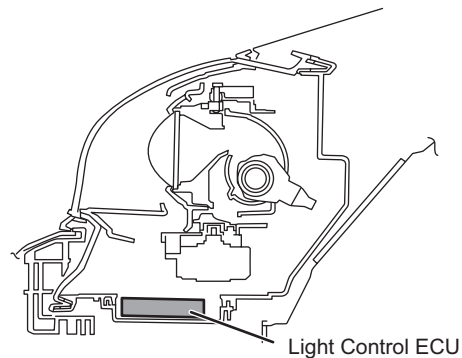


Light Control ECU

- The light control ECU provides an alternating current (AC) power supply that is necessary for illuminating the HID bulbs.
 - The frequency of the alternating current power supply is set above several hundred Hz, so that the lights do not appear to be flickering.
- Furthermore, an electromagnetic shield is provided so that the onboard radio would not be affected by electromagnetic interference.



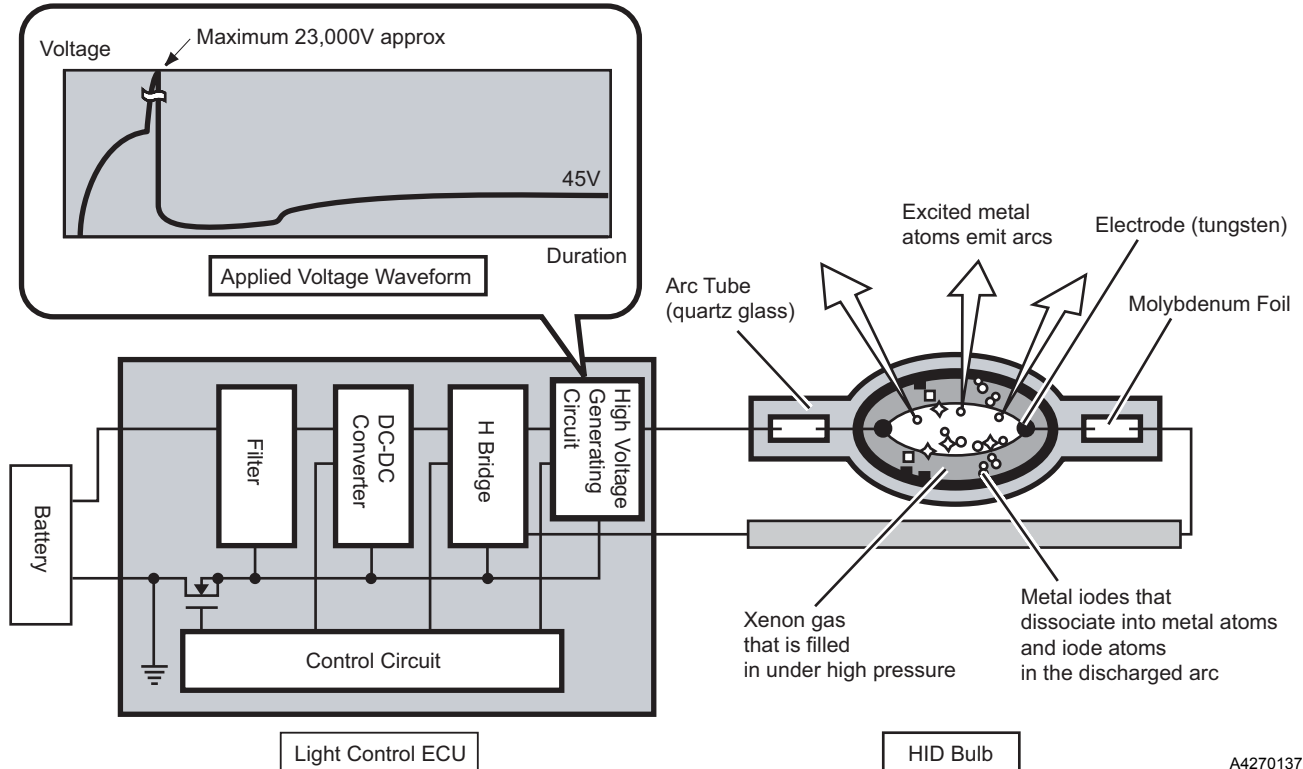
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Light Control ECU Specifications

Items	Specifications
Rated Voltage [V]	13.5
Operating Voltage [V]	9~16
Maximum Generated Voltage [V]	22000±3000
Maximum Input Amperage [A]	20 or less
Maximum Output Amperage [A]	2.4±0.2
Maximum Output Wattage [W]	64±6
Normal Input Amperage [A]	3.5 or less
Normal Output Wattage [A]	34±2
Normal Illumination Frequency [Hz]	320+70/—50

Operation

- The light control ECU effects control to generate a high voltage of up to approximately 20,000V in order to ensure the instantaneous and stable illumination of the HID bulbs. Because this ECU generates a high voltage, it is provided with various types of failsafe functions. In addition, measures are provided to ensure its reliability against heat, humidity, and vibration.



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Flow of HID Bulb Illumination Control

1. High voltage (approx. 20,000V) is applied to both electrodes of the HID bulb.
2. After the xenon gas that is filled in the arc tube at a high pressure is dissociated electrolytically, it discharges arcs.
3. The temperature in the arc tube rises as a result of the discharging of arcs. This causes the metal iodes to vaporize.
4. The vaporized metal iodes (sodium and scandium) dissociate into metal atoms and iode atoms in the discharged arc.
5. Metal atoms become excited and emit light of a particular spectrum.

Failsafe

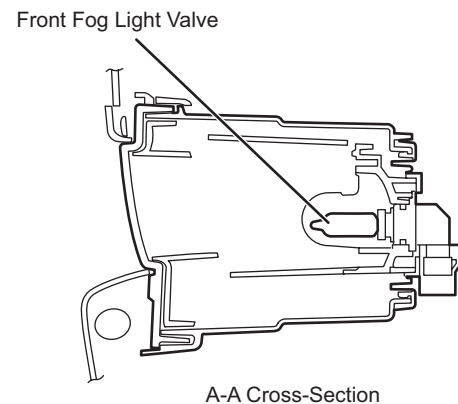
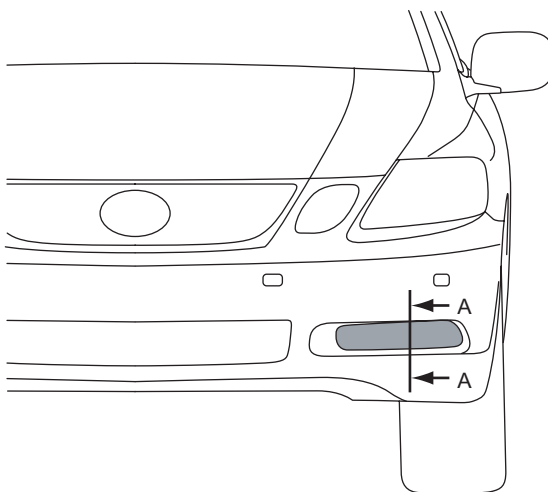
- When there is a failure in the output voltage, input voltage, or headlight voltage, the light control ECU performs the failsafe functions indicated below.

List of Failsafe Functions of Light Control ECU

Failure Detection Condition	Failsafe Description
Detection of an output failure (short, open, or leak) or flashing bulbs	If there is a failure in the output voltage or the bulbs flash continuously over 60 seconds, the light control ECU stops the illumination of the headlights, and maintains this state until the power supply is restored (headlight switch turned from OFF to ON, or ignition turned from OFF to ON).
Detection of an input failure	If the input voltage deviates from the operating voltage (between 9 and 16V), the light control ECU stops the illumination of the headlights. It resumes the illumination of the headlights as soon as the input voltage reverts to the operating voltage range. However, if the input voltage drops after the headlights illuminate, the light control ECU will continue illuminating the headlights until the critical illumination holding voltage (below 6V) is reached.
Detection of a headlight voltage failure	If the light control ECU detects a headlight voltage failure, it will stop the illumination of the headlights and maintains this state until the power supply is restored (headlight switch turned from OFF to ON, or ignition turned from OFF to ON).

Front Fog Light

- Contoured, rectangular front fog lights are provided on all models as standard equipment. The illumination color of the front fog lights is white.
- The outer lenses have the see-through look, and multi-reflectors treated with vapor-deposition aluminum are used.



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Front Fog Light Specifications

Light Names	Valve Specifications
front fog lights	12V 51W : HB4