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Model Year: 2007	Model: Camry	Doc ID: RM000000PDS00ZX
Title: 2GR-FE ENGINE CONTROL SYSTEM: SFI SYSTEM: FREEZE FRAME DATA (2007 Camry)		

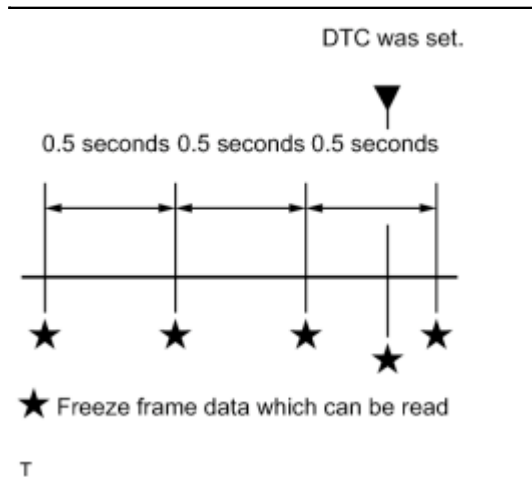
FREEZE FRAME DATA

1. DESCRIPTION

The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can be helpful in determining whether the vehicle was running or stopped, whether the engine was warmed up or not, whether the air/fuel ratio was lean or rich, as well as other data recorded at the time of a malfunction.

If it is impossible to duplicate the problem even though a DTC is detected, confirm the freeze frame data.

The ECM records engine conditions as freeze frame data every 0.5 seconds. Using the intelligent tester, five separate sets of freeze frame data, including the data values at the time when the DTC was set, can be checked.



- 3 data set before the DTC was set.
- 1 data set when the DTC was set.
- 1 data set after the DTC was set.

2. LIST OF FREEZE FRAME DATA

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
FREEZE DTC	Freeze DTC	-
INJECTOR	Injector	-
IGN ADVANCE	Ignition advance	-

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
CALC LOAD	Calculate load	Calculated load by ECM
VEHICLE LOAD	Vehicle load	-
MAF	Mass air flow volume	<p>If value is approximately 0.0 g/s:</p> <ul style="list-style-type: none"> • Mass air flow meter power source circuit open or shorted • VG circuit open or shorted <p>If value is 160.0 g/s or more:</p> <ul style="list-style-type: none"> • E2G circuit open
ENGINE SPD	Engine speed	-
VEHICLE SPD	Vehicle speed	Speed indicated on speedometer
COOLANT TEMP	Engine coolant temperature	<p>If value is -40°C (-40°F), sensor circuit open</p> <p>If value is 140°C (284°F), sensor circuit shorted</p>
INTAKE AIR	Intake air temperature	<p>If value is -40°C (-40°F), sensor circuit open</p> <p>If value is 140°C (284°F), sensor circuit shorted</p>
AIR-FUEL PATIO	Air-fuel ratio	-
EVAP PURGE FLOW	EVAP gauge flow	-
PURGE DENSITY	Learning value of purge density	-
EVAP PURGE VSV	EVAP purge VSV duty ratio	-
KNOCK CRRT VAL	Correction learning value of knocking	-
KNOCK FB VAL	Feedback value of knocking	-
ACCEL POS #1	Absolute Accelerator Pedal Position (APP) No. 1	-
ACCEL POS #2	Absolute APP No. 2	-
THROTTLE POS	Throttle position	Read value with ignition switch on (IG) (Do not start engine)
THROTTLE POS	Throttle sensor positioning	Read value with ignition switch on (IG) (Do not start engine)

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
THROTTLE POS #2	Throttle sensor positioning #2	-
THROTTLE MOT	Throttle motor	-
O2S B1 S2	Heated oxygen sensor output	Performing INJ VOL or A/F CONTROL function of ACTIVE TEST enables technician to check output voltage of sensor
O2S B2 S2	Heated oxygen sensor output	Performing INJ VOL or A/F CONTROL function of ACTIVE TEST enables technician to check output voltage of sensor
AFS B1 S1	A/F sensor output	Performing INJ VOL or A/F CONTROL function of ACTIVE TEST enables technician to check output voltage of sensor
AFS B2 S1	A/F sensor output	Performing INJ VOL or A/F CONTROL function of ACTIVE TEST enables technician to check output voltage of sensor
TOTAL FT #1	Total fuel trim	-
TOTAL FT #2	Total fuel trim	-
SHORT FT #1	Short-term fuel trim	Short-term fuel compensation used to maintain air-fuel ratio at stoichiometric air-fuel ratio
LONG FT #1	Long-term fuel trim	Overall fuel compensation carried out in long-term to compensate for a continual deviation of short-term fuel trim from central valve
SHORT FT #2	Short-term fuel trim	Short-term fuel compensation used to maintain air-fuel ratio at stoichiometric air-fuel ratio
LONG FT #2	Long-term fuel trim	Overall fuel compensation carried out in long-term to compensate for a continual deviation of short-term fuel trim from central valve
FUEL SYS #1	Fuel system status (Bank 1)	<ul style="list-style-type: none"> • OL (Open Loop): Has not yet satisfied conditions to go closed loop • CL (Closed Loop): Using heated oxygen sensor as feedback for fuel control • OL DRIVE: Open loop due to driving conditions (fuel enrichment) • OL FAULT: Open loop due to detected

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
		<p>system fault</p> <ul style="list-style-type: none"> • CL FAULT: Closed loop but heated oxygen sensor, which used for fuel control malfunctioning
FUEL SYS #2	Fuel system status (Bank 2)	<ul style="list-style-type: none"> • OL (Open Loop): Has not yet satisfied conditions to go closed loop • CL (Closed Loop): Using heated oxygen sensor as feedback for fuel control • OL DRIVE: Open loop due to driving conditions (fuel enrichment) • OL FAULT: Open loop due to detected system fault • CL FAULT: Closed loop but heated oxygen sensor, which used for fuel control malfunctioning
O2FT B1 S2	Fuel trim at heated oxygen sensor	Same as SHORT FT #1
O2FT B2 S2	Fuel trim at heated oxygen sensor	Same as SHORT FT #1
AF FT B1 S1	Fuel trim at A/F sensor	-
AFS B1 S1	A/F sensor output current	-
AF FT B2 S1	Fuel trim at A/F sensor	-
CAT TEMP B1 S1	Catalyst temperature	-
CAT TEMP B2 S1	Catalyst temperature	-
CAT TEMP B1 S2	Catalyst temperature	-
CAT TEMP B2 S2	Catalyst temperature	-
SO2S B1 S2	Heated oxygen sensor impedance (sensor 2)	-
SO2S B2 S2	Heated oxygen sensor impedance (sensor 2)	-

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
INI COOL TEMP	Initial engine coolant temperature	-
INI INTAKE TEMP	Initial intake air temperature	-
INJ VOL	Injection volume	-
ACC RELAY	ACC relay	-
STARTER RELAY	Starter relay	-
STARTER SIG	Starter signal	-
STARTER CONTROL	Starter control	-
A/C SIGNAL	A/C signal	-
PNP SW (NSW)	Neutral position switch signal	-
ELECT LOAD SIG	Electrical load signal	-
STOP LIGHT SW	Stop light switch	-
BATTERY VOLTAGE	Battery voltage	-
ATM PRESSURE	Atmospheric pressure	-
VVT CTRL B2	VVT control status (bank 2)	-
EVAP (Purge) VSV	EVAP Purge VSV	-
FUEL PUMP/SPD	Fuel pump/speed status	-
VVT CTRL B1	VVT control status (bank 1)	-
VACUUM PUMP	Key-off EVAP system pump status	-
EVAP VENT VAL	Key-off EVAP system vent valve status	-
FAN MOTOR	Electric fan motor	-
TC/TE1	TC and TE1 terminals of DLC3	-
AICV VSV	VSV for Air Intake Control System (ACIS)	-

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
ENG SPEED #1	Engine speed of Cylinder #1 of Injector Stopped	-
ENG SPEED #2	Engine speed of Cylinder #2 of injection Stopped	-
ENG SPEED #3	Engine speed of Cylinder #3 of injection Stopped	-
ENG SPEED #4	Engine speed of Cylinder #4 of injection Stopped	-
ENG SPEED #5	Engine speed of Cylinder #5 of injection Stopped	-
ENG SPEED #6	Engine speed of Cylinder #6 of injection Stopped	-
ENG SPEED ALL	Avg Eng Spd, All Cylinder of Injection Stopped	-
VVTL AIM ANGL#1	VVT aim angle (bank 1)	-
VVT CHNG ANGL#1	VVT change angle (bank 1)	-
VVT OCV D B1	VVT OCV operation duty (bank 1)	-
VVT EX HOLD B1	VVT exhaust hold duty ratio learning value (bank 1)	-
VVT EX CHG ANG1	VVT exhaust change angle (bank 1)	-
VVT EX OCV D B1	VVT exhaust OCV duty (bank 1)	-
VVTL AIM ANGL#2	VVT aim angle (bank 2)	-
VVT CHNG ANGL#2	VVT change angle (bank 2)	-
VVT OCV DUTY B2	VVT OCV operation duty (bank 2)	-
VVT EX HOLD B2	VVT exhaust hold duty ratio learning value (bank 2)	-

LABEL (INTELLIGENT TESTER DISPLAY)	MEASUREMENT ITEM/RANGE	DIAGNOSTIC NOTE
VVT EX CHG ANG2	VVT exhaust change angle (bank 2)	-
VVT EX OCV D B2	VVT exhaust OCV duty (bank 2)	-
FC IDL	Idle fuel cut	ON: when throttle valve fully closed and engine speed over 1,500 rpm
FC TAU	FC TAU	Fuel cut being performed under very light load to prevent incomplete engine combustion
CYL #1	Cylinder #1 misfire rate	Displayed only during idling
CYL #2	Cylinder #2 misfire rate	Displayed only during idling
CYL #3	Cylinder #3 misfire rate	Displayed only during idling
CYL #4	Cylinder #4 misfire rate	Displayed only during idling
CYL #5	Cylinder #5 misfire rate	Displayed only during idling
CYL #6	Cylinder #6 misfire rate	Displayed only during idling
IGNITION	Ignition	-
CYL ALL	All cylinder misfire rate	Displayed only during idling
MISFIRE RPM	Misfire RPM	-
MISFIRE RPM	Misfire RPM	-
MISFIRE LOAD	Misfired load	-
MISFIRE MARGIN	Misfire monitoring	-
MIL	MIL status	-
ENG RUN TIME	Accumulated engine running time	-
TIME DTC CLEAR	Cumulative time after DTC cleared	-
DIST DTC CLEAR	Accumulated distance after DTC cleared	-
WU CYC DTC CLEAR	Warm-up cycle after DTC cleared	-

