Plug	Pin	Code	Definition	I/O	Description
B1	1	#30	No. 3 Injector	Output	This pin is used to control the No.3 fuel injector.
B1	2	#40	Cyl 4 Injector Driver	Output	This pin is used to control the No.4 fuel injector.
B1	3	#50	Cyl 5 Injector Driver	Output	This pin is used to control the No.5 fuel injector.
B1	4	#60	Cyl 6 Injector Driver	Output	This pin is used to control the No.6 fuel injector.
B1	5	VSV1	Intake Air Bypass Valve Vacuum Switching Valve	Output	This pin is used to control the VSV which is used to open / close the Intake Air Bypass Valve that is a component of the sequential turbo system.
B1	6	MOL	Main Oil Level Switch	Input	This pin is used to detect low engine oil level.
B1	7	M-	ETCS-i Motor	Output	This pin is used to control the electronic throttle control motor.
B1	8	M+	ETCS-i Motor	Output	This pin is used to control the electronic throttle control motor.
B1	9	ME01	ETCS-i Ground	Input	Ground
B1	10	G2	Intake Camshaft Position Sensor	Input	This pin is used to detect the location of the intake camshaft.
B1	11	IGT	Ignition Trigger Cyl 1 & Cyl 6	Output	This pin is used to control the ignition for cylinders 1 & 6.
B1	12	IGT2	Ignition Trigger Cyl 5 & Cyl 2	Output	This pin is used to control the ignition for cylinders 5 & 2.

B1	13	IGT3	Ignition Trigger Cyl 3 & Cyl 4	Output	This pin is used to control the ignition for cylinders 3 & 4.
B1	14	/	/	/	/
B1	15	PMC	Pressure Modulation Control (Wastegate) Vacuum Switching Valve	Output	This pin is used to control the VSV which controls the turbo wastegate on the front turbo. This VSV allows the engine ECU to attempt to control boost pressure.
B1	16	/	/	/	/
B1	17	OCV-	VVTi Solenoid	Output	This pin is used to control the solenoid that controls position of the intake camshaft.
B1	18	OCV+	VVTi Solenoid	Output	This pin is used to control the solenoid that controls position of the intake camshaft.
B1	19	CL-	ETCS-i Clutch	Output	This pin is used to control the electronic throttle control clutch.
B1	20	CL+	ETCS-i Clutch	Output	This pin is used to control the electronic throttle control clutch.
B1	21	EO1	ECU Ground	Input	Ground
B1	22	NE-	Crankshaft & Intake Camshaft Position Sensor Ground	Input	This pin is used to provide a Ground to detect the speed and location of the engine crankshaft and intake camshaft.
B1	23	NE+	Crankshaft Position Sensor	Input	This pin is used to detect the speed and location of the engine crankshaft.
B1	24	/	/	/	/
B1	25	IGF	Igniter Verification Signal	Input	This is pin is used to detect if ignition has taken place successfully.
B1	26	RL	Alternator Charge Light Output (L)	Input	This pin is used to detect the status of the alternator regulators charge light output.
B1	27	KNK2	No.2 Knock Sensor (Rear)	Input	This pin is used to measure engine knock.

B1	28	KNK1	No.1 Knock Sensor (Front)	Input	This pin is used to measure engine knock.
B1	29	LCKI	Airconditioning Compressor Lock Sensor	Input	This pin is used to detect the speed of the airconditioning compressor.
B1	30	GEO1	ETCS-i Motor Shielding	Output	This pin is used to shield the wires used to control the electronic throttle control electric motor.
B1	31	EO2	ECU Ground	Input	Ground
Plug	**Pin**	**Symbol**	**Definition**	**Input / Output**	**What**
B2	1	/	/	/	/
B2	2	VC	Sensor Power	Output	This pin is used to supply +5V power to the throttle position and MAP sensors.
B2	3	VSV2	Exhaust Gas Control Valve Vacuum Switching Valve	Output	This pin is used to control the VSV which is used to open / close the Exhaust Gas Control Valve that is a component of the sequential turbo system.
B2	4	HT	Oxygen Sensor Heater	Output	This pin is used to control the heater for the exhaust gas oxygen sensor.
B2	5	#10	Cyl 1 Injector Driver	Output	This pin is used to control the No.1 fuel injector.
B2	6	#20	Cyl 2 Injector Driver	Output	This pin is used to control the No.2 fuel injector.
B2	7	PRG	Evaporative Emission Control Vacuum Switching Valve	Output	This pin is used to control the VSV which is used to allow fuel vapour from the charcoal canister to enter the intake manifold and enter the engine.
B2	8	MOPS	Main Oil Pressure Switch	Input	This pin is used to sense low engine oil pressure.
B2	9	PIM	Pressure Intake Manifold (MAP Sensor)	Input	This pin is used to determine the manifold air pressure (MAP).
B2	10	VG	Engine Airflow	Input	This pin is used to determine the engine airflow.
B2	11	/	/	/	/

B2	12	OX	Oxygen Sensor	Input	This pin is used to determine the exhaust gas air fuel ratio.
B2	13	N	Automatic Transmission Neutral Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the Neutral position. This signal is also sent via the Multiplex network to the dash for display.
B2	14	THW	Water Temperature Sensor	Input	This pin is used to measure the temperature of the engine coolant exiting the engine.
B2	15	VPA	Throttle Position Sensor (Demand Position Sensor)	Input	This pin is used to effectively detect the position of the accelerator pedal which reflects the operators desired throttle position.
B2	16	VPA2	Throttle Position Sensor (Demand Position Sensor)	Input	This pin is used to effectively detect the position of the accelerator pedal which reflects the operators desired throttle position.
B2	17	E1	ECU Ground	Input	Ground.
B2	18	E2	Sensor Ground	Output	Sensor ground.
B2	19	EVG	Airflow Meter Ground	Input	Airflow meter signal ground.
B2	20	2	Automatic Transmission 2nd Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the 2nd position. This signal is also sent via the Multiplex network to the dash for display.
B2	21	L	Automatic Transmission 1st Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the L position. This signal is also sent via the Multiplex network to the dash for display.
B2	22	THA	Air Temperature Sensor	Input	This pin is used to measure the temperature of the engine inlet manifold air.
B2	23	VTA	Throttle Position Sensor (Actual Throttle Position Sensor)	Input	This pin is used to detect the actual position of the throttle.
B2	24	VTA2	Throttle Position Sensor (Actual Throttle Position Sensor)	Input	This pin is used to detect the actual position of the throttle.

Plug	Pin	Symbol	Definition	Input / Output	What
B3	1	S1	Automatic Transmission No.1 Shift Solenoid	Output	This pin is used to control the automatic transmission No.1 shift solenoid.
B3	2	S2	Automatic Transmission No.2 Shift Solenoid	Output	This pin is used to control the automatic transmission No.2 shift solenoid.
B3	3	SD	Automatic Transmission Shift Solenoid	Output	?
B3	4	NCO+	Automatic Transmission Over Drive Direct Clutch Speed Sensor	Input	This pin is used to detect the speed of the automatic transmission O/D input shaft.
B3	5	SP2+	Speed Sensor	Input	This pin is used to determine vehicle speed.
B3	6	S4	Automatic Transmission Shift Solenoid	Output	?
B3	7	SLU+	Automatic Transmission Lock Up Solenoid	Output	This pin is used to control the automatic transmission lock up torque converter control solenoid which is used to enable torque converter lock up.
B3	8	SLN+	Automatic Transmission Accumulator Back Pressure Solenoid	Output	This pin is used to control the automatic transmission accumulator back pressure control solenoid.
B3	9	SLT+	Automatic Transmission Line Pressure Control Solenoid	Output	This pin is used to control the automatic transmission line pressure control solenoid.
B3	10	NCO-	Automatic Transmission Over Drive Direct Clutch Speed Sensor	Input	This pin is used to detect the speed of the automatic transmission O/D input shaft.
B3	11	SP2-	Speed Sensor	Input	This pin is used to determine vehicle speed.
B3	12	VSV3	Exhaust Bypass Valve Vacuum Switching Valve	Output	This pin is used to control the VSV which is used to open / close the Exhaust Bypass Valve that is a component of the sequential turbo system.
B3	13	SLU-	Automatic Transmission Lock Up Solenoid	Output	This pin is used to control the automatic transmission lock up torque converter control solenoid which is used to enable torque converter lock up.
B3	14	SLN-	Automatic Transmission Accumulator Back Pressure Solenoid	Output	This pin is used to control the automatic transmission accumulator back pressure control solenoid.
B3	15	SLT-	Automatic Transmission Line Pressure Control Solenoid	Output	This pin is used to control the automatic transmission line pressure control solenoid.
B3	16	FPU	Fuel Pressure Up Vacuum Switching Valve	Output	This pin is used to control the VSV which is used to increase fuel pressure during hot soak starting.

B3	17	OIL	Automatic Transmission Oil Temperature Sensor	Input	This pin is used to measure the automatic transmission oil temperature.
Plug	**Pin**	**Symbol**	**Definition**	**Input / Output**	**What**
F59	1	/	/	/	/
F59	2	STA	Starter Signal	Input	This pin is used to determine if the engine is being cranked.
F59	3	FCUT	Fuel Cut	Output?	This pin is used to monitor the FPC fuel pump control signal?
F59	4	SFTU	Automatic Transmission Shift Up	Input	This pin is used to detect the drivers request to shift the automatic transmission up a gear from the steering wheel controls.
F59	5	TC	Test Connector	Input	This pin is used to select the test mode during which diagnostic codes are flashed on the check engine light.
F59	6	STP	Stop Light Switch	Input	This pin is used to detect when the brake pedal is depressed.
F59	7	3	Automatic Transmission 3rd Gear Position Indicator	Input	?
F59	8	/	/	/	/
F59	9	/	/	/	/
F59	10	TAM	Ambient Air Temperature Sensor	Input	This pin is used to measure the temperature of the ambient air.
F59	11	ST1-	Brake Signal Switch	Input	This pin is used to detect when the brake pedal is depressed.
F59	12	PRE2	Airconditioning Pressure Switch 2	Input	This pin is used to detect when the airconditioning system pressure is too high?/too low?/other?
F59	13	ACMG	Airconditioning Magnetic Clutch Relay Trigger	Output	This pin is used to turn the airconditioning magnetic clutch relay ON.
F59	14	SFTD	Automatic Transmission Shift Down	Input	This pin is used to detect the drivers request to shift the automatic transmission down a gear from the steering wheel controls.
F59	15	/	/	/	/
F59	16	R	Automatic Transmission Reverse Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the reverse position. This signal is also sent via the Multiplex network to the dash for display.
F59	17	D	Automatic Transmission Drive Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the drive position. This signal is also sent via the Multiplex network to the dash for display.

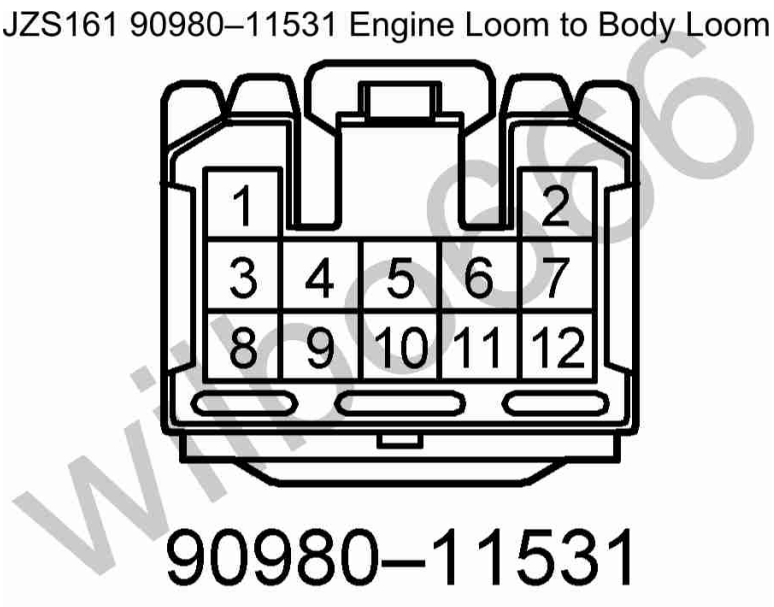
F59	18	TH+	Engine Coolant Temperature Sensor	Input	This pin is used to measure the temperature of the engine coolant in the lower tank of the radiator.
F59	19	/	/	/	/
F59	20	TACH	Tachometer	Output	This pin is used to output a PWM signal that correlates to engine RPM.
F59	21	PRE	Airconditioning Pressure Switch	Input	This pin is used to detect when the airconditioning system pressure is too high or too low.
F59	22	TH-	Engine Coolant Temperature Sensor	Input	This pin is used to measure the temperature of the engine coolant in the lower tank of the radiator.
F59	23	CCS	Cruise Control Switch	Input	This pin is used to detect the pressing of the cruise control switches (SET, RES, ON-OFF, CANCEL)
F59	24	/	/	/	/
F59	25	REC	Hydraulic Fan Control	Output	This pin is used to control the speed of the hydraulic engine cooling fan.
F59	26	P	Automatic Transmission Park Gear Position Indicator	Input	This pin is used to determine if the automatic transmission shifter is in the park position. This signal is also sent via the Multiplex network to the dash for display.
F59	27	MPX2	Multiplex Communications to Airconditioning ECU	Output	This pin is used to transmit data between different vehicle modules.
F59	28	MPX1	Multiplex Communications to Multiplex Network Body Computer No.1	Input	This pin is used to transmit data between different vehicle modules.
Plug	**Pin**	**Symbol**	**Definition**	**Input / Output**	**What**
F60	1	BATT	Battery Power	Input	This pin is used to supply constant battery power to the ECU.
F60	2	/	/	/	/
F60	3	/	/	/	/
F60	4	DI	Diagnostic Indication (Fuel Pump Control)	Input	This pin is used to determine if the Fuel Pump ECU is healthy.
F60	5	FPC	Fuel Pump Control	Output	This pin is used to signal the desired fuel pump speed to the Fuel Pump ECU.
F60	6	W	Engine Warning Light (Check Engine Light)	Output	This pin is used to turn ON / OFF the check engine light.

F60	7	+BM	ETCS-i Power	Input	This pin is used to supply constant battery power to the ECU for the electronic throttle control system.
F60	8	+B2	EFI Main Relay Switched Power	Input	This pin is used to supply switched battery power to the ECU.
F60	9	IGSW	Ignition Switch	Input	This pin is used to determine if the ignition is ON.
F60	10	M-REL	EFI Main Relay Trigger	Output	This pin is used to turn ON the Main EFI Relay which feeds power to the fuel pump, engine ECU, engine VSVs and O2 sensor heater circuits, etc.
F60	11	SIL	OBDII	Output	This pin is used to provide OBDII diagnostic information.
F60	12	/	/	/	/
F60	13	TRC+	ABS & TRC & VSC ECU Serial Data	Input	It is believed that this pin is used to communicate data via serial from the ABS, TRC and VSC ECU to the engine ECU.
F60	14	ENG+	ABS & TRC & VSC ECU Serial Data	Output	It is believed that this pin is used to communicate data via serial from the engine ECU to the ABS, TRC and VSC ECU.
F60	15	NEO	Slave Engine Speed Sensor	Output	This pin is used to supply a copy of the engine speed (NE) signal to the ABS, TRC and VSC ECU.
F60	16	+B	Switched Battery Power	Input	This pin is used to supply switched battery power to the ECU.
F60	17	/	/	/	/
F60	18	REC2	Hydraulic Fan Control	Output	This pin is used to control the speed of the hydraulic engine cooling fan.
F60	19	/	/	/	/
F60	20	TRC-	ABS & TRC & VSC ECU Serial Data	Output	It is believed that this pin is used to communicate data via serial from the ABS, TRC and VSC ECU to the engine ECU.
F60	21	ENG-	ABS & TRC & VSC ECU Serial Data	Input	It is believed that this pin is used to communicate data via serial from the engine ECU to the ABS, TRC and VSC ECU.
F60	22	EC	PRE and PRE2 Switches Ground	Input	Ground.
Plug	**Pin**	**Symbol**	**Definition**	**Input / Output**	**What**
F84	1	/	/	/	/
F84	2	/	/	/	/

F84	3	/	/	/	/
F84	4	/	/	/	/
F84	5	/	/	/	/
F84	6	/	/	/	/
F84	7	/	/	/	/
F84	8	/	/	/	/
F84	9	EOM	GND	Input	Ground.
F84	10	KSW	Key Inserted	Input	This pin is used to detect if the vehicle key has been inserted into the ignition barrel.
F84	11	/	/	/	/
F84	12	/	/	/	/
F84	13	/	/	/	/
F84	14	/	/	/	/
F84	15	/	/	/	/
F84	16	/	/	/	/
F84	17	/	/	/	/
F84	18	/	/	/	/
F84	19	/	/	/	/
F84	20	IMLD	Immobilizer LED	Output	This pin is used to illuminate the immobilizer LED.
F84	21	TXCT	Key Amplifier	Output	This pin connects to the key amplifier. The exact function is unknown.
F84	22	RXCK	Key Amplifier	Input	This pin connects to the key amplifier. The exact function is unknown.
F84	23	CODE	Key Amplifier	Input	This pin connects to the key amplifier. The exact function is unknown.
F84	24	/	/	/	/
F84	25	/	/	/	/
F84	26	/	/	/	/

JZS161 Toyota Aristo 2JZ-GTE VVTi 90980-11531 Engine Loom to Body Loom Plug (White)

This plug is located at the front, passenger side of the engine bay and mates with male connector 90980-11530.

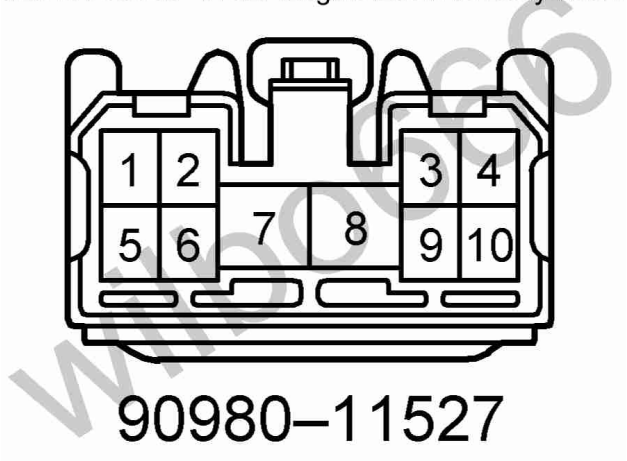


Plug	Pin	Symbol	Definition	I/O	Description
BF1	1	/	/	/	/
BF1	2	Engine ECU: E2	Ambient Temperature Sensor Ground	Output	The body loom side of this pin connects to the ambient temperature sensor thermistor mounted at the far front of the car. The engine loom side of this pin connects to the engine ECU pin E2 to provide a ground for the ambient temperature sensor.
BF1	3	Engine Mounted Diagnostic Connector: AB	SRS Airbag Power	Input	The body loom side of this pin connects to the SRS airbag control ECU AB pin. The engine loom side of this pin connects to the diagnostic connector mounted on the side of the engine. Note: Pre 2000-07 models only, later models do not have this pin wired.
BF1	4	/	/	/	/
BF1	5	Engine Mounted Diagnostic Connector: TS 4WS ECU: TS	Test Enable	Input	The body loom side of this pin connects to a number of control module TS input pins. The engine loom side of this pin connects to the diagnostic connector mounted on the side of the engine.
BF1	6	Engine ECU: R	Reverse Gear Automatic Transmission Position Switch Indicator	Output	The body loom side of this pin needs to be connected to the engine ECU R input pin and the reverse lights. The engine loom side of this pin connects to automatic transmission shifter position switch mounted on the automatic transmission and outputs battery voltage when the automatic transmission shifter is in the R position.
BF1	7		Alternator Battery Voltage Sense	Input	The body loom side of this pin needs to be connected to the battery via a 5A fuse. The engine loom side of this pin connects to the alternator S pin.
BF1	8	Proportional Power Steering ECU: SOL+	Proportional Power Steering Solenoid	Input	The body loom side of this pin connects to the proportional power steering ECU SOL+ pin. The engine loom side of this pin connects to the proportional power steering solenoid located on the power steering pump.
BF1	9	Proportional Power Steering ECU: SOL-	Proportional Power Steering Solenoid	Input	The body loom side of this pin connects to the proportional power steering ECU SOL- pin. The engine loom side of this pin connects to the proportional power steering solenoid located on the power steering pump.
BF1	10	Engine Mounted Diagnostic Connector: WA ABS & VSC ECU: WA	ABS	Input	The body loom side of this pin connects to the ABS control ECU WA pin and also the ABS light mounted in the dash. The engine loom side of this pin connects to the diagnostic connector mounted on the side of the engine. Note that there is a shorting link inserted between terminals WA and WB of the diagnostic connector.
BF1	11	Engine Mounted Diagnostic Connector: WB ABS & VSC ECU: WB	ABS	Output	The body loom side of this pin connects to the ABS relay. The engine loom side of this pin connects to the diagnostic connector mounted on the side of the engine. Note that there is a shorting link inserted between terminals WA and WB of the diagnostic connector from factory.
BF1	12	Engine Mounted Diagnostic Connector: TC Engine ECU: TC ABS & VSC ECU: TC 4WS ECU: TC	Test Connector	Input	The body loom side of this pin connects to the TC pin on a number of control modules. The engine loom side of this pin connects to the diagnostic connector mounted on the side of the engine. Note: Pre 2000-07 models only, later models do not have this pin wired.

JZS161 Toyota Aristo 2JZ-GTE VVTi 90980-11527 Engine Loom to Body Loom Plug (White)

This plug is located at the front, passenger side of the engine bay and mates with male connector 90980-11596.

JZS161 90980–11527 Engine Loom to Body Loom



Plug	Pin	Symbol	Definition	I/O	Description
BF2	1	Engine ECU: ACMG	Air Conditioning Magnetic Clutch Relay Trigger Signal	Output	The body loom side of this pin needs to be connected to the AC magnetic clutch relay coil negative. The engine loom side of this pin connects to the engine ECU ACMG pin.
BF2	2	Engine ECU: P	Park Gear Automatic Transmission Position Switch Indicator	Output	The body loom side of this pin needs to be connected to the engine ECU P input pin. The engine loom side of this pin connects to automatic transmission shifter position switch mounted on the automatic transmission and outputs battery voltage when the automatic transmission shifter is in the P position.
BF2	3	/	/	/	/
BF2	4	/	/	/	/
BF2	5	/	/	/	/
BF2	6		Power to Coils and Igniter	Input	The body loom side of this pin needs to be connected to battery voltage via the ignition switch when the ignition is in the RUN and CRANK positions to switch battery voltage to the coils and igniter. The engine loom side of this pin connects to the coil and igniter power supply pins.
BF2	7		Power to Fuel Injectors	Input	The body loom side of this pin needs to be connected to battery voltage via the ignition switch when the ignition is in the RUN and CRANK positions to switch battery voltage to the fuel injectors. The engine loom side of this pin connects to the fuel injector power supply pins.
BF2	8		Starter Motor Relay Switched Power	Input	The body loom side of this pin needs to be connected to the starter motor relay switched power output which switches battery voltage to the starter motor to turn it on. The engine loom side of this pin connects to the starter motor. The starter motor is grounded via the engine block. Refer to pins BF3-4 and BF3-5 for further information regarding the starter / starter relay circuit.
BF2	9	Engine ECU: +B, +B2	Main EFI Relay Switched Power	Input	The body loom side of this pin needs to be connected to main EFI relay switched power output which switches battery voltage to the engine ECU, VSVs, etc. The main EFI relay is switched via the engine ECU M-REL output pin. The engine loom side of this pin connects to the engine ECU, VSVs, etc power supply pins.
BF2	10	/	/	/	/

JZS161 Toyota Aristo 2JZ-GTE VVTi 90980-11710 Engine Loom to Body Loom Plug (White)

This plug is located at the front, passenger side of the engine bay and mates with male connector 90980-11709.

JZS161 90980–11710 Engine Loom to Body Loom

Plug	Pin	Symbol	Definition	I/O	Description
BF3	1	/	/	/	/
BF3	2	Engine ECU: TACH Engine Mounted Diagnostic Connector: IG-	Tachometer Output from Igniter	Output	The body loom side of this pin needs to be connected to the dash tachometer and other vehicle systems. The engine loom side of this pin connects to the engine ECU TACH pin which outputs a 0V to battery voltage signal that is related to engine RPM. The body loom side of this pin needs to be connected to the engine ECU D input pin.
BF3	3	Engine ECU: D	Drive Gear Automatic Transmission Position Switch Indicator	Output	The engine loom side of this pin connects to automatic transmission shifter position switch mounted on the automatic transmission and outputs battery voltage when the automatic transmission shifter is in the D position. The body loom side of this pin needs to be connected to the starter motor relay coil to turn it on when the ignition switch is in CRANK position and the automatic transmission park / neutral switch is closed - that is the automatic transmission selector is in the park / neutral position.
BF3	4	Engine ECU: STA	Starter Motor Relay Trigger Signal	Output	The engine loom side of this pin is connected to the automatic transmission park / neutral position switch and also the engine ECU STA pin. Refer to pin BF3-5 for further information.
BF3	5		Starter Signal	Input	The body loom side of this pin needs to be connected to battery voltage when the ignition switch is in CRANK position. The engine loom side of this pin connects to one side of the automatic transmission park / neutral switch to provide power to the automatic transmission shifter position switch. Refer to pin BF3-4 for further information.
BF3	6	/	/	/	/
BF3	7	Engine ECU: E1	Ground	Output	The body loom side of this pin connects to the ground for the cruise control switch assembly. The engine loom side of this pin connects to the engine ECU E1 pin which is Grounded at the intake manifold.
BF3	8	/	/	/	/
BF3	9		Ignition Switched Power	Input	The body loom side of this pin needs to be connected to ignition switched power source that supplies battery voltage when the ignition is in the RUN and CRANK Positions. The engine loom side of this pin connects switched battery voltage to the alternator, automatic transmission position switch and the reverse lights.