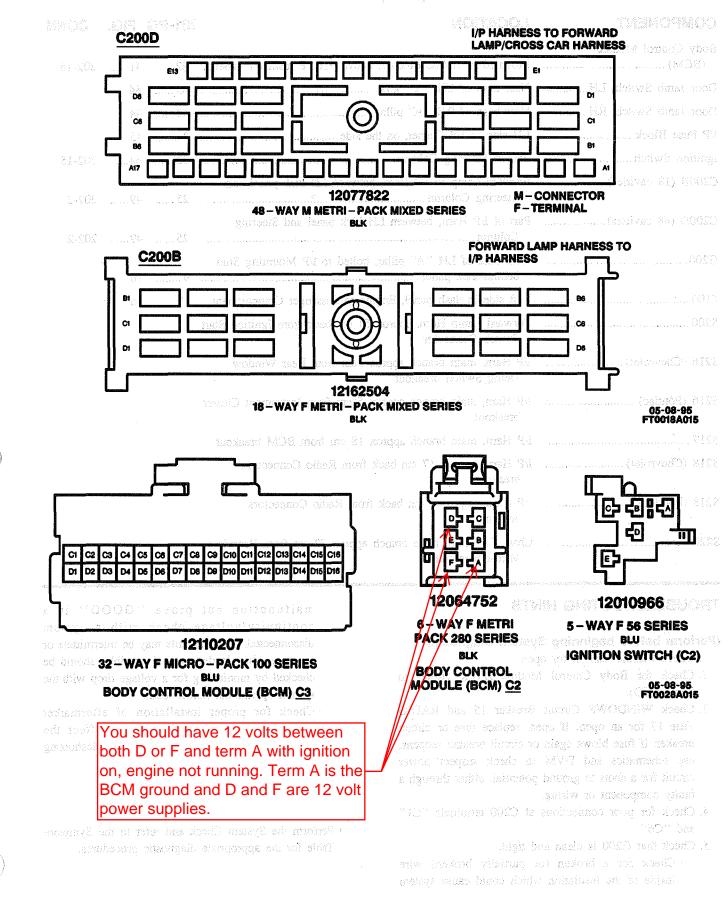
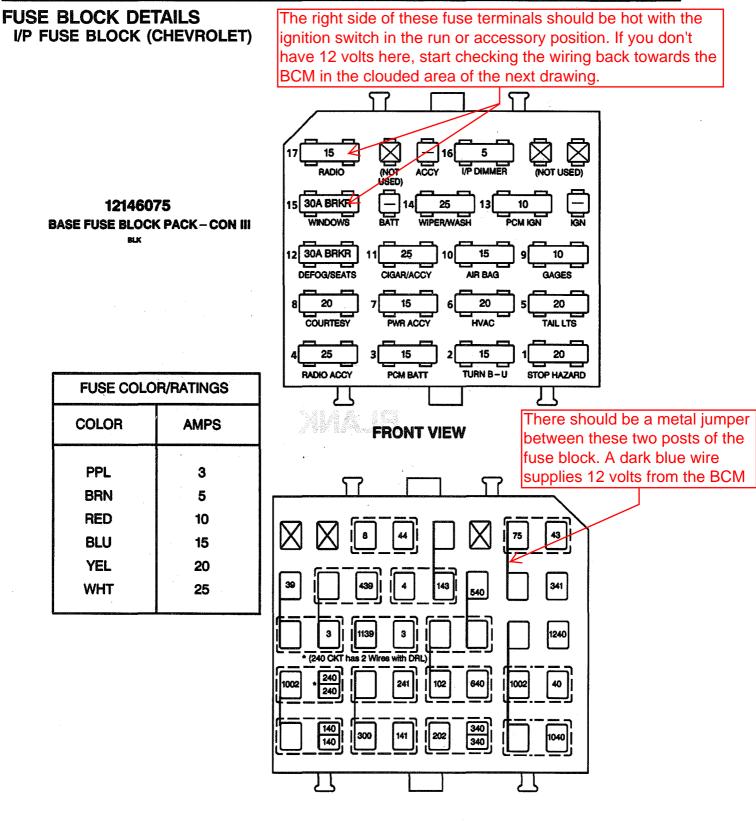
## ELECTRICAL DIAGNOSIS 8A - 15 - 1

TRAN SEMOS YYOSEEODA (ERIATE)



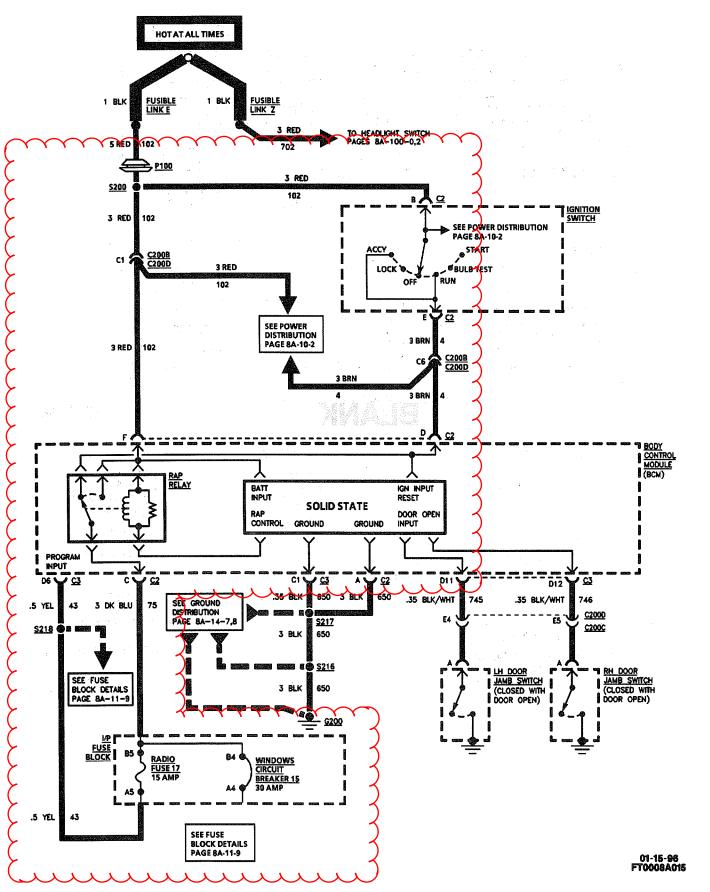
### 8A - 11 - 0 ELECTRICAL DIAGNOSIS



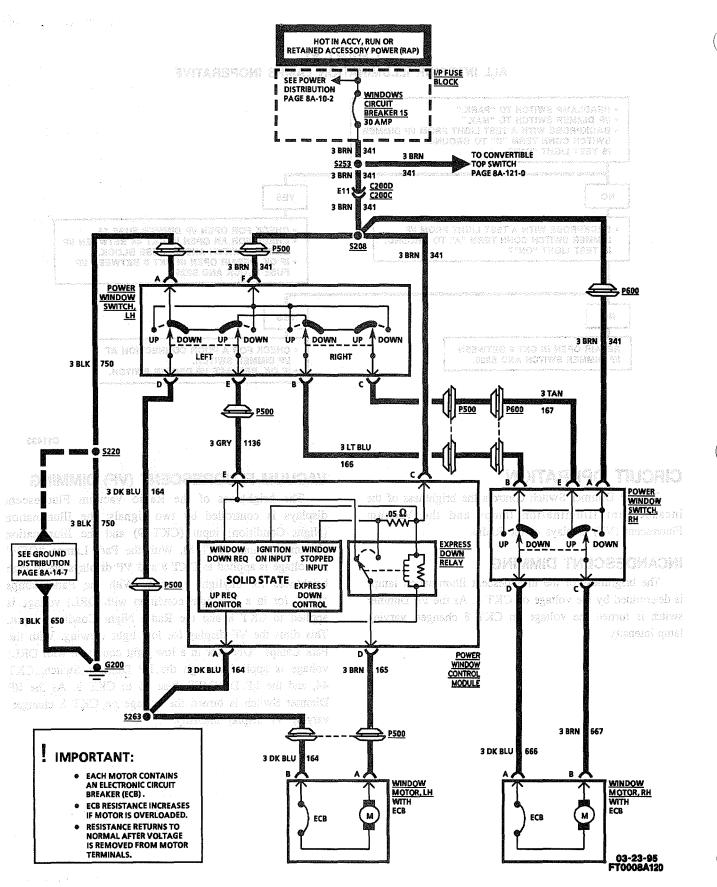
**REAR VIEW** 

## 8A - 15 - 0 ELECTRICAL DIAGNOSIS

## **RETAINED ACCESSORY POWER (RAP)**



# POWER WINDOWS



.

#### ELECTRICAL DIAGNOSIS 8A - 120 - 1

COMPONENT	LOCATION	SYSTEM CHECK	201 <b>-PG</b>	FIG.	CONN
I/P Fuse Block	LH side of I/P	Carrier, on the side	8	15	Navy production of the second state
- in a state of the antalysis within the	Mounted in left	door armrest	18 <b>18</b>	33, 34	202-17
Power Window Switch, RH	Mounted in rigl	ht door armrest	18	33, 34	202-17
Window Motor, LH Window Motor, RH		ta reneižani Mandow <mark>i Sach rando</mark> i sikelang.			ustes (Con Richard
C200C (13 cavities)		P Harn, between LH kick panel and S	•	49	202-2
C200D (48 cavities)	Column	n, between LH kick panel and Steering	25	49	202-2
G200	Near base of Li behind kick p	H "A" pillar, bolted to I/P Mounting a banel.		.dt. in ta 16	Por officials
P500		veen LH door and "A" pillar	17		s ann an tha shi an an tair an an
P600	Cross Car, betw	veen RH door and "A" pillar		84	swo9 mo8
\$208	Cross Car Harn	, main branch approx 5 cm from Pow	e <b>er</b> er erendet och oppositet tertenten ander ander	SECONV	e ritor noti
\$-051-A8		, main branch approx 22 cm from Rea	i lovižstagosi v arview tot patere		
S253 (Chevrolet Conv)	I/P Harn, main	but and the TNO share of the TNO share of the state of th	Cluster	V\$ 4.	l ogi mor
	breakout		l Power Wende	43	An Poliver HF Addivie Ador Addivie Ador
S263 eostgen ,XO N .holiw2 wo	Cross Car Harn Mirror break	n main branch approx 15 cm from Re but s not concection source on the source of the so	oni avitsheqoni i	vobnivý obraiVý	AH Power I H-Power

#### **TROUBLESHOOTING HINTS**

(Perform before beginning System Diagnosis) 1. If both windows are inoperative: DOB SUBSOM KNINGO WODNIN • Check windows Circuit Breaker 15 for open. If open, check for short to ground through CKT 341. • Check for poor connection at C200 terminal "E11". 2. If windows move slowly, check that: · Windows free of mechanical binding and pivot joints and tracks are properly lubed. identication and ne tof at . Refer to System Diagnosis. robally new of the B • Battery is fully charged. • Ground G200 is clean and tight. 3. If the Express Down Feature does not work, but window moves down with each switch depression, check for poor connection at Power Window Control

Module terminal "A" or open in CKT 164 from Power Window Control Module to S263. • Check for a broken (or partially broken) wire

inside of the insulation which could cause system malfunction but prove "GOOD" in a

continuity/voltage check with a system disconnected. These circuits may be intermittent or resistive when loaded, and if possible, should be checked by monitoring for a voltage drop with the system operational (under load). Check for proper installation of aftermarket electronic equipment which may affect the integrity of other systems (refer to "Troubleshooting Procedures," page 8A-4-0).

#### SYSTEM DIAGNOSIS

• Perform the System Check and refer to the Symptom Table for the appropriate diagnostic procedure(s).

## Important:

• Prior to performing System Diagnosis, check Body Control Module (BCM) for stored Diagnostic Trouble Codes (DTCs). Refer to Section 8D.

## 8A - 120 - 2 ELECTRICAL DIAGNOSIS

<u>201-PG FIG. COMM</u>	SYSTEM	CHECK	401200		NBROARD
ACTION		: Carrier, en m	NORM	AL RESULTS	
<ul> <li>Operate each window "UP" and Master Power Window Switch As</li> </ul>	sticking. Ll	H Front Win	quietly and sr dow rolls dow	noothly, with no wn all the way Down Feature).	
2] CL-COC SELEC	Each window operates quietly and smoothly, with no sticking.				
	ns lonsų kiek fili no			28	cenives 51, 000
• For a better understanding of the Re Power (RAP) operation, refer to "C at the end of this section.	ircuit Operation"	, nelky "A" )	Column ameloC (ar base of L)		
SYMPTOM	PROCI	EDURE	vass Ciri, betw	PAGE NU	MBER
Both Power Windows inoperative rom both switches.				8A-120	<b>)-3</b>
_H Power Window inoperative, RH Power Window operates normally	Chart #2		Waad <mark>y Con</mark> 1995 Or Ham	8A-120	<b>)-4</b>
Both Power Windows inoperative from the LH Switch, RH Switch operates RH Window normally.	Check CKT 341 fo S208. Check CKT Switch. If OK, rep	341 for a p	oor connectio	n at LH Power	Switch and r Window
RH Power Window inoperative from both switches, LH Power Window operates normally.	anoit crost cCha	rt #3 <sub>16</sub> ກ່ານເຮັດ	l disar cash 4 holisad	8 <b>A-12</b>	<b>)-5</b> .) osimo4) ič
RH Power Window inoperative from	LH Power Window Switch.				
LH Power Window Switch with	LH Power Windov			tanta di tanàna dia 600 mila mampiasa dia mi	944 (1969) - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 - 1970 -
LH Power Window Inoperative from LH Power Window Switch with normal operation from RH Power Window switch.	LH Power Window			terity of the solution of the teritory of the solution of the solution of the solution of the solution of the s	0829_8403
LH Power Window Switch with normal operation from RH Power	LH Power Window Check for poor co "A" and terminal " "A" of Power Wind terminal "C" of Po Window Control M	v Switch. nnections at C". Check fo dow Control ower Window	Power Windo propen in CK Module and in	ow Control Mo T 164 from S2 n CKT 341 fro	dule terminal 263 to terminal m S208 to
LH Power Window Switch with normal operation from RH Power Window switch. Express Down Feature inoperative. Window does operate up and down while switch is held in the desired position. Express Down Feature is	Check for poor co "A" and terminal " "A" of Power Wind terminal "C" of Po	v Switch. onnections at C". Check for dow Control ower Window fodule. onnection or of a to S208.	Power Windo or open in CK Module and in Control Mod	tow Control Mo T 164 from S2 n CKT 341 fro ule. If OK, rep 341 from RH I	dule terminal 263 to terminal m S208 to lace Power

\$

there in the second second

Control Module (NCM) for more Desmostic Thatha

awooway Asada

#### CHART #1

BOTH POWER WINDOWS INOPERATIVE FROM BOTH SWITCHES

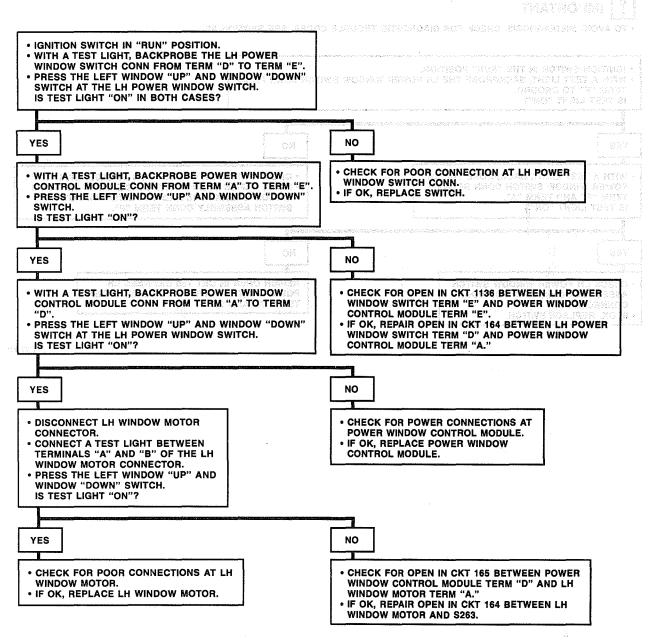
ALLANDON CETATION WOOMW REPORT HA

IGNITION SWITCH IN THE "RUN" POSITION. WITH A TEST LIGHT, BACKPROBE THE LH POWER WINDOW SWI TERM "F" TO GROUND. IS TEST LIGHT "ON"?	CH CONN FROM
WITH A TEST LIGHT, BACKPROBE THE LH POWER WINDOW SWITCH CONN BETWEEN TERM "F" AND TERM "A". IS TEST LIGHT "ON"?	• CHECK FOR POOR CONNECTION AT C200 TERM "E11 • IF OK, REPAIR OPEN IN CKT 341 BETWEEN WINDOWS CIRCUIT BREAKER 15 AND LH POWER WINDOW SWITCH ASSEMBLY CONN TERM "F".
YES	
CHECK LH POWER WINDOW SWITCH ASSEMBLY CONNECTOR FOR POOR CONNECTION. IF OK, REPLACE SWITCH.	REPAIR OPEN IN CKT 750 BETWEEN LH POWER WINDOW SWITCH ASSEMBLY CONN TERM "A" AND S220.
TA BUCK OSTATION AND AND AND AND AND AND AND AND AND AN	ACCANNET LA VARDA NOTRA DARETTON REALES "A" AND "S" OF THE LA REALES "A" AND "S" OF THE LA RESS THE LET VARDA "V" AND RESS THE LET VARDA "V" AND TERT LART "OW"?
and the second se Second second s	
and a second	

**?** IMPORTANT:

## **POWER WINDOWS**

#### CHART #2 LH POWER WINDOW INOPERATIVE, RH POWER WINDOW OPERATES NORMALLY



	ELECTRICAL DIAGNOSIS 8A - 120 - 5
	POWER WEEDOWS
sel surveitade 20 mil dassent redokt versative sur	NOTARISO TLUBO
jano 1996 del algorida hannag estador Bos aldolo solición	a tana a sa a sa a sa a sa a sa a sa a s
eneral value V movels Halleeb hav danske MKC en. a oddaat ser a dat en value of alt state bes vie CHART	
RH POWER WINDOW INOPERATI	VE FROM BOTH SWITCHES,
LH POWER WINDOW OP	ERAIES NORMALLY (Second a form of assists and the second of as
es der sellen den energy verlaget in eine MAR auf teorinos 👘	lefutuation (RAR) and the geosterus), thematoly in the
modded to the DX 3ED wire through the 1919 words	of an and many MACA SHIT and to believe a soli
and the LH Prover Wiedow Solph Assembly. The mainly	<b>roob a li</b> on <b>to homen</b> a antingi raite channe in
of the ignition switch in "RUN."	Berlinsel in gelt exection melone to see attact
• WITH A TEST LIGHT, BACKPROBE LH POWER WINDOW SWIT FROM TERM "B" TO TERM "C."	CH CONNER - a assess sandtable (* 1911) 1940 - European -
WHILE OBSERVING THE TEST LIGHT AND USING THE LH PO	
HI WINDOW SWITCH, PRESS THE RH WINDOW SWITCH. "UP" TH TEST LIGHT "ON" FOR BOTH?	
Wohn Window in your will area that the dealer the work	<u> </u>
esen my static discussion mension is and se	·····································
odi e diyes ioniomog at ontarel and gradeoutece valerale –	NOR CONTRACTOR OF CARE CARE CARE CARE
Foreir Window Chained Meximum Factor is account.	would rewall ful on dyuratic learning available to disave
WITH A TEST LIGHT, BACKPROBE RH POWER WINDOW SWITCH CONN FROM TERM "B" TO TERM "E." WHILE OBSERVING THE TEST LIGHT, AND USING THE LH POWER WINDOW SWITCH, PRESS THE RH WINDOW SWITCH "UP" THEN "DOWN." TEST LIGHT "ON" FOR BOTH?	CHECK FOR POOR CONNECTION AT LH POWER WINDOW SWITCH.     IF OK, REPLACE LH POWER WINDOW SWITCH.
tennon o neur file file al participation wor rousie resistance when vottage o the Windors is internet.	reguel werters. Roch earrow is controlled by an "UP" with and a "DN" which, which are normally cloud <b>on</b> wurd. When any "widow Switch is moved on the "or <b>1</b>
WITH A TEST LIGHT, BACKPROBE RH POWER WINDOW SWITCH CONN FROM TERM "C." TO TERM "D."     WHILE OBSERVING THE TEST LIGHT, PRESS THE RH POWER WINDOW SWITCH "UP" THEN "DOWN." TEST LIGHT "ON" FOR BOTH?	<ul> <li>CHECK FOR OPEN IN CKT 166 BETWEEN LH POWER WINDOW SWITCH AND RH POWER WINDOW SWITCH.</li> <li>IF OK, REPAIR OPEN IN CKT 167 BETWEEN LH POWER WINDOW SWITCH AND RH POWER WINDOW SWITCH.</li> </ul>
YES	NO
<ul> <li>WITH A TEST LIGHT, BACKPROBE RH WINDOW MOTOR CONN FROM TERM "A" TO TERM "B."</li> <li>WHILE OBSERVING THE TEST LIGHT, PRESS THE RH POWER WINDOW SWITCH "UP" THEN "DOWN." TEST LIGHT "ON" FOR BOTH?</li> </ul>	<ul> <li>CHECK RH POWER WINDOW SWITCH FOR A POOR CONNECTION.</li> <li>IF OK, REPLACE RH POWER WINDOW SWITCH.</li> </ul>
YES	NO
<ul> <li>CHECK FOR POOR CONNECTION AT RH WINDOW MOTOR.</li> <li>IF OK, REPLACE RH WINDOW MOTOR.</li> </ul>	<ul> <li>CHECK CKT 666 BETWEEN RH POWER WINDOW SWITCH AND RH WINDOW MOTOR FOR OPEN.</li> <li>IF OK, REPAIR OPEN IN CKT 666 BETWEEN RH POWER WINDOW SWITCH AND RH WINDOW MOTOR.</li> </ul>

)

# 8A - 120 - 6 ELECTRICAL DIAGNOSIS POWER WINDOWS CIRCUIT OPERATION

#### Important:

• The Power Windows System has voltage applied from the Windows Circuit Breaker 15 which is controlled by the Retained Accessory Power (RAP) Module. Voltage is applied to the PWR ACCY Fuse for up to 10 minutes after Ignition is turned off or until a door is opened. For a complete understanding of Retained Accessory Power (RAP) operation, refer to Section 8A-15.

When the Ignition Switch is in "RUN," "ACCY," or RAP, voltage is applied from Windows Circuit Breaker 15 to the LH Power Window Switch and the RH Window Switch through CKT 341. The Window Motors and Switches receive ground through the LH Power Window Switch Assembly, which is grounded at G200. The RH Window can be operated from the LH and RH Power Window Switch Assemblies. The LH Front Window is operated directly from the LH Power Window Switch. The Power Windows are driven by reversible, permanent magnet motors. Each motor is controlled by an "UP" switch and a "DN" switch, which are normally closed to ground. When any Window Switch is moved to the "UP" position, the "UP" switch will provide battery voltage to the Window Motor through the DK BLU wire. The Window Motor will receive ground through the BRN wire, the "DN" switch, and the LH Power Window Switch Assembly and drive the window up. When the switch is released, the switch contacts return to the normal grounded position. To lower the window, the "DN" switch will connect the BRN wire to battery voltage. Ground will be provided to the DK BLU wire through the "UP" switch and the LH Power Window Switch Assembly. The polarity across the motor will be reversed, causing the motor to rotate in the opposite direction and lower the window. The Power Windows System also includes an Express Down Feature for the LH Front Window. This allows the LH Front Window to open fully when the LH Front Window Switch is pressed momentarily. All of the solid state circuitry controlling this feature is contained within the Power Window Control Module. Each motor is protected by an Electronic Circuit Breaker (ECB). If a Window Switch is held in the "UP" or "DN" position too long with the window obstructed, or after the window is fully up or down, the ECB will increase its resistance. By increasing its resistance, the ECB will prevent the Window Motor from overloading. The ECB will reset to normal resistance when voltage to the Window Motor is interrupted.

