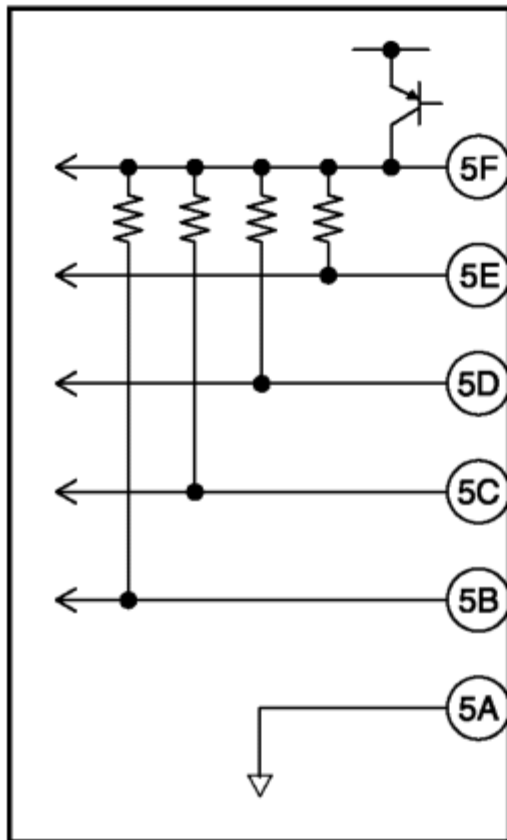
## 2012 - Mazda6 - Body and Accessories

### DTC

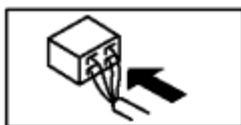
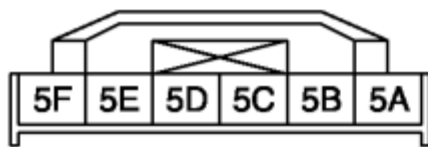
**C0051:2F/ C0052:11/ C0052:13/ C0053:11/ C0053:13/ C0054:11/ C0054:13/ C0055:11/ C0055:13 [BCM]**

|                     |                                                                                                                                                                                                                                                                                                                                                                           |                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| DESCRIPTION         | C0051:2F                                                                                                                                                                                                                                                                                                                                                                  | Steering angle sensor signal error                                        |
|                     | C0052:11/ C0052:13                                                                                                                                                                                                                                                                                                                                                        | Steering angle sensor A signal input circuit error                        |
|                     | C0053:11/ C0053:13                                                                                                                                                                                                                                                                                                                                                        | Steering angle sensor B signal input circuit error                        |
|                     | C0054:11/ C0054:13                                                                                                                                                                                                                                                                                                                                                        | Steering angle sensor C signal input circuit error                        |
|                     | C0055:11/ C0055:13                                                                                                                                                                                                                                                                                                                                                        | Steering angle sensor D signal input circuit error                        |
| DETECTION CONDITION | C0051:2F                                                                                                                                                                                                                                                                                                                                                                  | Detected error in a combination of signals from each sensor (A, B, C, D). |
|                     | C0052:11/ C0053:11/ C0054:11/ C0055:11                                                                                                                                                                                                                                                                                                                                    | The voltage lower than the specification is detected for <b>0.1 s</b> .   |
|                     | C0052:13/ C0053:13/ C0054:13/ C0055:13                                                                                                                                                                                                                                                                                                                                    | The voltage higher than the specification is detected for <b>0.1 s</b> .  |
| POSSIBLE CAUSE      | <ul style="list-style-type: none"> <li>Steering angle sensor connector or terminals malfunction</li> <li>Steering angle sensor malfunction</li> <li>BCM connector or terminals malfunction</li> <li>Short to ground in steering angle sensor signal input circuit</li> <li>Open circuit in steering angle sensor signal input circuit</li> <li>BCM malfunction</li> </ul> |                                                                           |

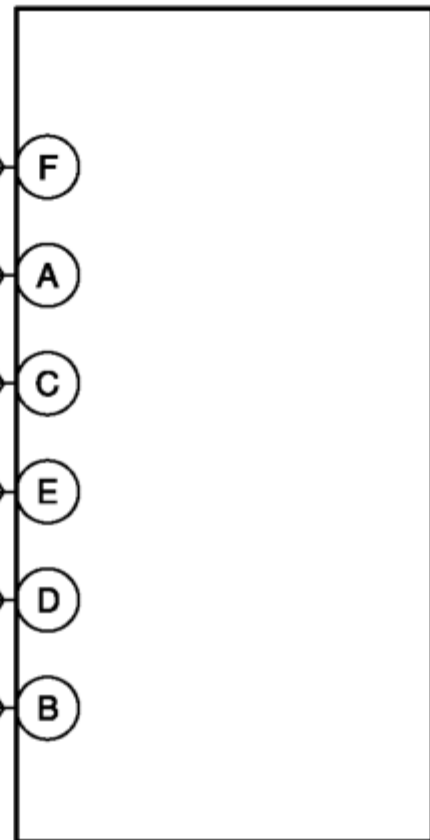
## BCM



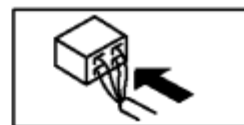
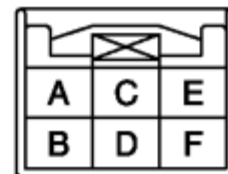
BCM WIRING HARNESS-SIDE CONNECTOR



## STEERING ANGLE SENSOR



STEERING ANGLE SENSOR WIRING HARNESS-SIDE CONNECTOR



## Diagnostic Procedure

| Step | Inspection                                                                                                                                                                                                                                                              | Action                                                  |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 1    | <b>PERFORM DTC INSPECTION</b> <ul style="list-style-type: none"> <li>Clear the DTC from the BCM memory using the M-MDS.<br/>(See <a href="#">CLEARING DTC [BCM]</a>.)</li> <li>Perform the BCM DTC inspection using the M-MDS with the steering angle sensor</li> </ul> | <p>Yes Go to the next step.</p> <p>No Go to Step 8.</p> |

|   |                                                                                                                                                                                                                                                                                                                                                                      |     |                                                                                                                                                                                                                                       |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p>connected.</p> <p>(See <b>DTC INSPECTION [BCM]</b>.)</p> <ul style="list-style-type: none"> <li>Is the same DTC present?</li> </ul>                                                                                                                                                                                                                               |     |                                                                                                                                                                                                                                       |
| 2 | <p><b>INSPECT STEERING ANGLE SENSOR CONNECTOR CONDITION</b></p> <ul style="list-style-type: none"> <li>Switch the ignition to off.</li> <li>Disconnect the negative battery cable.</li> <li>Disconnect the steering angle sensor connector.</li> <li>Inspect for poor connection (damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul> | Yes | Repair or replace the connector or terminals, then go to Step 7.                                                                                                                                                                      |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |
| 3 | <p><b>INSPECT STEERING ANGLE SENSOR</b></p> <ul style="list-style-type: none"> <li>Inspect the steering angle sensor.</li> </ul> <p>(See <b>STEERING ANGLE SENSOR INSPECTION</b>.)</p> <ul style="list-style-type: none"> <li>Is there any malfunction?</li> </ul>                                                                                                   | Yes | <p>Replace the steering angle sensor, then go to Step 7.</p> <p>(See <b>COMBINATION SWITCH REMOVAL/ INSTALLATION</b>.)</p>                                                                                                            |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |
| 4 | <p><b>INSPECT BCM CONNECTOR CONDITION</b></p> <ul style="list-style-type: none"> <li>Disconnect the BCM connector.</li> <li>Inspect for poor connection (damaged/pulled-out pins, corrosion).</li> <li>Is there any malfunction?</li> </ul>                                                                                                                          | Yes | Repair or replace the connector or terminals, then go to Step 7.                                                                                                                                                                      |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | <p>C0051:2F/C0052:11/C0053:11/C0054:11/C0055:11</p> <ul style="list-style-type: none"> <li>Go to the next step.</li> </ul> <p>C0052:13/C0053:13/C0054:13/C0055:13</p> <ul style="list-style-type: none"> <li>Go to Step 6.</li> </ul> |
| 5 | <p><b>INSPECT STEERING ANGLE SENSOR SIGNAL CIRCUIT FOR SHORT TO GROUND</b></p> <ul style="list-style-type: none"> <li>Steering angle sensor and BCM connectors are disconnected.</li> <li>Inspect for continuity between the following terminals and body ground:</li> </ul>                                                                                         | Yes | Repair or replace the wiring harness for a possible short to ground, then go to Step 7.                                                                                                                                               |
|   |                                                                                                                                                                                                                                                                                                                                                                      | No  | Go to the next step.                                                                                                                                                                                                                  |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |                                                                                             |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------|
|   | <ul style="list-style-type: none"> <li>▪ Steering angle sensor terminal A (wiring harness-side)</li> <li>▪ Steering angle sensor terminal C (wiring harness-side)</li> <li>▪ Steering angle sensor terminal E (wiring harness-side)</li> <li>▪ Steering angle sensor terminal D (wiring harness-side)</li> </ul> <ul style="list-style-type: none"> <li>• Is there continuity?</li> </ul>                                                                                                               |     |                                                                                             |
| 6 | <p><b>INSPECT STEERING ANGLE SENSOR SIGNAL CIRCUIT FOR OPEN CIRCUIT</b></p> <ul style="list-style-type: none"> <li>• Steering angle sensor and BCM connectors are disconnected.</li> <li>• Inspect for continuity between the following terminals:               <ul style="list-style-type: none"> <li>▪ Steering angle sensor terminal A (wiring harness-side) and BCM terminal 5E (wiring harness-side)</li> <li>▪ Steering angle sensor terminal C (wiring harness-side) and</li> </ul> </li> </ul> | Yes | Go to the next step.                                                                        |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No  | Repair or replace the wiring harness for a possible open circuit, then go to the next step. |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |                                                                                                                                                                                              |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | <p>BCM terminal 5D (wiring harness-side)</p> <ul style="list-style-type: none"> <li>Steering angle sensor terminal E (wiring harness-side) and BCM terminal 5C (wiring harness-side)</li> <li>Steering angle sensor terminal D (wiring harness-side) and BCM terminal 5B (wiring harness-side)</li> </ul> <p>• Is there continuity?</p>                                                                                                                                           |     |                                                                                                                                                                                              |
| 7 | <p><b>VERIFY TROUBLESHOOTING COMPLETED</b></p> <ul style="list-style-type: none"> <li>Make sure to reconnect all disconnected connectors.</li> <li>Reconnect the negative battery cable.</li> <li>Clear the DTC from the BCM memory using the M-MDS.<br/>(See <b>CLEARING DTC [BCM]</b> .)</li> <li>Perform the BCM DTC inspection using the M-MDS with the steering angle sensor connected.<br/>(See <b>DTC INSPECTION [BCM]</b> .)</li> <li>Is the same DTC present?</li> </ul> | Yes | <p>Repeat the inspection from Step 1.</p> <p>If the malfunction recurs, replace the BCM, then go to the next step.</p> <p>(See <b>BODY CONTROL MODULE (BCM) REMOVAL/ INSTALLATION</b> .)</p> |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No  | Go to the next step.                                                                                                                                                                         |
| 8 | <p><b>VERIFY THAT NO OTHER DTCs ARE PRESENT</b></p> <ul style="list-style-type: none"> <li>Are any DTCs present?</li> </ul>                                                                                                                                                                                                                                                                                                                                                       | Yes | <p>Go to the applicable DTC inspection.</p> <p>(See <b>DTC TABLE [BCM]</b> .)</p>                                                                                                            |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No  | DTC troubleshooting completed.                                                                                                                                                               |

