

POWER WINDOWS

1998 Toyota Supra

1998 ACCESSORIES & EQUIPMENT
Toyota – Power Windows

Avalon, Camry, Celica, Corolla, Supra, Tercel

DESCRIPTION & OPERATION

System components consist of a power main relay, power window switches and power window motors for each door. Avalon and Camry are equipped with an integration relay that supplies power to power main relay. On all models, with ignition switch in ON position, battery voltage is supplied through power main relay to power window switches. Power window switch supplies power and ground for power window motors.

Driver's power window switch offers one-touch operation of driver's window. Driver's power window switch also includes a lock-out feature to prevent passengers from operating any of the other power window switches.

TROUBLE SHOOTING

ALL WINDOWS & POWER DOOR LOCKS INOPERATIVE

Check power and ground circuits to driver's power window switch. See WIRING DIAGRAMS. Check driver's power window switch. See POWER WINDOW SWITCH CONTINUITY TEST (DRIVER'S SWITCH) under COMPONENT TESTS. Check wiring harness.

ALL WINDOWS INOPERATIVE, BUT POWER DOOR LOCKS OPERATE

Check power and ground circuits to driver's power window switch. See WIRING DIAGRAMS. Check driver's power window switch. See POWER WINDOW SWITCH CONTINUITY TEST (DRIVER'S SWITCH) under COMPONENT TESTS. Check wiring harness.

ONE-TOUCH FEATURE IS INOPERATIVE

Check driver's power window switch. See POWER WINDOW SWITCH CONTINUITY TEST (DRIVER'S SWITCH) under COMPONENT TESTS.

ONE WINDOW DOES NOT OPERATE

Check driver's power window switch for appropriate window, power window switch, power window motor and wiring harness for appropriate window.

WINDOW DOES NOT OPERATE WITH KEY OFF

With doors closed, windows should operate for one minute after ignition is turned to OFF position. If windows do not operate, check for defective fuses, ignition switch, door courtesy switch or wiring harness.

NOTE: For door lock control relay testing, see POWER DOOR LOCKS article. For anti-theft/door lock ECU testing, see ANTI-THEFT SYSTEMS article. For ignition switch testing, see STEERING COLUMN SWITCHES article.

COMPONENT TESTS

POWER WINDOW SWITCH CONTINUITY TEST (DRIVER'S SWITCH)

Using an ohmmeter, check continuity between specified terminals with driver's power window switch in specified position. See appropriate DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST table. See Fig. 1 or 2. If continuity does not exist at specified terminals, replace power window switch.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (AVALON)

Application & Position	(1) Terminals No.
Driver's Switch	
Locked & Unlocked	
UP	4, 5 & 6; 3, 8 & 9
OFF	3, 4 & 5; 4, 5 & 6
DOWN	3, 4 & 5; 6, 8 & 9
Passenger's Switch	
Locked	
UP	8, 9 & 11
OFF	11 & 13
DOWN	8, 9 & 13
Unlocked	
UP	4, 5 & 13; 8, 9 & 11
OFF	4, 5 & 11; 4, 5 & 13
DOWN	4, 5 & 11; 8, 9 & 13
Left Rear Switch	
Locked	
UP	8, 9 & 10
OFF	10 & 12
DOWN	8, 9 & 12
Unlocked	
UP	4, 5 & 12; 8, 9 & 10
OFF	4, 5 & 10; 4, 5 & 12
DOWN	4, 5 & 10; 8, 9 & 12
Right Rear Switch	
Locked	
UP	7, 8 & 9
OFF	7 & 14
DOWN	8, 9 & 14
Unlocked	
UP	4, 5 & 14; 7, 8 & 9
OFF	4, 5 & 7; 4, 5 & 14
DOWN	4, 5 & 7; 8, 9 & 14

(1) - See Fig. 1.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (CAMRY)

Application & Position	(1) Terminals No.
Driver's Switch	
Locked & Unlocked	
UP	3, 8 & 9; 4, 5 & 6
OFF	3, 4 & 5; 4, 5 & 6
DOWN	3, 4 & 5; 6, 8 & 9
Passenger's Switch	
Locked	
UP	8, 9 & 11

OFF	.....	11 & 13
DOWN	.....	8, 9 & 13
Unlocked		
UP	.....	4, 5 & 13; 8, 9 & 11
OFF	.....	4, 5 & 11; 4, 5 & 13
DOWN	.....	4, 5 & 11; 8, 9 & 13
Left Rear Switch		
Locked		
UP	.....	8, 9 & 10
OFF	.....	10 & 12
DOWN	.....	8, 9 & 12
Unlocked		
UP	.....	4, 5 & 12; 8, 9 & 10
OFF	.....	4, 5 & 10; 4, 5 & 12
DOWN	.....	4, 5 & 10; 8, 9 & 12
Right Rear Switch		
Locked		
UP	.....	7, 8 & 9
OFF	.....	7 & 14
DOWN	.....	8, 9 & 14
Unlocked		
UP	.....	4, 5 & 14; 7, 8 & 9
OFF	.....	4, 5 & 7; 4, 5 & 14
DOWN	.....	4, 5 & 7; 8, 9 & 14

(1) - See Fig. 1.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (CELICA)

Application & Position		(1) Terminals No.
Driver's Switch		
Locked & Unlocked		
UP	.....	6 & 9; 7 & 8
OFF	.....	6 & 9; 8 & 9
DOWN	.....	6 & 7; 8 & 9
Passenger's Switch		
Locked		
UP	.....	7 & 10
OFF	.....	4 & 10
DOWN	.....	4 & 7
Unlocked		
UP	.....	4 & 9; 7 & 10
OFF	.....	4 & 9; 9 & 10
DOWN	.....	4 & 7; 9 & 10

(1) - See Fig. 2.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (COROLLA)

Application & Position		(1) Terminals No.
Driver's Switch		
Locked & Unlocked		
UP	.....	1, 10 & 11; 3, 4 & 5
OFF	.....	1, 3, 4 & 5
DOWN	.....	1, 3 & 4; 5, 10 & 11
Passenger's Switch		
Locked		
UP	.....	10, 11 & 14
OFF	.....	6 & 14

DOWN	.....	6, 10 & 11
Unlocked		
UP	.....	3, 4 & 6; 10, 11 & 14
OFF	.....	3, 4, 6 & 14
DOWN	.....	3, 4 & 14; 6, 10 & 11
Left Rear Switch		
Locked		
UP	.....	9, 10 & 11
OFF	.....	9 & 12
DOWN	.....	10, 11 & 12
Unlocked		
UP	.....	3, 4 & 12; 9, 10 & 11
OFF	.....	3, 4, 9 & 12
DOWN	.....	3, 4 & 9; 10, 11 & 12
Right Rear Switch		
Locked		
UP	.....	8, 10 & 11
OFF	.....	8 & 13
DOWN	.....	10, 11 & 13
Unlocked		
UP	.....	3, 4 & 13; 8, 10 & 11
OFF	.....	3, 4, 8 & 13
DOWN	.....	3, 4 & 8; 10, 11 & 13

(1) - See Fig. 1.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (SUPRA)

Application & Position	(1) Terminals No.
Driver's Switch	
Locked & Unlocked	
UP	4 & 10; 8 & 9
OFF	8 & 9; 8 & 10
DOWN	4 & 9; 8 & 10
Passenger's Switch	
Locked	
UP	4 & 5
OFF	5 & 7
DOWN	4 & 7
Unlocked	
UP	4 & 5; 7 & 8
OFF	5 & 8; 7 & 8
DOWN	4 & 7; 5 & 8

(1) - See Fig. 2.

DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (TERCEL COUPE)

Application & Position	(1) Terminals No.
Driver's Switch	
Locked & Unlocked	
UP	3 & 9; 4 & 6
OFF	3, 4 & 6
DOWN	3 & 6; 4 & 9
Passenger's Switch	
Locked	
UP	9 & 10
OFF	7 & 10
DOWN	7 & 9

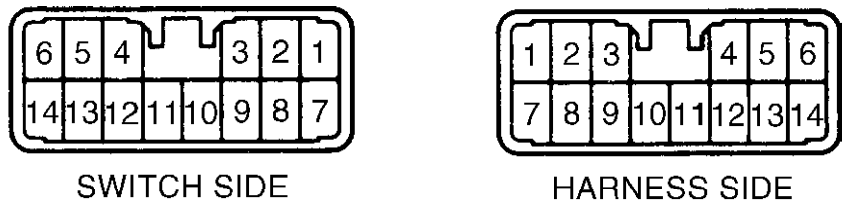
Unlocked
 UP 6 & 7; 9 & 10
 OFF 6, 7 & 10
 DOWN 6 & 10; 7 & 9

(1) - See Fig. 2.

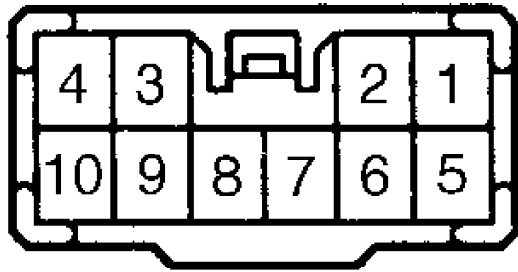
DRIVER'S POWER WINDOW SWITCH CONTINUITY TEST TABLE (TERCEL SEDAN & WAGON)

Application & Position	(1) Terminals No.
Driver's Switch	
Locked & Unlocked	
UP	1, 2 & 13; 6, 7 & 8
OFF	1, 2, 6 & 13
DOWN	1, 2 & 6; 7, 8 & 13
Passenger's Switch	
Locked	
UP	1, 2 & 5; 7, 8 & 12
OFF	1, 2, 5 & 12
DOWN	1, 2 & 12; 5, 7 & 8
Unlocked	
UP	7, 8 & 12
OFF	5 & 12
DOWN	5, 7 & 8
Left Rear Switch	
Locked	
UP	7, 8 & 10
OFF	1, 2, & 9
DOWN	1, 2, 9 & 10
Unlocked	
UP	7, 8 & 10
OFF	9 & 10
DOWN	7, 8 & 9
Right Rear Switch	
Locked	
UP	1, 2 & 14; 7, 8 & 11
OFF	1, 2, 11 & 14
DOWN	1, 2 & 11; 7, 8 & 14
Unlocked	
UP	7, 8 & 11
OFF	11 & 14
DOWN	7, 8 & 14

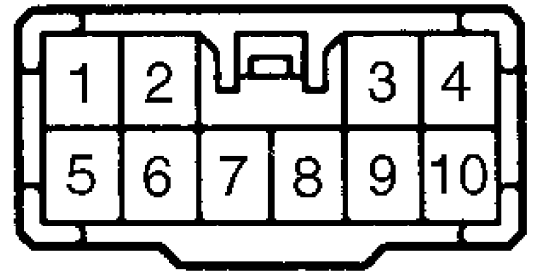
(1) - See Fig. 1.



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 Fig. 1: Identifying Driver's Master Power Window Switch Connector Terminals (Avalon, Camry, Corolla & Tercel - Sedan & Wagon)
 Courtesy of Toyota Motor Sales, U.S.A.



SWITCH SIDE



HARNESS SIDE

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Fig. 2: Identifying Driver's Master Power Window Switch Connector Terminals (Celica, Supra & Tercel Coupe)
Courtesy of Toyota Motor Sales, U.S.A.

POWER WINDOW SWITCH CONTINUITY TEST (PASSENGER'S & REAR SWITCHES)

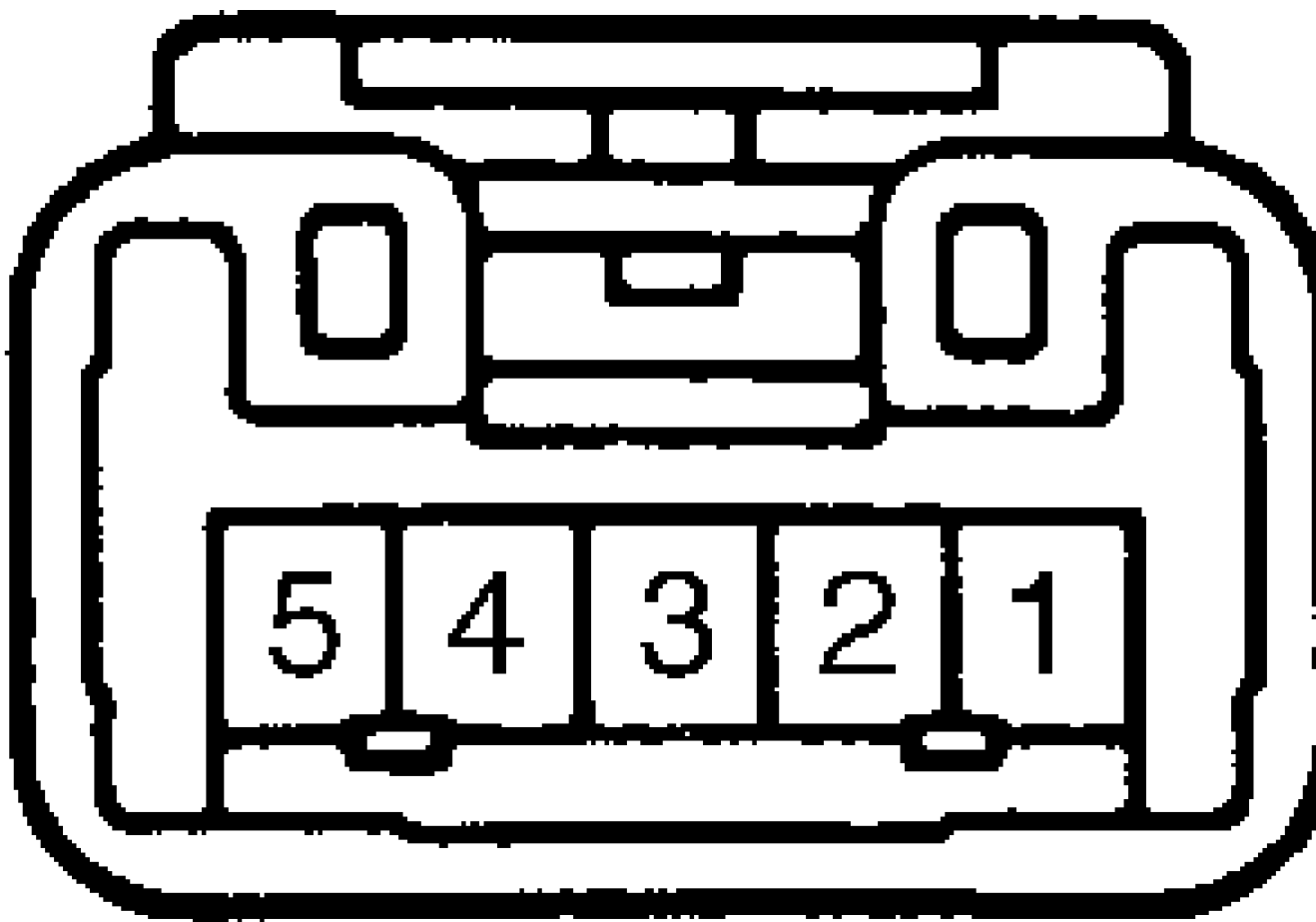
Using an ohmmeter, check continuity between specified terminals with power window switch in specified position. See POWER WINDOW SWITCH CONTINUITY TEST TABLE (PASSENGER'S & REAR SWITCHES). See Fig. 3 or 4. If continuity does not exist at specified terminals, replace appropriate power window switch.

POWER WINDOW SWITCH CONTINUITY TEST TABLE (PASSENGER'S & REAR SWITCHES)

Application & Position	(1) Terminals No.
Avalon	
UP	1 & 2; 3 & 4
OFF	1 & 2; 3 & 5
DOWN	1 & 4; 3 & 5
Camry	
Passenger's Door	
UP	1 & 2; 3 & 4
OFF	1 & 2; 3 & 5
DOWN	1 & 4; 3 & 5
Rear Door	
UP	1 & 3; 4 & 5
OFF	1 & 2; 4 & 5
DOWN	1 & 2; 3 & 5
Celica	
UP	1 & 4; 3 & 5
OFF	1 & 2; 3 & 5
DOWN	1 & 2; 3 & 4
Corolla	
Passenger's Door	
UP	1 & 2; 3 & 4
OFF	1 & 2; 3 & 5
DOWN	1 & 4; 3 & 5
Rear Door	
UP	1 & 2; 3 & 5
OFF	1 & 2; 4 & 5
DOWN	1 & 3; 4 & 5
Supra	
UP	1 & 4; 3 & 5
OFF	1 & 2; 3 & 5

DOWN	1 & 2; 3 & 4
Tercel	
Passenger's Door	
UP	1 & 5; 3 & 4
OFF	1 & 2; 3 & 4
DOWN	1 & 2; 4 & 5
Rear Door	
UP	1 & 2; 3 & 4
OFF	1 & 2; 4 & 5
DOWN	2 & 3; 4 & 5

(1) - See Fig. 3 or 4.



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Fig. 3: Identifying Power Window Switch Connector Terminals (Avalon, Camry, Celica, Corolla, Supra & Tercel - Rear Door)
 Courtesy of Toyota Motor Sales, U.S.A.

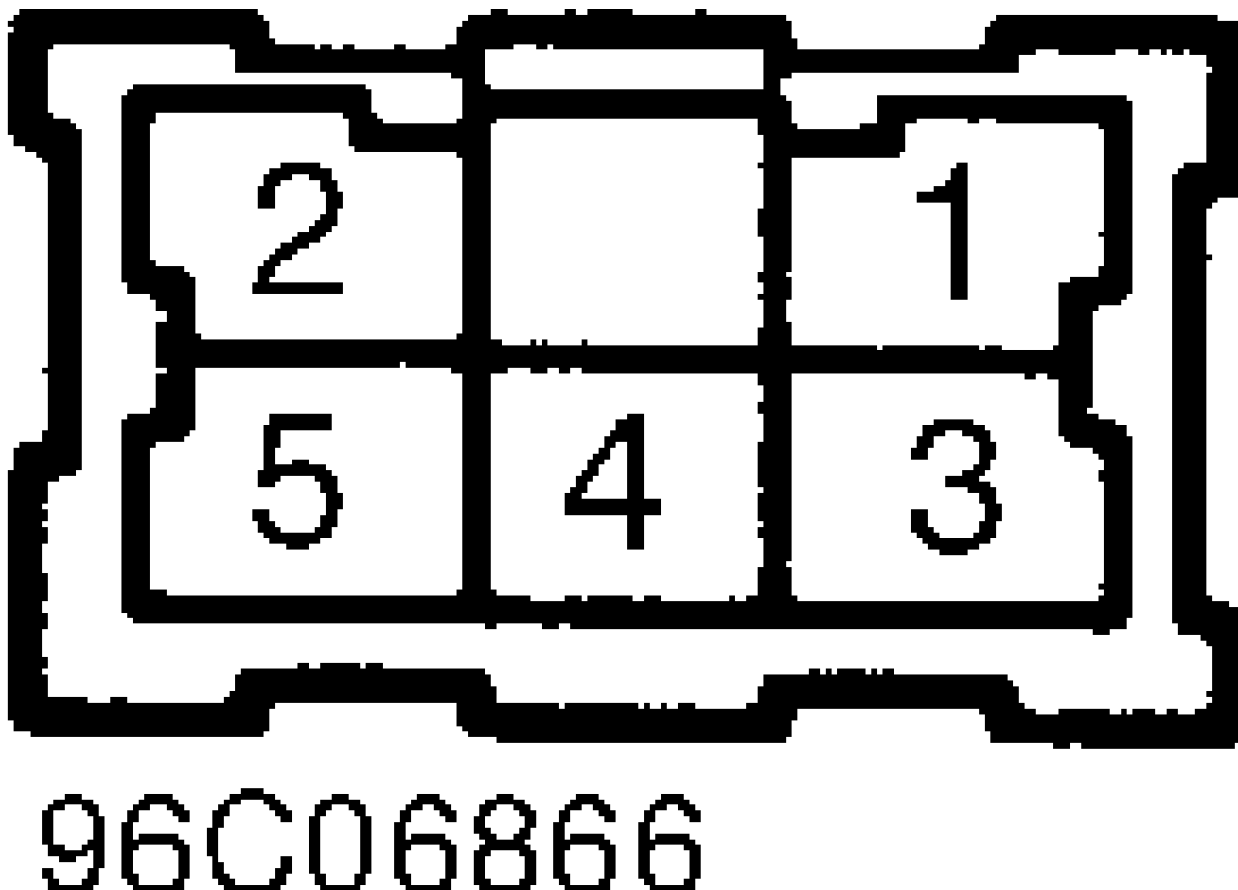


Fig. 4: Identifying Power Window Switch Connector Terminals (Tercel - Passenger's Door)
Courtesy of Toyota Motor Sales, U.S.A.

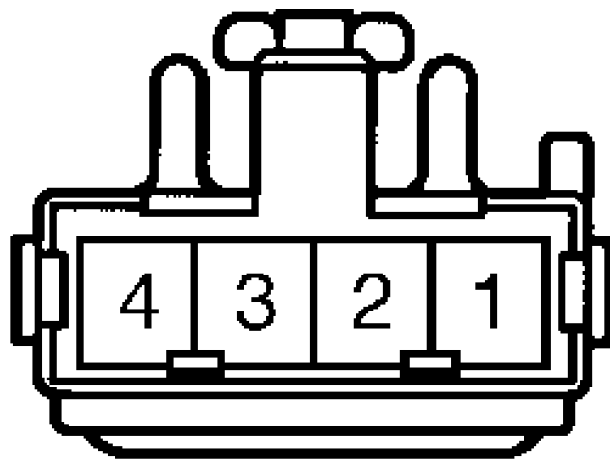
POWER WINDOW SWITCH CONTINUITY TEST (CELICA CONVERTIBLE REAR QUARTER WINDOWS)

Using an ohmmeter, check continuity between specified terminals with power window switch in specified position. See POWER WINDOW SWITCH CONTINUITY TEST TABLE (CELICA CONVERTIBLE REAR QUARTER WINDOWS). See Fig. 5. If continuity does not exist at specified terminals, replace appropriate power window switch.

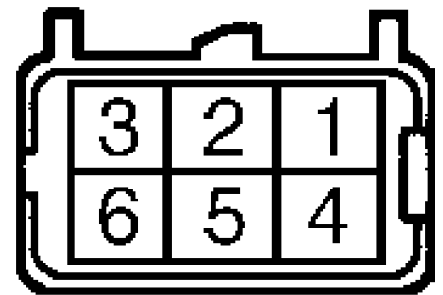
POWER WINDOW SWITCH CONTINUITY TEST TABLE (CELICA CONVERTIBLE REAR QUARTER WINDOWS)

Application & Position	(1) Terminals No.
Left Window	
UP	1 & 3; 2 & 4
OFF	1, 2 & 3
DOWN	1 & 4; 2 & 3
Right Window	
UP	1 & 6; 3 & 4
OFF	1, 3 & 6
DOWN	1 & 3; 4 & 6

(1) - See Fig. 5.



LEFT



RIGHT

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Fig. 5: Identifying Power Window Switch Connector Terminals (Celica Convertible Rear Quarter Windows)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

POWER MAIN RELAY TEST

Tercel

Remove power main relay. See POWER RELAY LOCATION table.

Using an ohmmeter, check continuity between terminals No. 1 and 3. Continuity should exist. See Fig. 8. Apply battery voltage to terminal No. 1 and ground terminal No. 3. Continuity should exist between terminals No. 2 and 4. If relay does not test as described, replace power main relay.

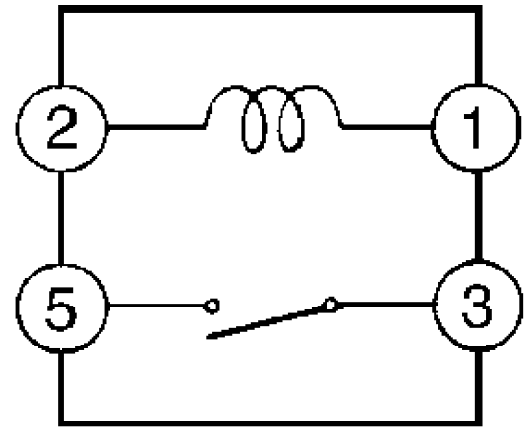
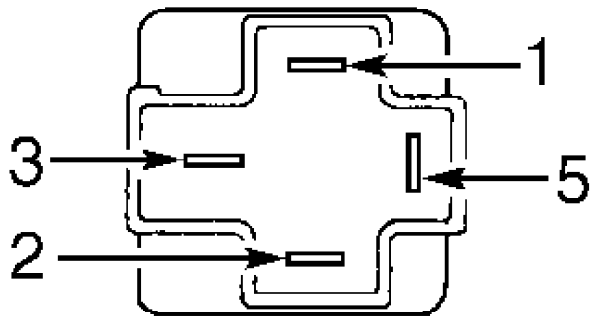
Except Tercel

Remove power main relay. See POWER RELAY LOCATION table.

Using an ohmmeter, check continuity between terminals No. 1 and 2. Continuity should exist. See Fig. 6 or 7. Apply battery voltage to terminal No. 1 and ground terminal No. 2. Continuity should exist between terminals No. 3 and 5. If continuity is not as specified, replace power main relay.

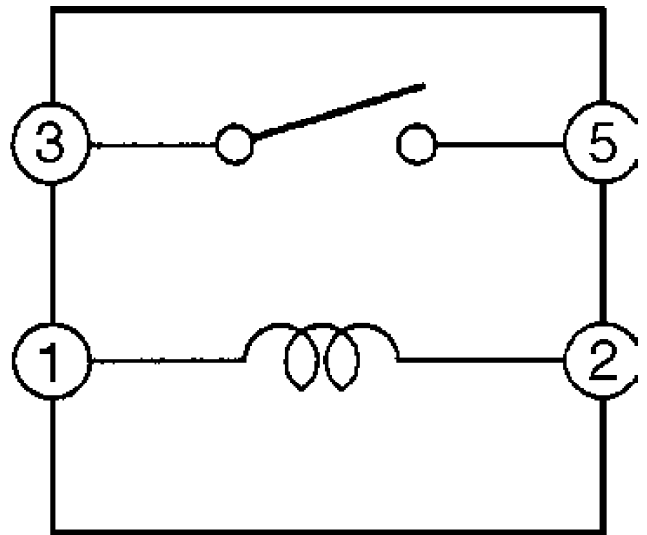
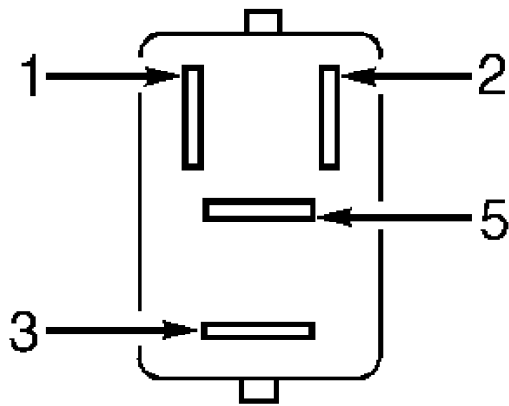
POWER RELAY LOCATION TABLE

Application	Location
Avalon, Camry & Celica	Junction Block Behind Instrument Panel, Left Of Steering Column
Corolla & Supra	Junction Block No. 1, Left Side Kick Panel
Tercel ..	Relay Block No. 7, Right Side Of Steering Column



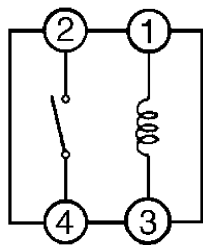
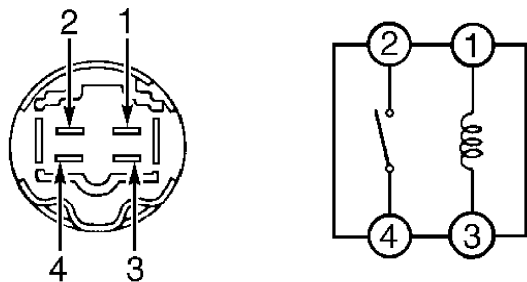
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Fig. 6: Identifying Power Main Relay Terminals (Avalon, Celica, Corolla & Supra)
Courtesy of Toyota Motor Sales, U.S.A.



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Fig. 7: Identifying Power Main Relay Terminals (Camry)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



96E06872

Fig. 8: Identifying Power Main Relay Terminals (Tercel)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

POWER WINDOW MOTOR TEST

Using a 12-volt battery, connect positive battery lead to either power window motor terminal. Connect negative battery lead to other power window motor connector terminal. Motor should operate. Reverse battery leads. Motor should operate in opposite direction. If motor does not test as described, replace motor.

INTEGRATION RELAY TEST

NOTE: Integration relay supplies voltage to the power relay.

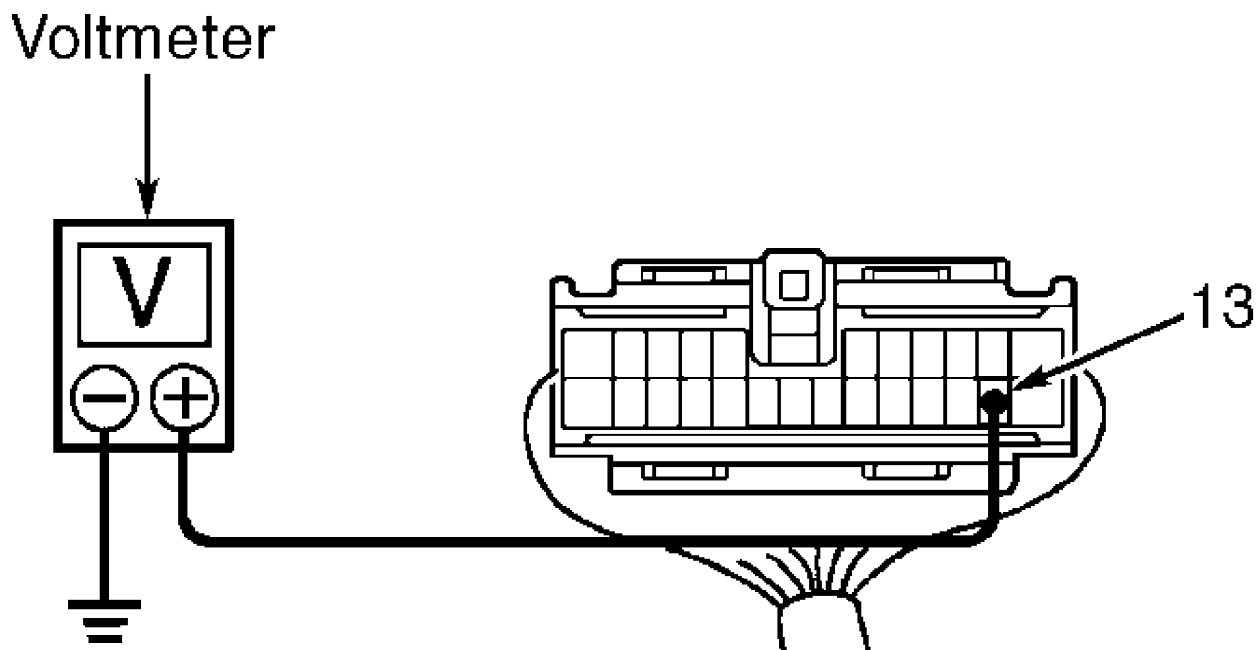
Avalon

1) Locate integration relay. See INTEGRATION RELAY LOCATION table. Backprobing connector, connect voltmeter positive lead to terminal No. 13 at integration relay 25-pin connector. See Fig. 9. Connect voltmeter negative lead to ground. Turn ignition switch to LOCK position.

2) Observe voltmeter and close driver's door. Battery voltage should be present. Open driver's door. Voltage should be zero volts. Observe voltmeter and turn ignition switch to ON position. Battery voltage should be present. If voltage is not as specified, replace integration relay and retest.

INTEGRATION RELAY LOCATION TABLE

Application	Location
Avalon & Camry ...	Junction Block Behind Instrument Panel, Left Of Steering Column



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Fig. 9: Testing Integration Relay (Avalon)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Camry (With Anti-Theft System)

1) Locate integration relay. See INTEGRATION RELAY LOCATION

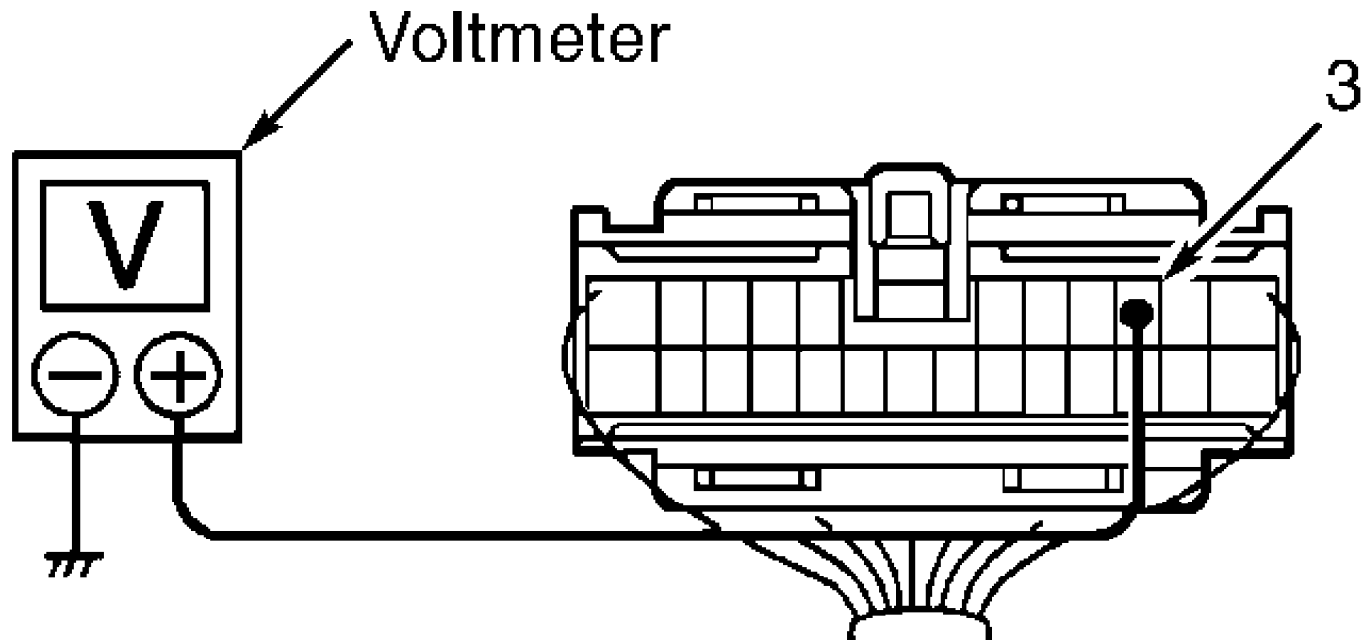
table. Backprobing connector, connect voltmeter positive lead to terminal No. 3 at integration relay 25-pin connector. See Fig. 10. Connect voltmeter negative lead to ground. Turn ignition switch to LOCK position.

2) Observe voltmeter and close driver's door. Battery voltage should be present. Open driver's door. Voltage should be zero volts. Observe voltmeter and turn ignition switch to ON position. Battery voltage should be present. If voltage is not as specified, replace integration relay and retest.

Camry (Without Anti-Theft System)

1) Locate integration relay. See INTEGRATION RELAY LOCATION table. Backprobing connector, connect voltmeter positive lead to terminal No. 12 at integration relay 13-pin connector. See Fig. 11. Connect voltmeter negative lead to ground. Turn ignition switch to LOCK position.

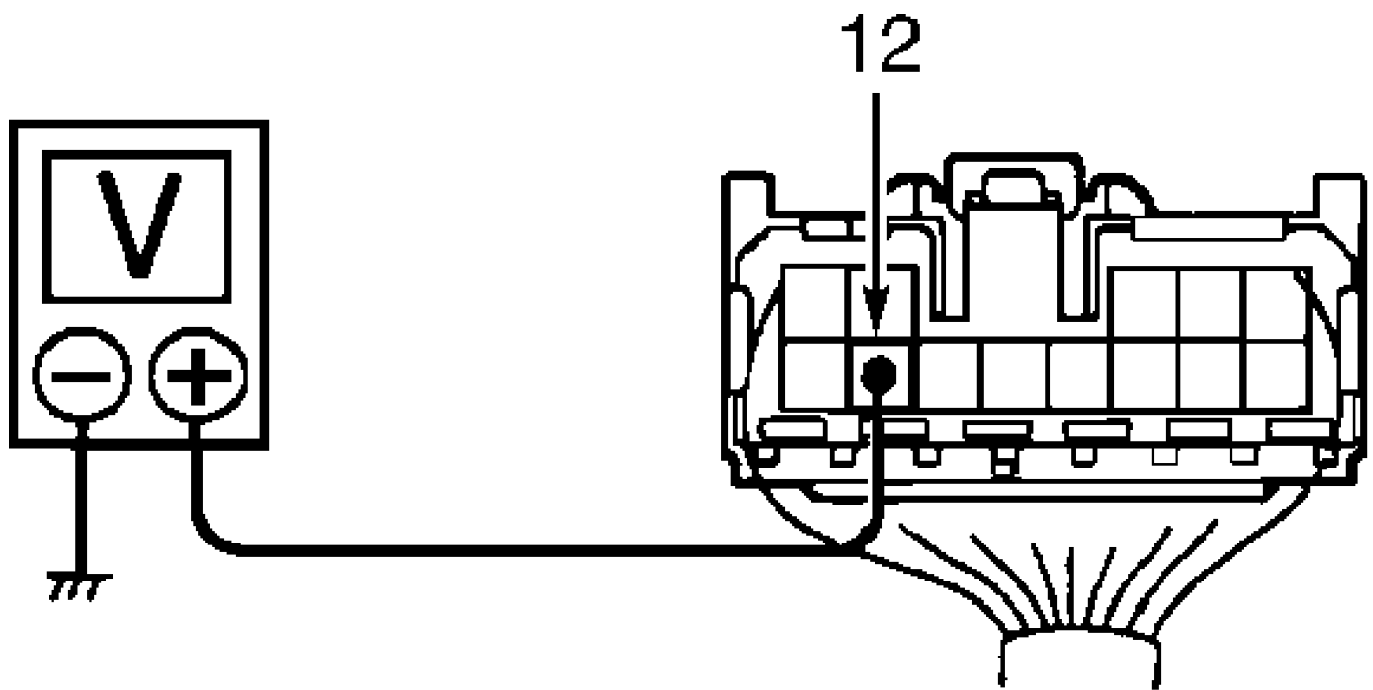
2) Observe voltmeter and close driver's door. Battery voltage should be present. Open driver's door. Voltage should be zero volts. Observe voltmeter and turn ignition switch to ON position. Battery voltage should be present. If voltage is not as specified, replace integration relay and retest.



WITH ANTI-THEFT SYSTEM

98G10831

Fig. 10: Testing Integration Relay (Camry - With Anti-Theft System)
Courtesy of Toyota Motor Sales, U.S.A.



WITHOUT ANTI-THEFT SYSTEM

98H10832

Fig. 11: Testing Integration Relay (Camry - Without Anti-Theft System)

Courtesy of Toyota Motor Sales, U.S.A., Inc.

SYSTEM TESTS

POWER WINDOW SYSTEM CURRENT TEST

NOTE: System circuit breaker opens 4-40 seconds (4-90 seconds on Celica and Supra) after window operation stops. Ensure circuit test is performed before circuit breaker operates.

Avalon & Camry

1) Disconnect driver's power window switch connector. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 3.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 6. See Fig. 1.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit as necessary. See WIRING DIAGRAMS.

Celica

1) Disconnect driver's power window switch connector. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 8.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 6. See Fig. 2.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit.

Corolla

1) Disconnect driver's power window switch connector. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 1.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 5. See Fig. 1.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit.

Supra

1) Disconnect connector from driver's power window switch. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 9.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 10. See Fig. 2.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit.

Tercel (Coupe)

1) Disconnect driver's side power window switch connector. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 3.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 4. See Fig. 2.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit.

Tercel (Sedan & Wagon)

1) Disconnect driver's power window switch connector. Connect positive lead of ammeter to driver's power window switch connector (harness-side) terminal No. 6.

2) Connect ammeter negative lead to negative terminal of 12-volt battery. Connect jumper wire from positive battery terminal to driver's power window switch connector terminal No. 13. See Fig. 1.

3) As driver's window is lowered, current should be about 7 amps. When window operation is stopped, current should increase to about 14.5 amps or more. If current is as described, replace driver's power window switch. If current is not as described, check and repair appropriate circuit.

REMOVAL & INSTALLATION

POWER WINDOW MOTOR

Removal & Installation

Remove door trim panel and waterproof shield. Remove glass retaining bolts and glass. If removing rear quarter window motor on Celica convertible, remove quarter trim panel. On all models, remove window regulator nuts and remove window regulator. Remove power window motor retaining screws, and remove motor from window regulator. To install, reverse removal procedure.

POWER WINDOW SWITCH

Removal & Installation

Disconnect negative battery cable. Pry out power window switch from door panel or trim panel using flat screwdriver. Disconnect power window switch connectors and remove switch. To install, reverse removal procedure.

WIRING DIAGRAMS

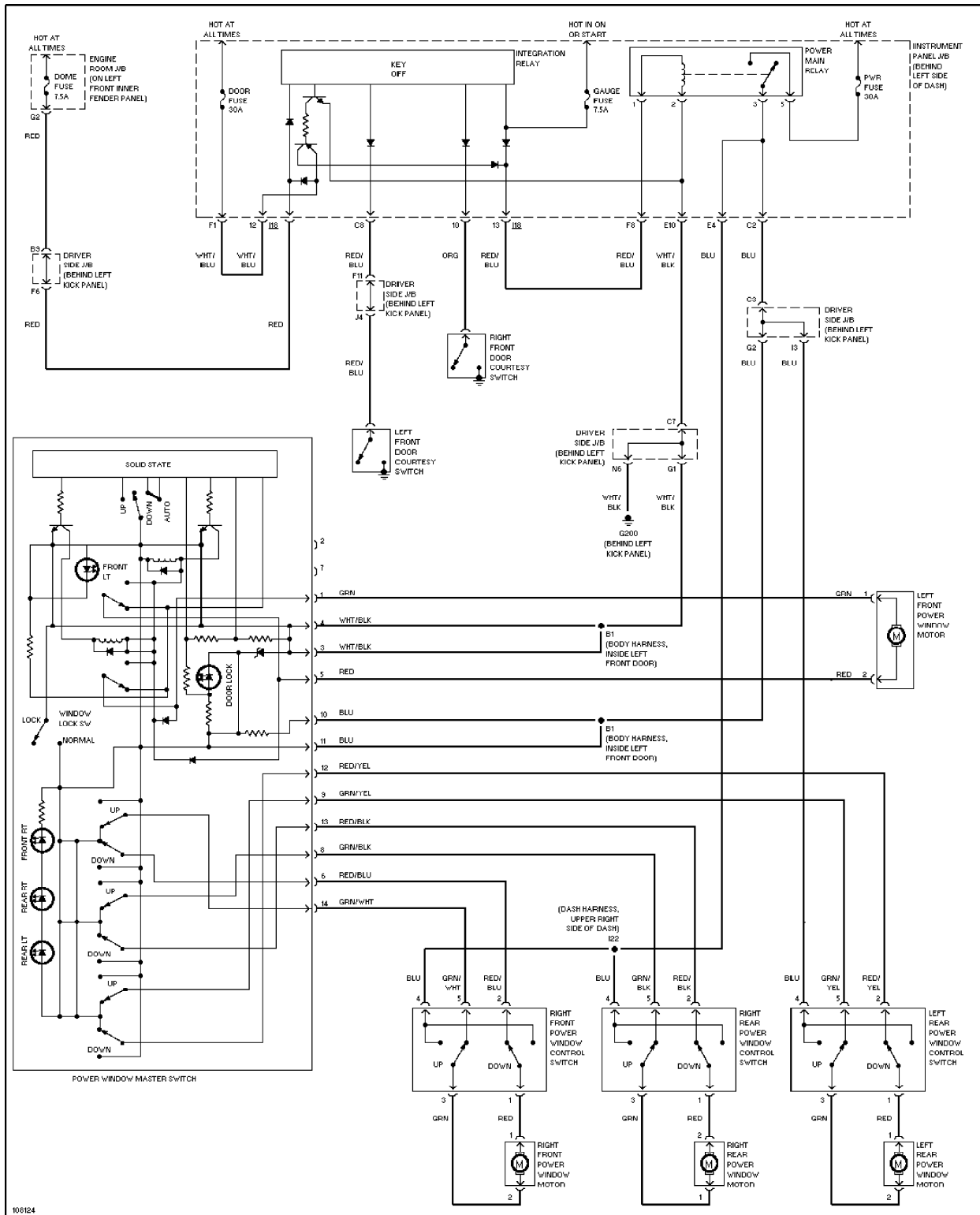


Fig. 12: Power Window System Wiring Diagram (Avalon)

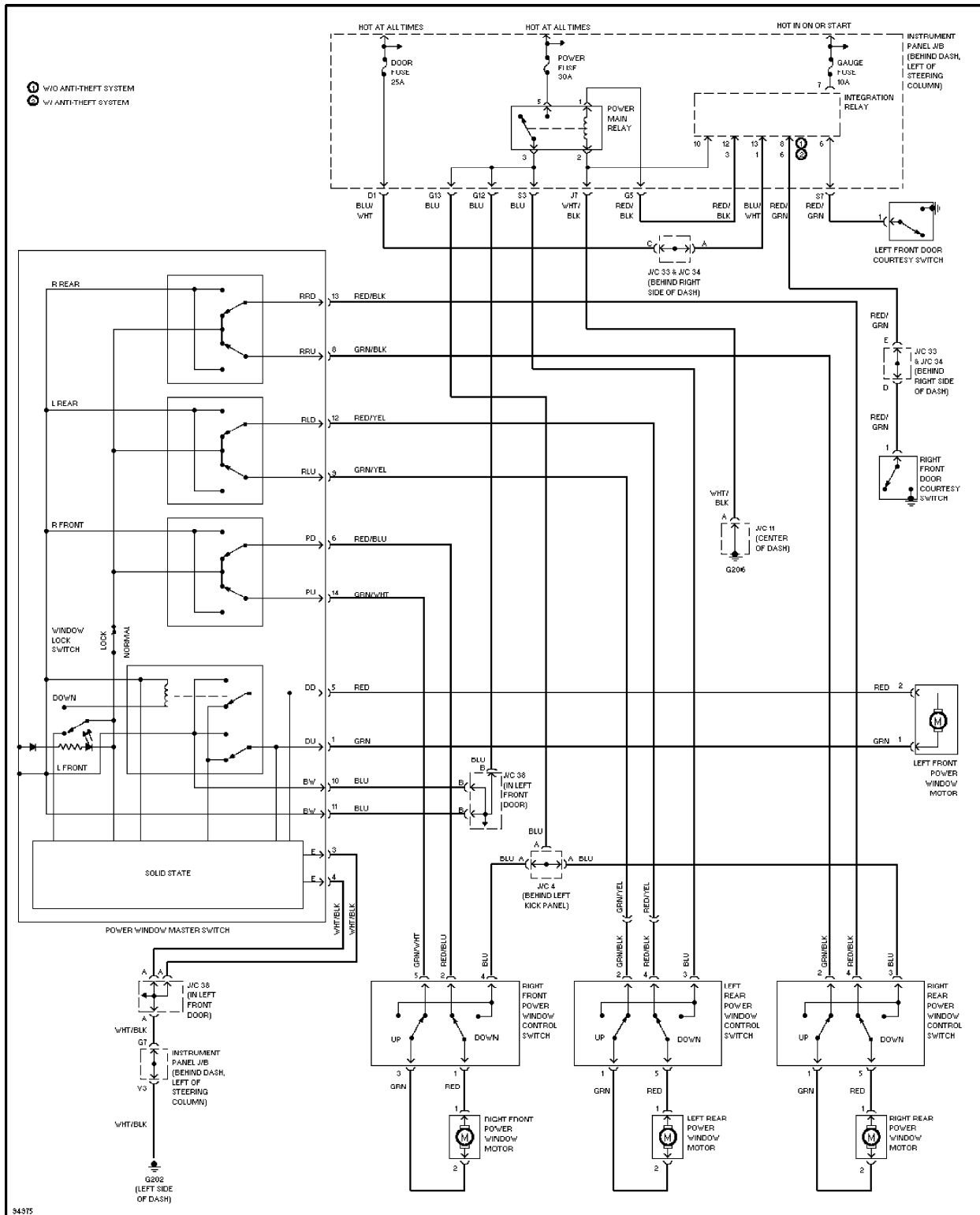


Fig. 13: Power Window System Wiring Diagram (Camry)

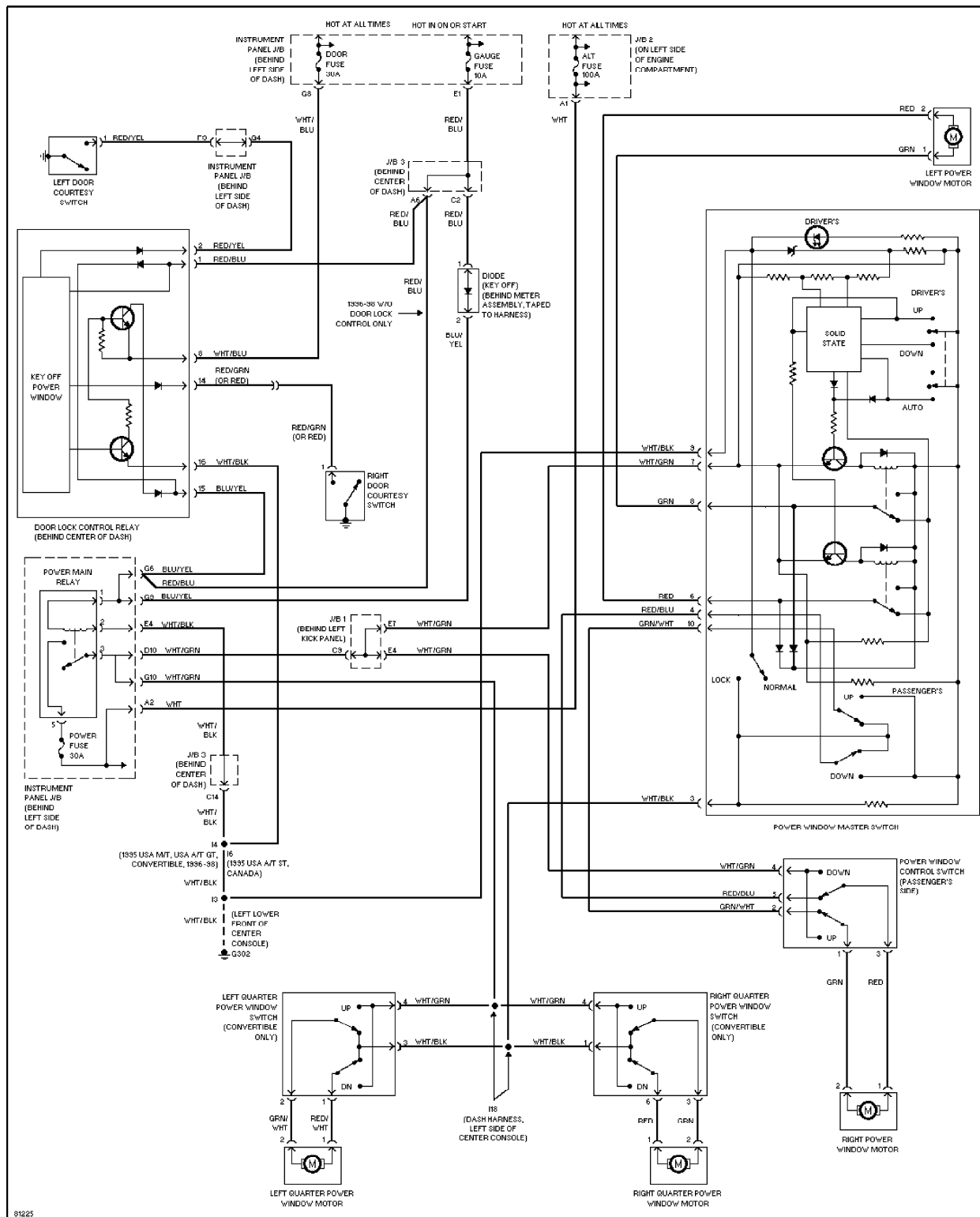


Fig. 14: Power Window System Wiring Diagram (Celica)



Fig. 15: Power Window System Wiring Diagram (Corolla)

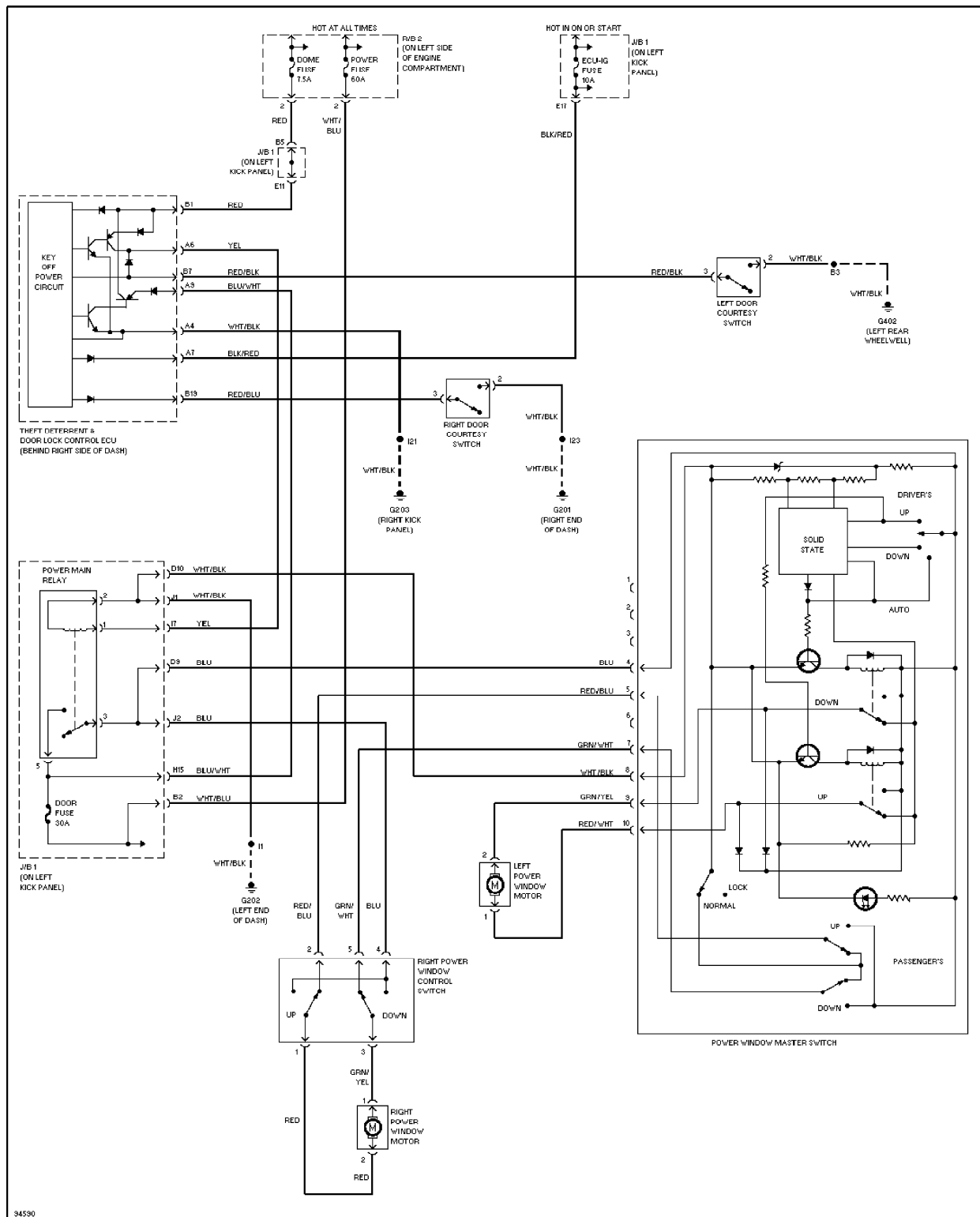


Fig. 16: Power Window System Wiring Diagram (Supra)

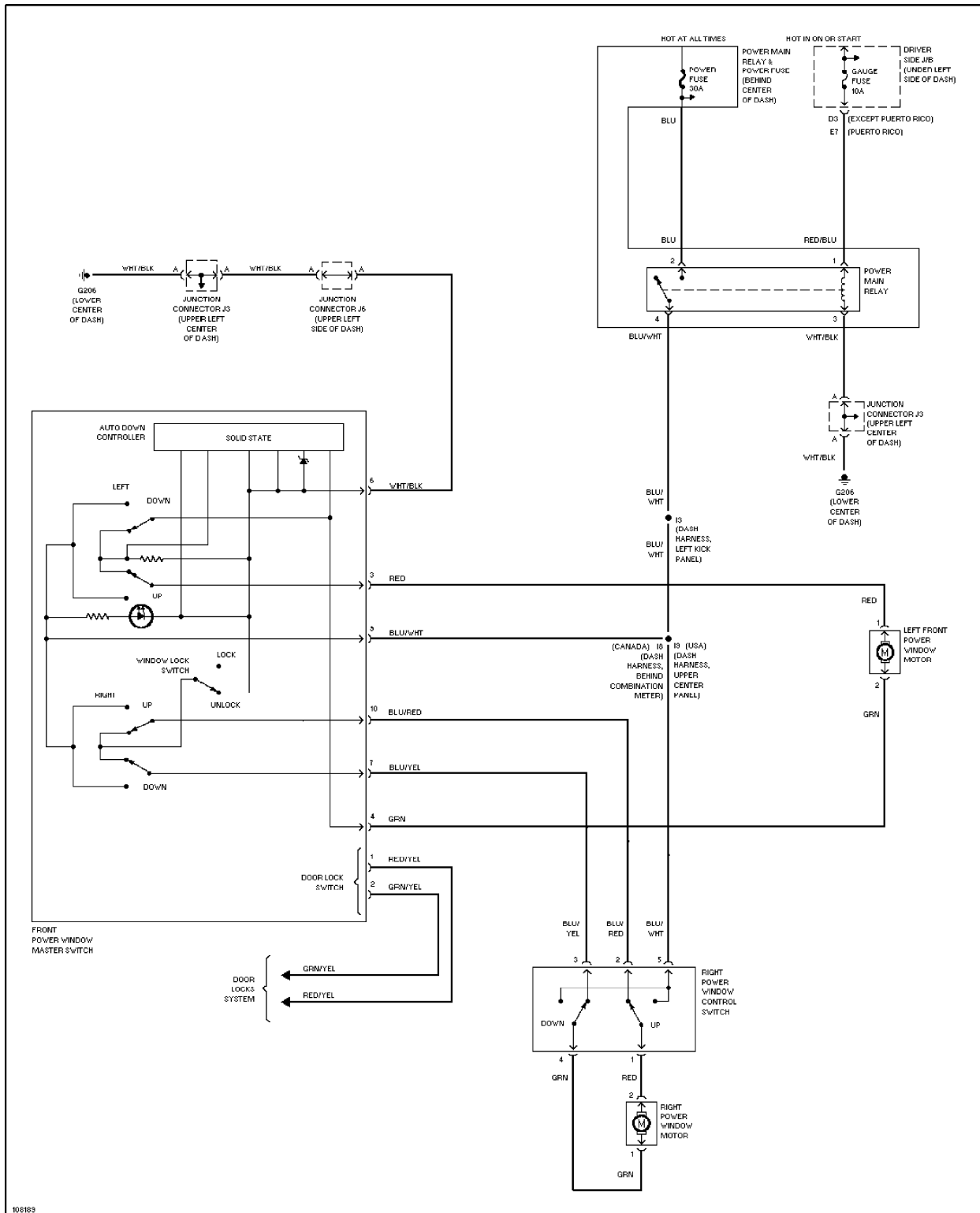


Fig. 17: Power Window System Wiring Diagram (Tercel - Coupe)

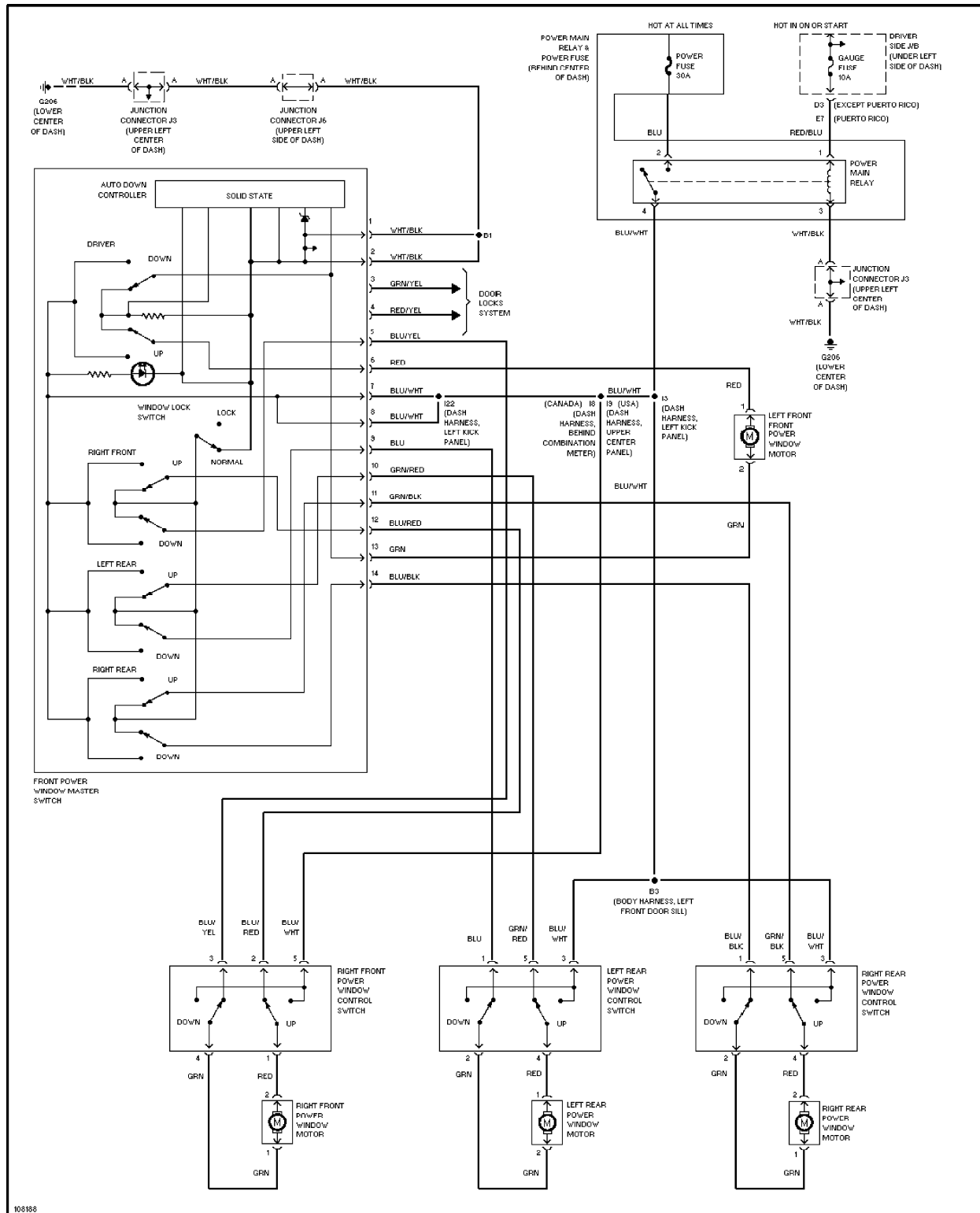


Fig. 18: Power Window System Wiring Diagram (Tercel - Sedan)