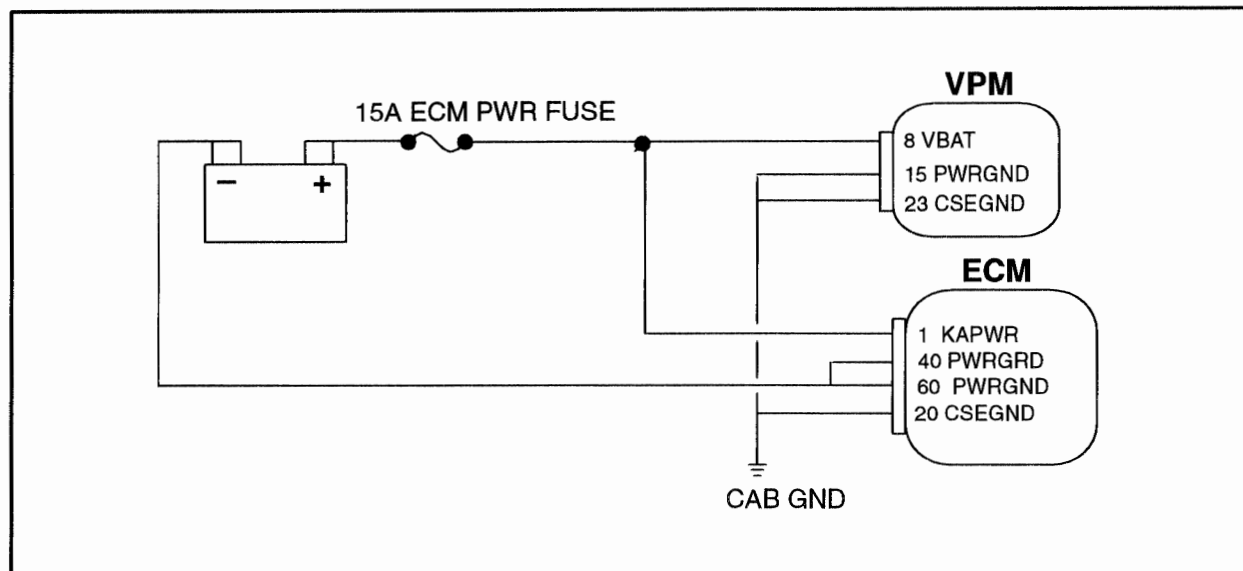


## ELECTRONIC CONTROL SYSTEM DIAGNOSTICS

### KEEP ALIVE MEMORY POWER (KAM PWR)

#### KEEP ALIVE MEMORY POWER AND VPM BATTERY POWER CIRCUIT



#### CIRCUIT OPERATION

The Electronic Control Module (ECM) has information stored in volatile memory which is erased or lost when power is disconnected from the module. This memory is referred to as Keep Alive Memory (KAM). The ECM stores historical diagnostic information from previous engine operating cycles, learned limits from certain engine and vehicle sensors and programmable parameters sent from the VPM.

The Vehicle Personality Module (VPM) utilizes the KAM power circuit to remain powered for at least 30 minutes after each key off cycle to record accumulator values for vehicle miles, hours and fuel used.

#### FAULT DETECTION MANAGEMENT

On every power up KAM memory in the ECM is checked by the processor to determine if any information in memory has been lost or can be stored correctly. A fault code will be set if power has been disconnected, information sent from the VPM does not agree with the last power up or if the memory internal to the ECM is defective.

There is no fault detection for loss of KAM power to the VPM, however, the VPM will be unable to communicate with the Electronic Service Tool (EST) when the ignition key is in the OFF position.

# ELECTRONIC CONTROL SYSTEM DIAGNOSTICS

## KEEP ALIVE MEMORY POWER (KAM PWR)

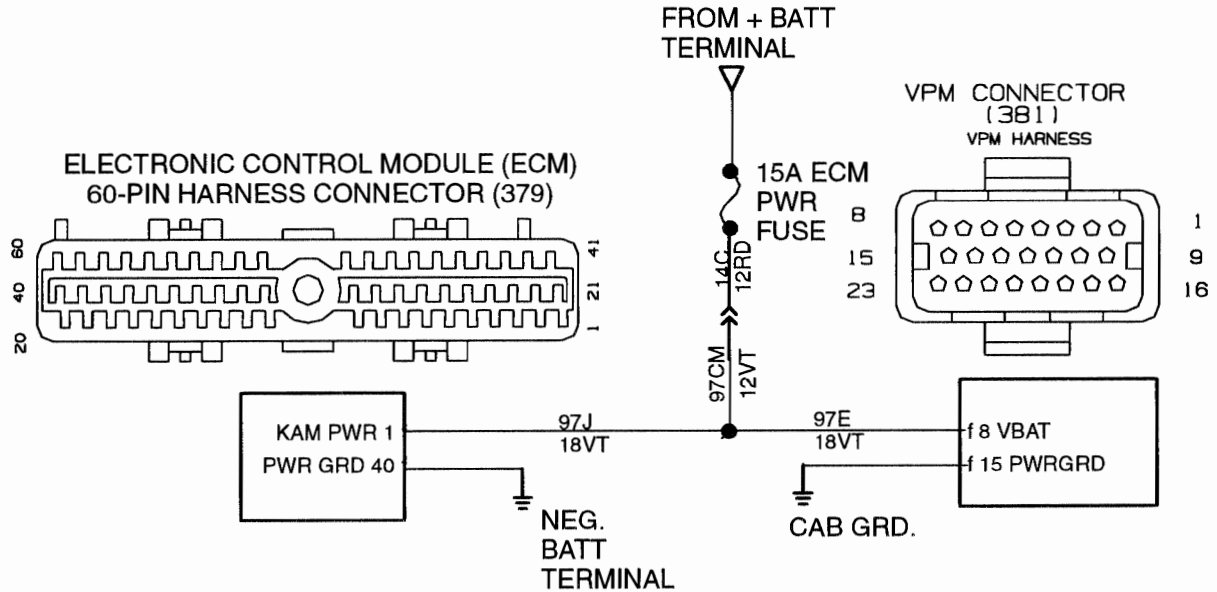
Section 3.5  
Page 175

Keep Alive Memory Power  
(KAM PWR)

Fault Codes:

224 KAM Corrupt

615 Programmable Parameter KAM Corrupt



KAMPWR to ECM – Connector (379) with breakout box installed and key OFF

Test Points	Spec.	Comments
#1 to grd.	$12 \pm 1.5$ volts	< than 10.5 v check connections, if 0 volts check for open/short to ground or blown fuse (If fuse is open the ECM will not be powered with key ON and Prolink will not read codes)
#1 to #40	$12 \pm 1.5$ volts	< than 10.5 v check connections, if 0 volts check for open in ground path.

**NOTE:** If the KAM PWR to the ECM is good and ground circuits are good, and Flash code 224 or 615 remains active, the ECM is defective.

KAMPWR to VPM – Connector (381)

Test Points	Spec.	Comments
#8 to grd.	$12 \pm 1.5$ volts	< than 10.5 v check connections, if 0 volts check for open/short to ground or blown fuse (If fuse is open the ECM will not be powered with key ON and Prolink will not read codes)
#8 to #15	$12 \pm 1.5$ volts	< than 10.5 v check connections, if 0 volts check for open in ground path.

### Fault Code Descriptions

224 Kam Memory

615 Programmable Parameter KAM Corrupt Memory Information

## ELECTRONIC CONTROL SYSTEM DIAGNOSTICS

### KEEP ALIVE MEMORY POWER (KAM PWR)

#### ECM KAM AND VPM BATTERY POWER EXTENDED SYSTEM DESCRIPTION

Refer to circuit diagram on page 177 for the following discussion.

The ECM Keep Alive Memory (KAM) circuit 97J provides battery power from the Positive battery terminal through ECM connector 379 to ECM terminal 1 at all times. The circuit is protected by 15 amp, #1 ECM PWR Fuse, which also supplies power to the VPM, VBAT terminal (8). KAM stores fault codes and operating constants between engine starts.

#### ECM DIAGNOSTICS

During normal vehicle operation, the ECM performs certain tests. When the key is turned ON, the ECM performs the Start-Up KAM Test to test its Keep-Alive Memory. The test is performed once each time the key is turned on or when the ECM resets.

The ECM performs a test to determine if the memory is working properly, but a lack of battery power to ECM terminal 1 can cause fault code(s) 224 and 653 to be set.

When power to KAM has been disrupted, there will be no inactive faults.

#### FLASH CODE 224

##### SID 254 FMI 2

##### ECM: KAM CORRUPT

Flash Code 224 can be caused by:

- A. Short or open in KAM circuit. High or low voltage to ECM terminal 1 from the KAM battery supply circuits will cause code 224.

Note that if the battery cable has been disconnected, on the next key ON cycle, code 224 will be present, indicating that the KAM memory has lost power. The code will change to inactive status on the next key cycle.

- B. Faulty KAM memory in the ECM.

Conditions causing Flash Code 224 can also cause Flash Code 615 to occur.

#### FLASH CODE 615

##### SID 254 FMI 13

##### ECM: PROGRAMMABLE PARAMETER KAM CORRUPT FAULT

If flash code 615 occurs when the KAM power supply to the ECM is good, then the KAM memory is defective. Refer to Electronic Control Module Diagnostics (ECM) in this manual section.

#### TROUBLESHOOTING

##### BEFORE TROUBLESHOOTING

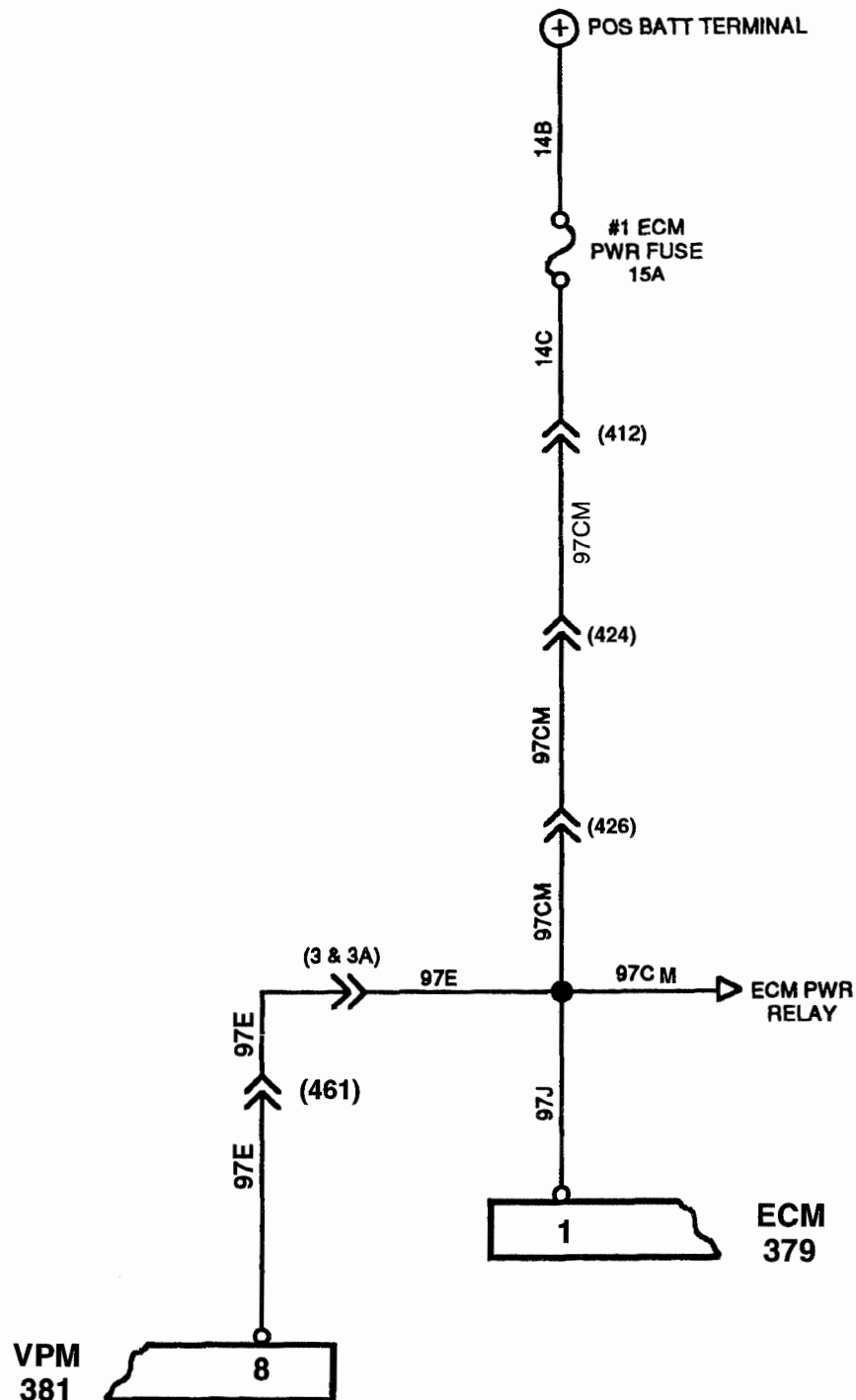
- A. Before troubleshooting, make sure that the batteries are fully charged! Check battery connections and grounds for clean, tight connections free of damage. Voltage tests will give misleading readings if batteries are not fully charged.
- B. Before troubleshooting a particular circuit, inspect connectors for pushed back, loose or damaged (spread or bent) terminals, or wires with cut strands, etc. The wires and connections must be free of damage or corrosion. When some connectors corrode, a light white residue will be present that must be removed.
- C. Before troubleshooting, inspect the suspect circuit grounds for clean, tight connections, free of damage or corrosion.

If Flash code 224 or 653 is active, perform KAM Power Circuit test on page 179.

## KEEP ALIVE MEMORY POWER (KAM PWR)

## CIRCUIT DIAGRAM

KAM CIRCUIT WITH TRUCK OR FBC MODELS

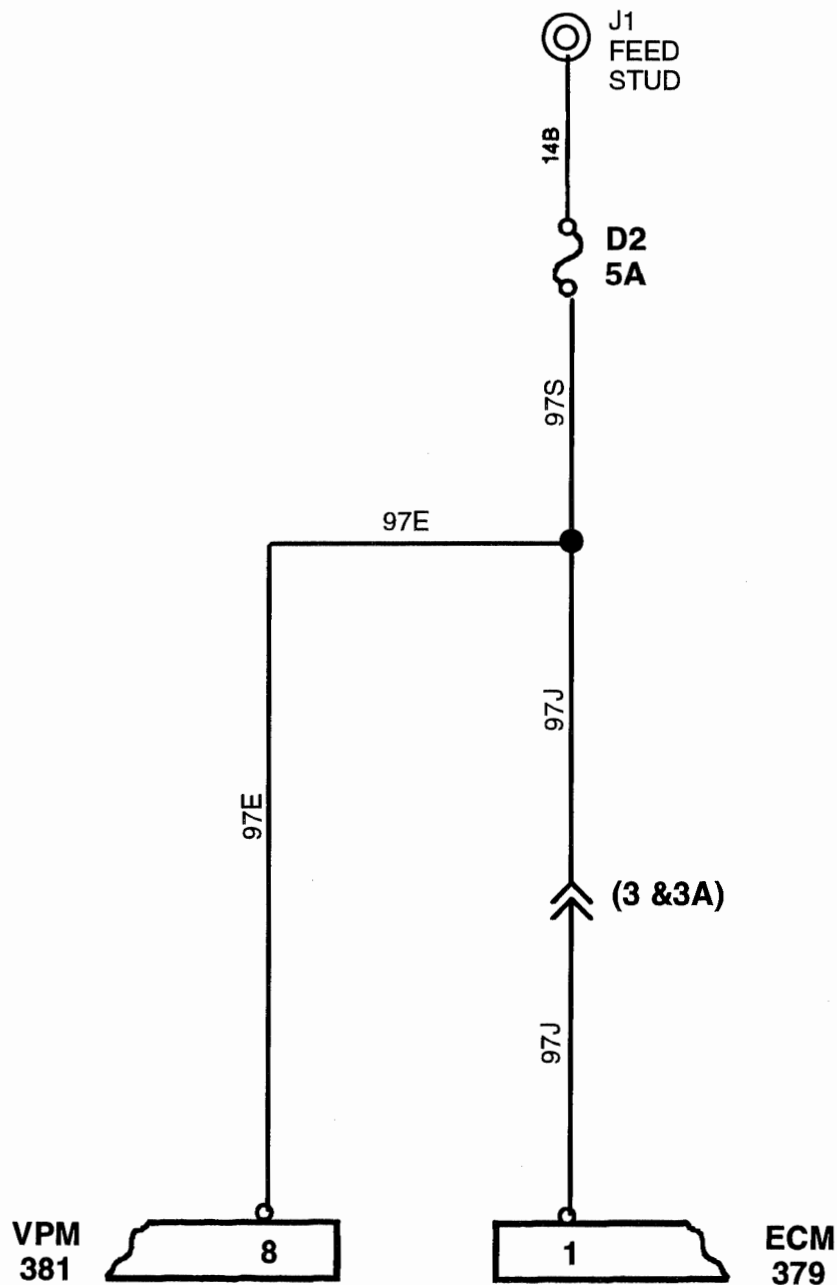


# ELECTRONIC CONTROL SYSTEM DIAGNOSTICS

## KEEP ALIVE MEMORY POWER (KAM PWR)

### CIRCUIT DIAGRAM

KAM CIRCUIT WITH 1652SC MODEL



## KEEP ALIVE MEMORY POWER (KAM PWR)

## TROUBLESHOOTING (Continued)

## KAM POWER CIRCUIT TEST

If the ECM is powered, the fuse does not need to be checked as the same fuse feeds the ECM.

