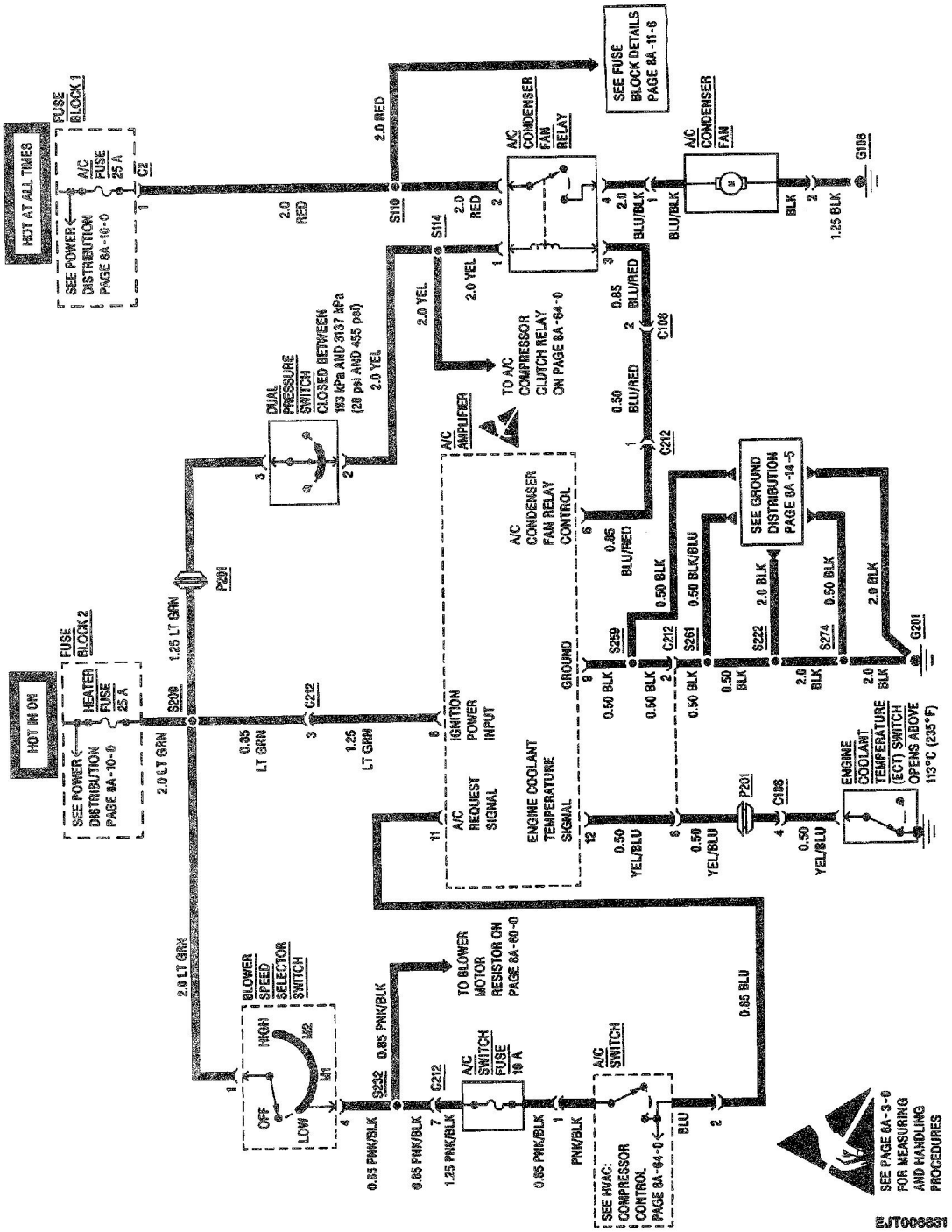
# COOLANT FAN


HOT AT ALL TIMES
FUSE BLOCK 1
SEE POWER DISTRIBUTION PAGE 8A-10-0
A/C FUSE 25 A
C2
2.0 RED
S110
SEE FUSE BLOCK DETAILS PAGE 8A-11-6
A/C CONDENSER FAN RELAY
S114
2.0 YEL
TO A/C COMPRESSOR CLUTCH RELAY ON PAGE 8A-64-0
A/C CONDENSER FAN
G108
1.25 BLK
DUAL PRESSURE SWITCH CLOSED BETWEEN 193 kPa AND 3137 kPa (28 psi AND 455 psi)
A/C AMPLIFIER
C108
C212
0.85 BLU/RED
0.50 BLU/RED
HOT IN ON
FUSE BLOCK 2
HEATER FUSE 25 A
S209
P201
1.25 LT GRN
2.0 LT GRN
0.85 LT GRN
1.25 LT GRN
IGNITION POWER INPUT
A/C CONDENSER FAN RELAY CONTROL
GROUND
S259
S261
S222
S274
G201
0.50 BLK
0.50 BLK/BLU
2.0 BLK
SEE GROUND DISTRIBUTION PAGE 8A-14-5
A/C REQUEST SIGNAL
ENGINE COOLANT TEMPERATURE SIGNAL
0.50 YEL/BLU
P201
C108
ENGINE COOLANT TEMPERATURE (ECT) SWITCH OPENS ABOVE 113°C (235°F)
BLOWER SPEED SELECTOR SWITCH
OFF
LOW
M1
M2
HIGH
S232
0.85 PNK/BLK
TO BLOWER MOTOR RESISTOR ON PAGE 8A-60-0
C212
A/C SWITCH FUSE 10 A
1.25 PNK/BLK
A/C SWITCH
0.85 BLU
SEE HVAC: COMPRESSOR CONTROL PAGE 8A-64-0
SEE PAGE 8A-3-0 FOR MEASURING AND HANDLING PROCEDURES
EJT006831

| COMPONENT | LOCATION | 201-PG | FIG. | CONN |
|---|---|---|---|---|
| A/C Amplifier | Behind RH I/P on Evaporator | | | 64-02 |
| A/C Condenser Fan | Between Grille and Radiator | 03 | A | |
| A/C Condenser Fan Relay | RH Engine Compartment near Fuse Block 1 | 02 | A | 202-15A1 |
| A/C Switch | Center of I/P above Radio | | | |
| A/C Switch Fuse | RH I/P, behind I/P Compartment | | | |
| Blower Speed Selector Switch | Center of I/P above Radio | | | 202-15A2 |
| Dual Pressure Switch | RH Front Engine Compartment, behind Radiator | 03 | A | |
| Engine Coolant Temperature (ECT) Switch | RH side of Engine in Thermostat Housing | 05 | A | |
| Fuse Block 1 | RH Engine Compartment, front of Battery | 01 | A | |
| C2 (1 Cavity) | Main Harness to Fuse Block 1, below Fuse Block 1 | 01 | A | |
| Fuse Block 2 | Under LH I/P | 06 | A | |
| C108 (4 Cavities) | Main Harness to A/C Sub-Harness, behind RH Headlamp | | | 202-16A1 |
| C212 (10 Cavities) | Main Harness to A/C Amplifier Jumper Harness, RH I/P, behind I/P Compartment | | | 202-10A1 |
| G108 | RH Inner Fender, near Battery | | | |
| G201 | Behind RH I/P, near Blower Assembly | 06 | A | |
| P201 | RH Rear Engine Compartment on Bulkhead, near Battery | 01 | A | |
| S110 | Outer A/C Harness, RH Engine Compartment, near Strut Tower | | | |
| S114 | Outer A/C Harness, RH Engine Compartment on top of Strut Tower | | | |
| S209 | Main Harness, center of I/P near Blower Speed Selector Switch | | | |
| S222 | Main Harness, center of I/P, near Blower Speed Selector Switch | | | |
| S232 | Main Harness, RH side of I/P, near Blower Speed Selector Switch | | | |
| S259 | A/C Jumper Harness, behind RH I/P near A/C Amplifier | | | |
| S261 | Main Harness, near C212 connector breakout | | | |
| S274 | Main Harness, near Engine Control Module (ECM) | | | |

## TROUBLESHOOTING HINTS

1. Check the HEATER Fuse with a fuse tester.
2. Check the A/C Fuse with a fuse tester.
3. Check that grounds G108 and G201 are clean and tight.
4. Before diagnosing suspected A/C Condenser Fan problems, be sure that the A/C Compressor Clutch engages when the A/C SWITCH is pushed to ON and the BLOWER SPEED SELECTOR SWITCH is in any position but "OFF." If the A/C Compressor Clutch does not engage as it should, refer to SECTION 8A-64.
5. Check that the A/C system has a proper charge of refrigerant. Refer to SECTION 1B.

## COOLANT FAN

## SYSTEM DIAGNOSIS

| TEST | RESULT | ACTION |
|---|---|---|
| 1. Turn IGNITION SWITCH to "ON." Press A/C SWITCH "ON." Move BLOWER SPEED SELECTOR SWITCH to any position except "OFF." | A/C CONDENSER FAN operates. | GO to step 2. |
| | A/C CONDENSER FAN does not operate. | GO to step 3. |
| 2. Press A/C SWITCH "OFF" and move BLOWER SPEED SELECTOR SWITCH to "OFF." | A/C CONDENSER FAN stops. | All systems in this Section are functioning normally. |
| | A/C CONDENSER FAN continues to operate. | GO to step 8. |
| 3. Disconnect A/C CONDENSER FAN connector. Connect a test lamp from connector cavity 1 to cavity 2. | Test lamp lights. | Replace A/C CONDENSER FAN. |
| | Test lamp does not light. | GO to step 4. |
| 4. Connect a test lamp from A/C CONDENSER FAN connector cavity 1 to chassis ground. | Test lamp lights. | Repair BLK ground wire between A/C CONDENSER FAN and G108. |
| | Test lamp does not light. | GO to step 5. |
| 5. Backprobe A/C CONDENSER FAN RELAY connector with a test lamp from cavity 4 to chassis ground. | Test lamp lights. | Repair open in BLU/BLK wire between A/C CONDENSER FAN RELAY and A/C CONDENSER FAN. |
| | Test lamp does not light. | GO to step 6. |
| 6. Disconnect A/C CONDENSER FAN RELAY connector. Connect a test lamp from connector cavity 3 to B+. | Test lamp lights. | Check for an open in YEL or RED wire to A/C CONDENSER FAN RELAY. If OK, replace A/C CONDENSER FAN RELAY. |
| | Test lamp does not light. | GO to step 7. |
| 7. Backprobe A/C AMPLIFIER connector with test lamp from cavity 6 to B+. | Test lamp does not light. | Replace A/C AMPLIFIER. |
| | Test lamp lights. | Repair open in BLU/RED wire between A/C AMPLIFIER and A/C CONDENSER FAN RELAY. |
| 8. Disconnect A/C CONDENSER FAN RELAY connector. | A/C CONDENSER FAN continues to operate. | Repair short to voltage in BLU/BLK wire. |
| | A/C CONDENSER FAN stops. | GO to step 9. |
| 9. Connect a test lamp from A/C CONDENSER FAN RELAY connector cavity 3 to B+. | Test lamp does not light. | Replace A/C CONDENSER FAN RELAY. |
| | Test lamp lights. | Check for a short to ground in BLU/RED wire. If OK, replace A/C AMPLIFIER. |

# COMPONENT REPLACEMENT INFORMATION

For component replacement procedures, refer to the section listed below.



## CIRCUIT OPERATION

With the Ignition Switch in the "ON" position, system voltage is applied to the DUAL PRESSURE SWITCH through the HEATER Fuse. The DUAL PRESSURE SWITCH closes when the pressure in the A/C system is between 193 kPa (28 psi) and 3137 kPa (455 psi). Voltage is then provided to the A/C CONDENSER FAN RELAY coil.

The A/C CONDENSER FAN RELAY coil is grounded by the A/C AMPLIFIER, provided the A/C AMPLIFIER has not received a low temperature signal from the Evaporator Thermistor.

When the relay is energized through the DUAL PRESSURE SWITCH, battery voltage is applied to the A/C CONDENSER FAN through the A/C Fuse and the contacts of the relay. Since the A/C CONDENSER FAN is permanently grounded at G108, the coolant fan operates as long as the relay is energized.

The A/C AMPLIFIER monitors the Evaporator Thermistor mounted inside the evaporator housing. The Evaporator Thermistor converts evaporator core temperature into a resistance value. Using this resistance value, the A/C AMPLIFIER can sense when evaporator temperature drops below 0° C (32° F). When this occurs, the A/C AMPLIFIER removes the A/C CONDENSER FAN RELAY coil ground (as well as the A/C Clutch Relay coil ground). This prevents evaporator frost and ice-up which reduces air flow and reduces the unit's cooling capacity.

Whenever the pressure in the A/C system drops below 193 kPa (28 psi) or rises above 3137 kPa (455 psi), the DUAL PRESSURE SWITCH opens, the A/C CONDENSER FAN RELAY is de-energized, and voltage to the A/C CONDENSER FAN is interrupted.