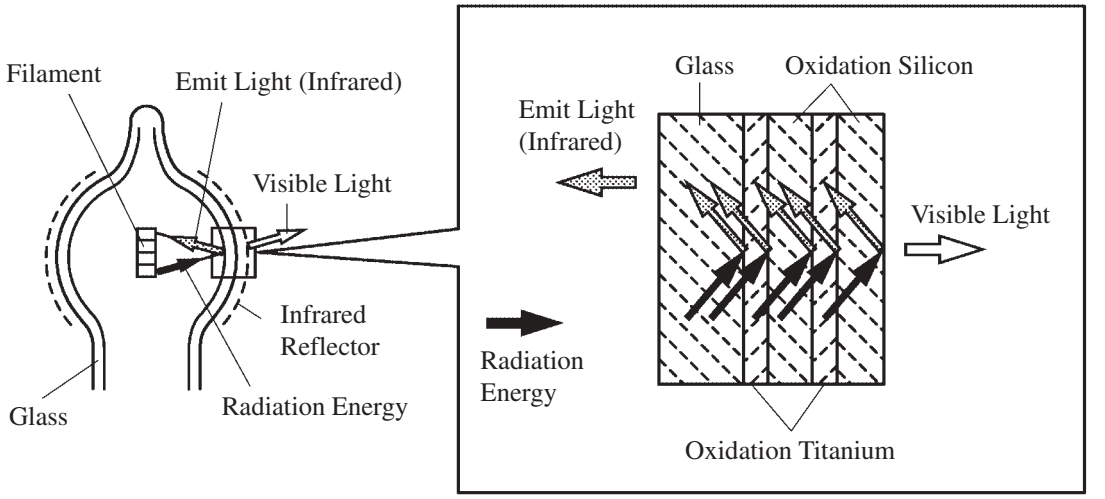
4. HIR-1 Bulb (for HI beam)

- The HIR-1 bulb contains a filament and a curved shape glass.
- An infrared reflector, which contains alternate layers of oxidation titanium and oxidation silicon, is used on the curved shape glass surface.
- With the previous halogen bulb is radiated by the filament is used for the visible light, and most of the energy is dissipated in the form of infrared light (heat energy).
- With the HIR-1 bulb, the infrared reflector reflects the infrared light (heat energy) to reheat the filament in order to increase the amount of the visible light



Infrared Reflector

228CE14

5. Light Control ECU

General

The light control ECU is an electronic control unit, which is necessary for illuminating the metal halide bulb (HID). A light control ECU is located under each headlight unit. This ECU provided the functions listed below.

- Generates the high voltage (approx. 20,000 volts), which is applied to the electrodes of the bulbs to enable the HID headlights to start to illuminate.
- Optimally controls the amperage and voltage in order to quickly provide and optimal amount of light immediately after the bulbs have been turned ON and to enable the bulbs to continue to illuminate in a stable manner.
- A fail-safe function is provided as a countermeasure against the high voltage that is generated in case that a problem occurs in the headlight system.

Fail-Safe Function

The light control ECU executes the fail-safe actions listed below in accordance with the item that has been detected.

Item	Outline
Detection of Abnormal Input Voltage	If the voltage that is input to the light control ECU deviates from the operating voltage (9 – 16 volts), the light control ECU stops illuminating the headlights, and resumes illuminating the headlights once the voltage reverts to the operating voltage range. However, if the input voltage decreases after the headlights have illuminated, the headlights will remain illuminated until the bulbs are extinguished.
Detection of Abnormal Output (Open Circuit or Short Circuit) or Flashing Bulb	If an abnormal condition (open or short) occurs in the voltage that is output by the light control ECU, or if the bulb flashes, the light control ECU stops illuminating the headlights and will maintain this state until the power is reinstated (by turning the headlight control switch from OFF to ON).
Detection of Bulb Open	If a bulb is not inserted in its socket, the light control ECU stops generating high voltage until the bulb is inserted correctly and the power is reinstated (by turning the headlight control switch from OFF to ON or turning the ignition switch from OFF to ON).