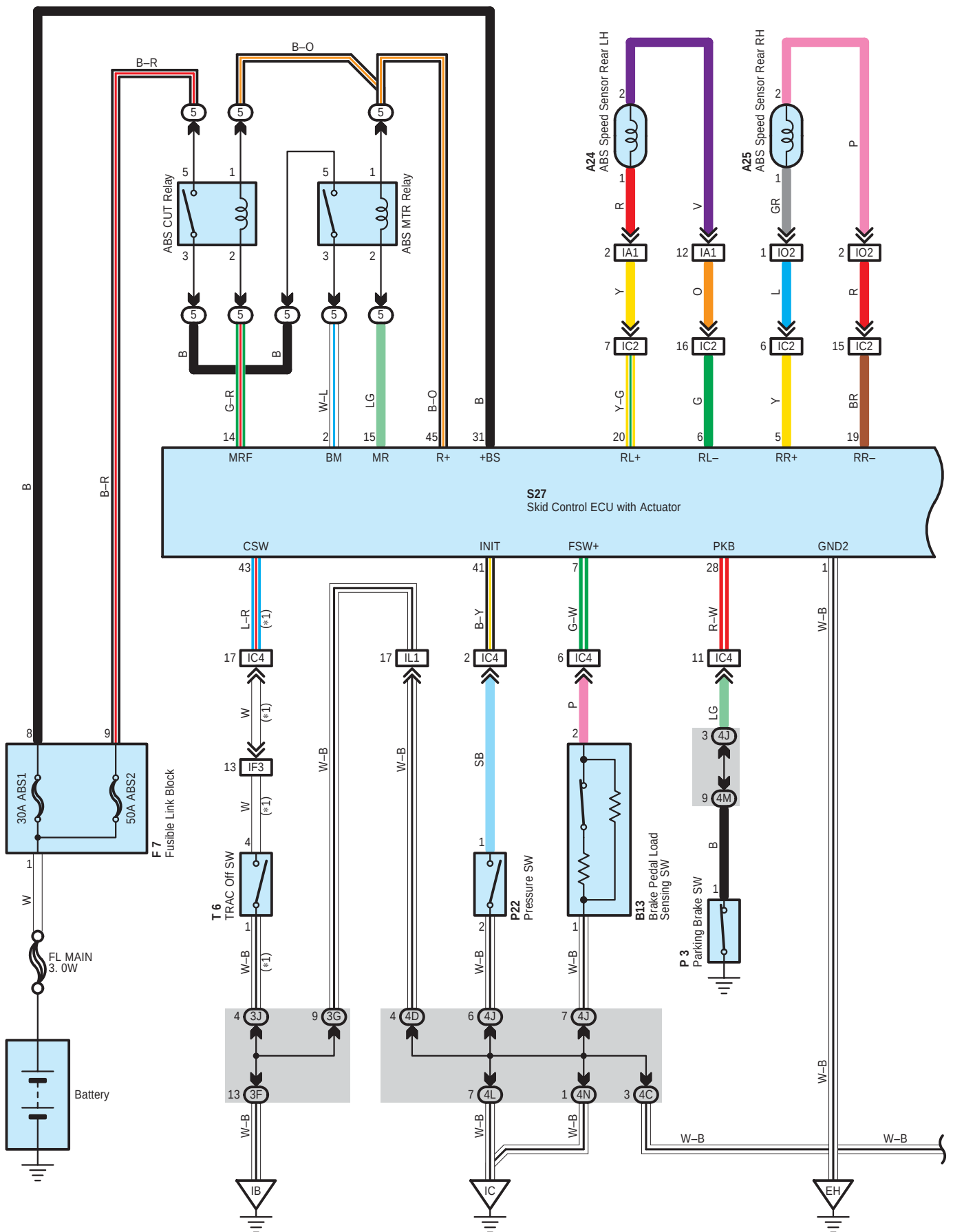
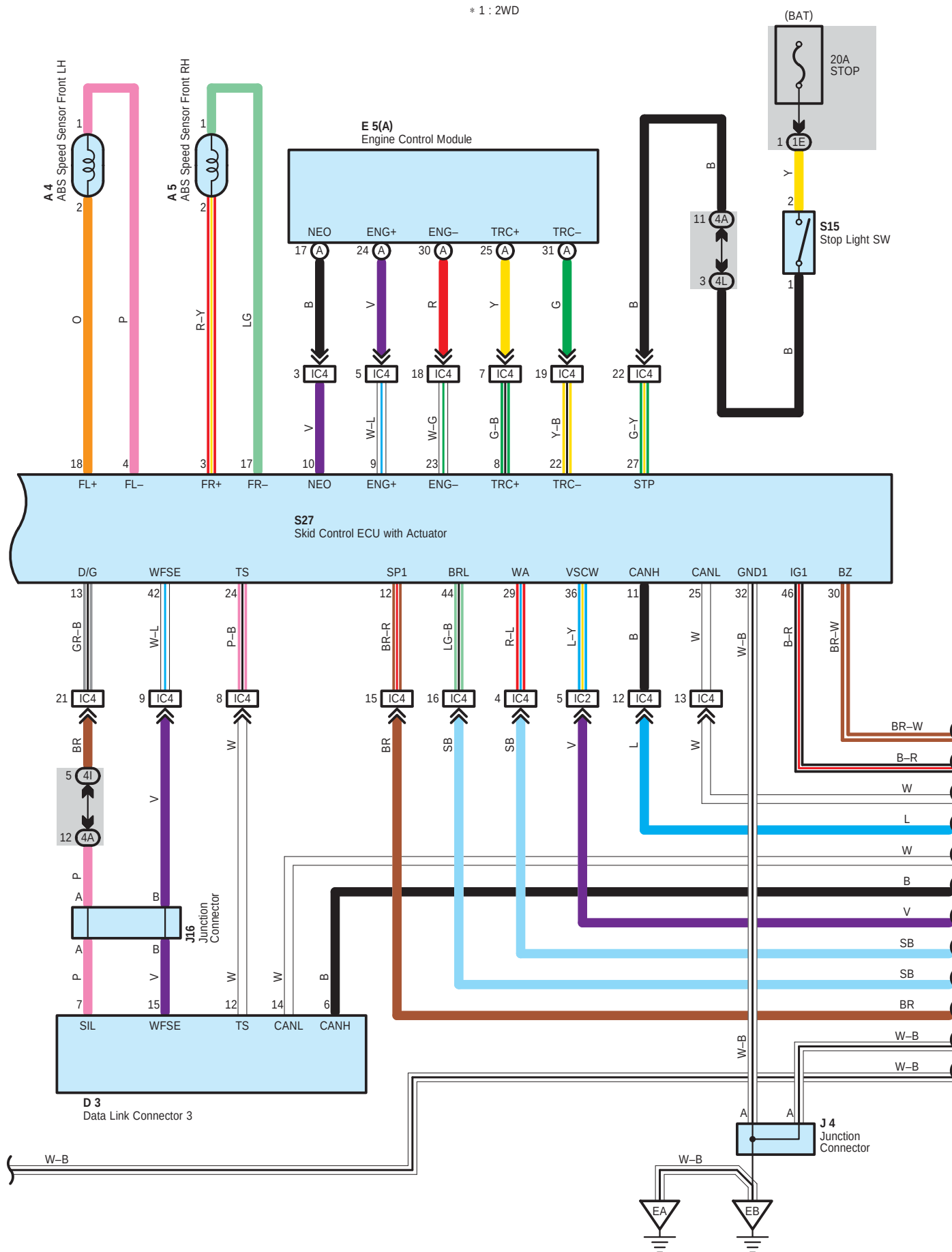
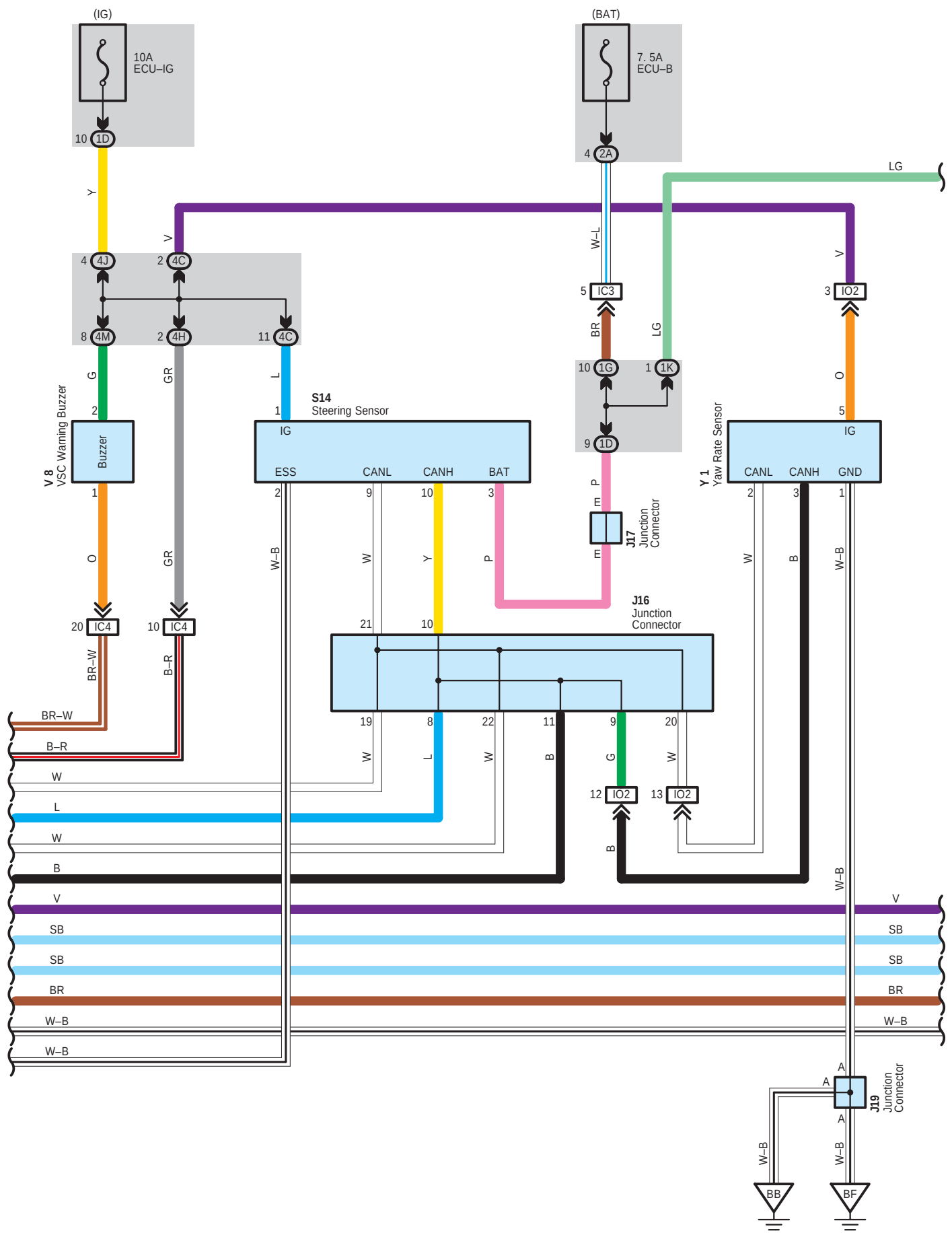


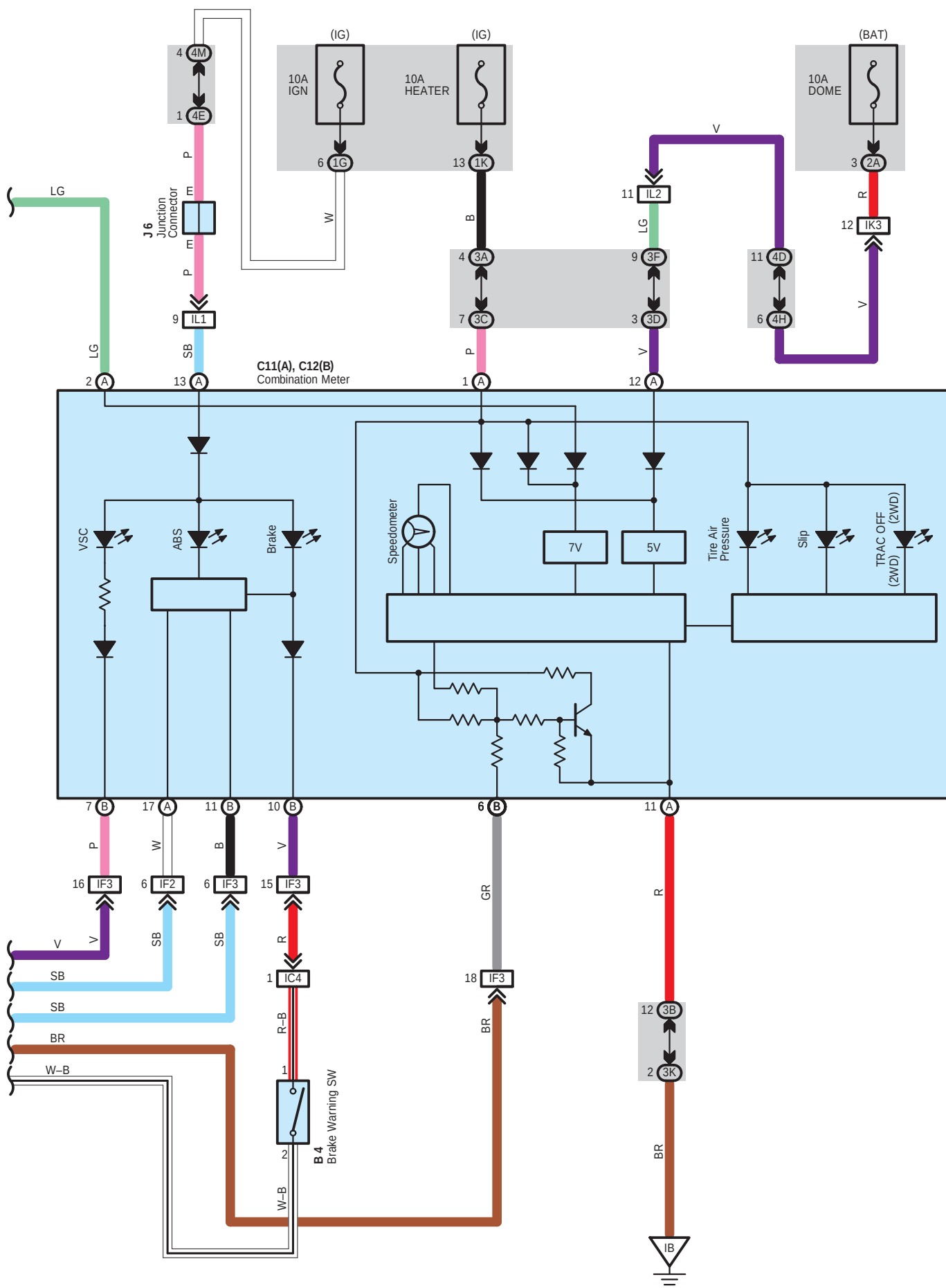
ABS, TRAC, VSC and Tire Pressure Warning System



* 1 : 2WD







ABS, TRAC, VSC and Tire Pressure Warning System

System Outline

1. ABS Operation

If the brake pedal is depressed suddenly, the ABS controls the hydraulic pressure of the wheel cylinders for all the four wheels to automatically avoid wheel locking and ensure the directional and steering stability of the vehicle. If the brake pedal is depressed suddenly, the skid control ECU with actuator controls the solenoids in the actuators using the signals from the sensors to move the brake fluid to the reservoir in order to release the braking pressure applied to the wheel cylinder. If the skid control ECU with actuator detects that the fluid pressure in the wheel cylinder is insufficient, the ECU controls the solenoids in the actuators to increase the braking pressure.

2. Traction Control Operation

The traction control system controls the engine torque, the hydraulic pressure of the driving wheel cylinders, slipping of the wheels which may occur at start or acceleration of the vehicle, to ensure an optimal driving power and vehicle stability corresponding to the road conditions.

3. VSC Operation

Unexpected road conditions, vehicle speed, emergency situation, and any other external factors may cause large under- or over-steering of the vehicle. If this occurs, the VSC system automatically controls the engine power and wheel brakes to reduce the under- or over-steering.

To reduce large over-steering :

If the VSC system determines that the over-steering is large, it activates the brakes for the outer front turning wheels depending on the degree of the over-steering to produce the moment toward the outside of the vehicle and reduce the over-steering.

To reduce large under-steering :

If the VSC system determines that the under-steering is large, it controls the engine power and activates the rear wheel brakes to reduce the under-steering.

VSC indicator light

If a malfunction occurs in the VSC system, the VSC indicator lights up to warn the driver.

4. Mutual System Control

To efficiently operate the VSC system at its optimal level, the VSC system and other control systems are mutually controlled while the VSC system is being operated.

Engine control

The engine power does not interfere with the VSC brake control by fuel cut controlling and reducing the engine output.

Engine control and electronically controlled transmission control

The strong braking force does not interfere with the braking force control of the VSC system by turning off the accel and reducing changes in the driving torque at shift-down.

VSC system operation indication

The slip indicator light flashes and the buzzer alarm intermittently to warn the driver that the current road is slippery, while the VSC system is being operated.

5. Fail Safe Function

If a malfunction occurs in the skid control ECU with actuator, sensor signals, and/or actuators, the skid control ECU with actuator inhibits the brake actuator control and inputs the malfunction signal to the engine control module. According to the malfunction signal, the brake actuator turns off the solenoid and the engine control module rejects any electronically controlled request from the VSC system. As a result, the vehicle functions without the ABS, BA, TRAC, and VSC systems.

○ : Parts Location

Code		See Page		Code		See Page		Code		See Page	
A4		38 (3MZ–FE)		C12	B	42		J19		44	
		40 (2AZ–FE)		D3		42		P3		43	
A5		38 (3MZ–FE)		E5	A	42		P22		43	
		40 (2AZ–FE)		F7		38 (3MZ–FE)		S14		43	
A24	44		40 (2AZ–FE)			S15		43			
A25		44		J4		39 (3MZ–FE)		S27		39 (3MZ–FE)	
B4		38 (3MZ–FE)				41 (2AZ–FE)				41 (2AZ–FE)	
		40 (2AZ–FE)		J6		43		T6		43	
B13		42		J16		43		V8		43	
C11	A	42		J17		43		Y1		45	

○ : Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
5	23	ABS R/B (Engine Compartment Rear Left)

**: Junction Block and Wire Harness Connector**

Code	See Page	Junction Block and Wire Harness (Connector Location)
1D	29	Cowl Wire and Instrument Panel J/B (Lower Finish Panel)
1E		
1G		
1K	28	Instrument Panel Wire and Instrument Panel J/B (Lower Finish Panel)
2A	27	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
3A	30	Instrument Panel Wire and Center J/B (Behind the Instrument Panel Center)
3B		
3C		
3D		
3F		
3G	31	
3J		
3K		
4A	33	Cowl Wire and Passenger Side J/B (Right Side of Grove Box)
4C		
4D		
4E		
4H		
4I	32	
4J		
4L		
4M		
4N		

**: Connector Joining Wire Harness and Wire Harness**

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IA1	50	Cowl Wire and Floor No.2 Wire (Left Kick Panel)
IC2	50	Engine Room Main Wire and Cowl Wire (Left Cowl Side Panel)
IC3		
IC4		
IF2	50	Instrument Panel Wire and Cowl Wire (Right Side of Instrument Panel J/B)
IF3		
IK3	51	Engine Room Main Wire and Cowl Wire (Right Cowl Side Panel)
IL1	51	Instrument Panel Wire and Cowl Wire (Upper Side of Passenger Side J/B)
IL2		
IO2	51	Cowl Wire and Floor Wire (Right Kick Panel)

**: Ground Points**

Code	See Page	Ground Points Location
EA	48 (3MZ-FE)	Right Front Fender Apron
	49 (2AZ-FE)	
EB	48 (3MZ-FE)	
	49 (2AZ-FE)	
EH	48 (3MZ-FE)	Under the Left Headlight
	49 (2AZ-FE)	
IB	50	Right Instrument Panel Brace
IC	50	Right Cowl Side Panel
BB	52	Right Center Pillar
BF	52	Near the Rear Side Marker Light RH