TITLE

OVER TEMPERATURE PROTECTION
TEST INSTRUCTIONS
FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

REVISIONS

ELEMENTARY DIAGRAM IC3600SOTJA1, SH 3.0 TO

TEST EQUIPMENT

A. +12 VDC POWER SUPPLY 100MA
B. -12 VDC POWER SUPPLY 100MA
} BALANCED RELATIVE TO EACH OTHER TO 1%

C. +5 VDC POWER SUPPLY 100MA

CONNECT ACOM (2)(35)(50) TO DCOM (1)(51)

D. ADJUSTABLE D.C. INPUT VOLTAGE #2 OF 0 TO +12 VDC. (STABLE TO ± 1%)

E. ADJUSTABLE D.C. INPUT VOLTAGE #1 OF 0 TO 10 VDC. (STABLE TO ± 1%)

F. RESISTORS

68.1K - 68A7014A6810F. QTY 1 RES. C

G. D.V.M. FLUKE 8300A OR EQUIVALENT

H. STOP WATCH CAPABLE OF MEASURING 40 SECONDS.

INITIAL CONDITIONS.

1. SET POTS R1 (TRIP), R2 (ALM), R3 (DIFF), 12 TURNS FROM END OF CLUTCH SLIPPING. ALL POTS 25 TURNS. SET ALL SWITCHES OFF.
2. WIRE CARD PER FIGURE 1 - SHEET # 9
3. NHP BIAS

(SW1 POS 1)
A - MEASURE NHP BIAS (9) WITH NHP (3) JUMPERED TO P12, OBSERVE THAT VOLTAGE AT (9) IS 0.0VDC ± 50MV (M1)

B - DIS CONNECT P12 FROM NHP (3)

C - CONNECT A 0 TO +10 VDC SIGNAL SOURCE TO NHP (3) WITH RESPECT TO ACOM.

(SW1 POS 2) (M1) (M2)
D - MEASURE NHP BIAS (9) WITH DVM AND NHP (3) WITH DVM.

E - NOTE THAT THE FUNCTION OF FIG 2 IS GENERATED.
(VARY #2 (M2) THE VOLTAGE ON NHP (3) AND VERIFY THE CORRESPONDING OUTPUT AT BIAS (9) PER FIG. 2. NOTE: FIG.2 IS NOT A WAVEFORM.)

1) BU945PC JVG 771202
2) BU945XC CGL 11/7/78
3) 23SEP86 JMT

DL22

2520

PRINTS TO

REV NO.

68A944933

CONT ON SHEET 3 SH NO. 2

TITLE

OVER TEMPERATURE PROTECTION
TEST INSTURCTIONS
FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

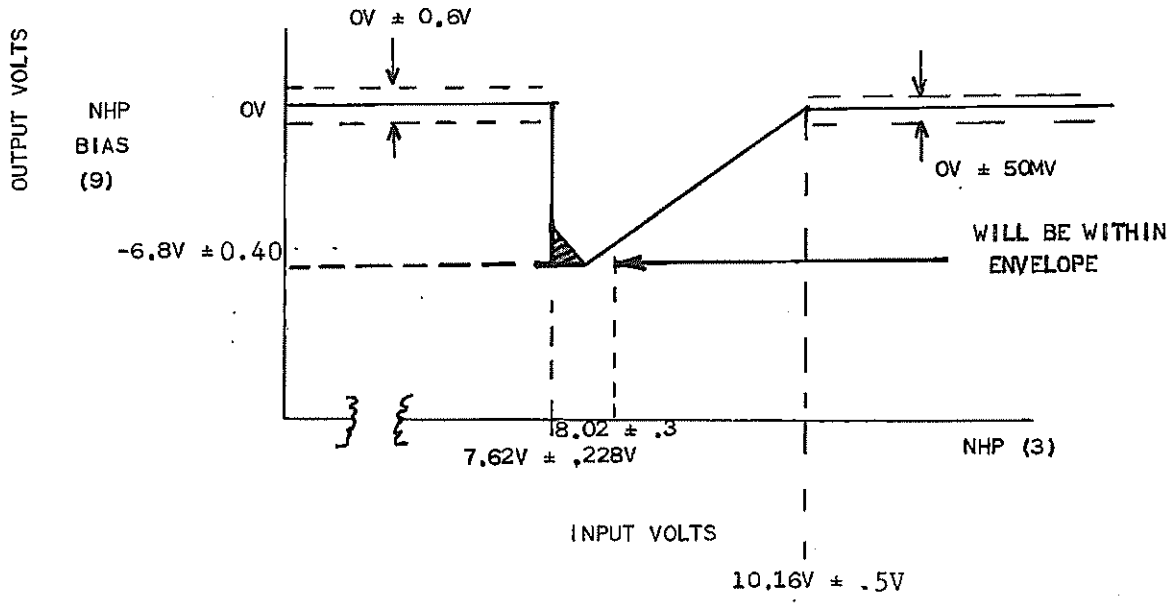

FIG 2

(SW1 POS 3)
F - DISCONNECT SIGNAL INPUT TO (3) AND CONNECT (3) TO P12 (27).

4. OVER TEMPERATURE TRIP

A WITH ADJUSTABLE D.C. VOLTAGE SUPPLY #2 APPLY +2.55 VDC ± .003 V TO TERMINAL (11) (MEAS. DIRECTLY ON PIN 11)

B. INPUTS TERMINALS (10)(12)(14) AND TEST RESISTOR "C" 68.1K CONNECTED TO (4) MUST BE JUMPERED TO A-COM (2) WHILE THE FOLLOWING TEST ADJUSTMENTS ARE MADE.
ADJUST O.T. TRIP BIAS POT R1 SLOWLY C.W. UNTIL OUTPUT AT (CM13) (20) CHANGES FROM 0±.2V to 0.6V ± 0.25V (with one meg meter) AND REMAINS THUS. O T Trip Lite ON.
THIS TEST STEP MUST BE CAREFULLY AND ACCURATELY DONE OR THE FOLLOWING TEST STEPS WILL NEVER BE ACHIEVED.

B1. REMOVED ADJ D.C. VOLTAGE SUPPLY #2 FROM SJ (11) THIS VOLTAGE SOURCE WILL BE USED FOR OTHER PURPOSES.
OPEN SWITCH 10-12-14 TO COM.

NOTE: FOR THE FOLLOWING TEST SEQUENCES, IT MAY BE NECESSARY TO ADJUST PS#1 WITHIN THE RANGE GIVEN TO OBTAIN THE REQUIRED OUTPUT TRIP RESPONSE.

REVISIONS

8) 23SEP86 JMT

5) BU945XC CGL 11/2/78
6) DHP 781221
7) AG 800211 (CR# 800125-IC17) (TOL. CHG. .25V)

1. REV 2 2/8/78 JMT
REV. 2 8-27-
REV 3 JVG 2/14/77
REV 4 BU945PC JVG 771202

DL22
2520

PRINTS TO

MADE BY	APPROVALS		68A944933
JOHN TURNER		DRIVE SYSTEMS (DIV OR DEPT.)	
ISSUED August 31, 1973	R.G. Lorden	SALEM, VA (LOCATION)	CONT ON SHEET 3 SH NO. 2
			CODE IDENT NO.

FF-803 WF (4-72)
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OVER TEMPERATURE TRIP CIRCUIT - INPUTS TO IC2-A

NOTE: SWITCH SW1 BEFORE CLOSING ANY TOGGLE SWITCHES AND OPEN TOGGLE BEFORE MOVING SW1

PS#1 PS#2 (HS CALLED FOR) SEE NOTE

TEST STEP	FOR STEPS 4C THRU 4G. ADJUST SUPPLY (10) FROM 0 VOLTS UNTIL OUTPUT (20) SWITCHES. THIS SHOULD OCCUR AT POINTS LISTED.	ADJUSTABLE D.C. SUPPLY #2 CONNECT TO FOLLOWING PIN NUMBER WITH A MAGNITUDE AS LISTED.		VERIFY THE FOLLOWING M1	INPUTS (10) (12) (14) AND RESISTOR C CONNECTED TO (4) TIES TO A-COM IF NO INPUT IS ON IT. M2	NOTES AND PURPOSE OF THIS TEST
SW1 POS4 4C	6.4V ± .1V ON (10) (SW OFF)		CONNECT (12) TO N12 (29)	OUTPUT AT (20) CHANGES FROM .6+.2V TO 0V±.25V	CONNECT A-COM (2) TO (14), (RES C)	PCDF/R INPUT CIRCUIT AND RESISTOR CHECK
SW1 POS5 4D	6.6 ± .1V ON (10)		REMOVE (12) AND CONNECT (14) TO N12 (29)	OUTPUT AT (20) CHANGES FROM .6+.2V TO 0V±.25V	CONNECT A-COM (2) TO (12), (RES C)	PCD/N INPUT CIRCUIT AND RESISTOR CHECK
SW1 POS6 4E	0V ON (10)	-8V ± .01V CONNECT TO RES. C 68.1K SEE FIG. 1	REMOVE (14) TO N12 (29)	OUTPUT AT (26) -8V ± .1V	A-COM (2) TO (12), (14)	PEAK RESERVE BUFFER AMPL. IC4-B
SW1 POS7 4F	5.6V ± .1V ON (10)	-8V ± .01V CONNECT TO RES. C 68.1K SEE FIG. 1		OUTPUT AT (20) CHANGES FROM .6+.2V TO 0V±.25V	A-COM (2) TO (12), (14)	PEAK RESERVE INPUT RESISTORS TO IC2-A
SW1POS8 4G CLOSE SWC-2	5.4 ± .1V ON (10)	+8V ±.2V CONNECT TO (3) NHP BIAS (9) SHOULD BE APPROX. 6.4V (-)	REMOVE WIRE JUMPER ON (3) FOR THIS TEST	OUTPUT AT (20) CHANGES FROM .6+.2V TO 0V±.25V	A-COM (2) TO (12), (14), (RES C) (SWC-2)	NHP BIAS INPUT TO IC2-A AFTER TEST RETURN JUMPER TO (3) (27)
SW1POS9 4H CLOSE SWC-2	SET SUPPLY AT 5.95V ± .1V ON (10)	PIN 20 WILL BE AT ZERO. GOES TO .6 ± .2V	JUMPER (19) TO (13)	OUTPUT AT (20) CHANGES STATE .6+.2V TO 0V±.25V	A-COM (2) TO (12), (14), (RES C)	HIGH RANGE TRIP BIAS . AFTER TEST REMOVE (19) TO (13)
SW1POS10 4I OPEN SWC-2	SET SUPPLY AT 5.9V ± .1V ON (10)			OUTPUT (38) IS 5V ± 1V, O.T. LIGHT IS ON	OUTPUT (37) Output 0.1V ±0.1V	OVER TEMP. TRIP LOGIC
SW1 POS10 4J	SET SUPPLY AT 4.5V ± .1V ON (10)		PUSH RESET	Output (38) is 0.1V±0.1V O.T. Light is out	OUTPUT (37) IS 5V ± 1V	RESET PB1 MUST BE OPERATED AFTER EACH TRIP

MADE BY JOHN TURNER ISSUED Aug 31 1973

APPROVALS R.L. Jordan

DRIVE SYSTEMS — DIV OR DEPT. SALEM, VA — LOCATION

CONT ON SHEET 4 — 68A944933 — SH NO. 3 — CODE IDENT NO.

PRINTS TO 2520 DL22

1. REV 1 2/8/74 JMT REV 2 8/27 RM REV 3 BU945PC JVG 771202

4) BU945XC CGL 11/7/78

5) TOL. CHG (.25V) CR# 800125-IC17 AB 800211

6) JMT 240ct86

REVISIONS

REV NO. A

68A944933 CONT ON SHEET 4 SH NO. 3

TITLE OVER TEMPERATURE PROTECTION TEST INSTRUCTIONS FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

GENERAL ELECTRIC

68A944933 CONT ON SHEET 4 SH NO. 3

FF-803 WF (4-72) PRINTED IN U.S.A.

REV NO.

68A944933
CONT ON SHEET 5 SH NO. 4

TITLE

OVER TEMPERATURE PROTECTION
TEST INSTRUCTIONS

FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

REVISIONS

5 - OVERTEMPERATURE ALARM

(SW1 POS 11)

A - With adjustable D.C. voltage supply #2 apply 2.55VDC ± .003V to terminal (23). MEASURE AT PIN 23

B - Inputs terminals (10)(12)(14) and test Resistor "C" 68.1K connected to (4) must be jumpered to A-COM (2) while the following test adjustments are made.

Adjust O.T. alarm bias pot R2 slowly C.W. until output at (M1) (21) changes from 0±.2V TO 1.8 ± .2V

This test step must be carefully and accurately done or the following test steps will never be achieved.

B-1 - Remove ADJ D.C. voltage supply #2 from SJ (23). This voltage source will be used for other purposes.

NOTE: ADJ. POT R2 UNTIL NO FURTHER INCREASE IS NOTED AT PIN (21). THE LEVEL AT THIS POINT SHOULD BE 1.8 ± .2V. 1.952

DISCONNECT (10) (12) (14) AND C FROM (2)

1. 2/8/74 JMT
2) 2406 86 JMT

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DRIVE SYSTEMS PRODUCT DIV OR DEPT.

SALEM, VIRGINIA LOCATION

68A944933
CONT ON SHEET 5 SH NO. 4

CODE IDENT NO.

OVER TEMPERATURE ALARM CIRCUIT - INPUTS TO IC2-B

	PS#1	PS#2	NOTES			
TEST STEP	Adj. voltage on Supply #1 from 0V until the output volts at (21) swing from 1.8V to 0V for steps 5C-5G.	ADJUSTABLE D.C. SUPPLY #2 CONNECT TO FOLLOWING PIN NUMBER WITH A MAGNITUDE AS LISTED		VERIFY THE FOLLOWING M1	INPUTS (10)(12)(14) AND RESISTOR "C" CONNECTED TO (4) TIES TO A-COM IF NO INPUT IS ON IT. M2	NOTES AND PURPOSE OF THIS TEST
SW1POS12 5C	6.3V ±.1 ON (10)		CONNECT (12) TO N12 (29) DO THIS FIRST	OUTPUT AT (21) CHANGES FROM 1.8±.2V TO 0V ±.2V	CONNECT A-COM (2) TO (14) (RES "C")	PCDF/R INPUT CIRCUIT AND RESISTOR CHECK
SW1POS15 5D CLOSE SW27 TO 14	6.5V± .1V ON (10)		REMOVE (12) CONNECT (14) TO N12 (29) DO THIS FIRST	OUTPUT AT (21) CHANGES FROM 1.8V±.2V TO 0V ± .2V	CONNECT A-COM (2) TO (12) (RES "C")	PCD/N INPUT CIRCUIT AND RESISTOR CHECK
5E						
SW1POS16 5F OPEN SW29TO14	5.6V± .1V ON (10)	-8V ± .01V CONNECT TO RESISTOR C 68.1K (4) DO THIS FIRST	REMOVE (14) TO N12 (29)	OUTPUT AT (21) CHANGES FROM 1.8V±.2V TO 0V± .2V	CONNECT A-COM (2) TO (12)(14) ERROR	PEAK RESERVE INPUT RESISTORS TO IC2-A REMOVE -8V
SW1POS18 5G CLOSE SWC TO 2	5.4V±.1V ON (10) READ	+8V ± .2V CONNECT TO (3) NHP BIAS (9) SHOULD READ APPROX. -6.2V -6.42	REMOVE WIRE JUMPER ON (3) FOR THIS TEST	OUTPUT AT (21) CHANGES FROM 1.8V±.2V TO 0V±.2V	CONNECT A-COM (2) TO (12)(14) (RES.C)	NHP BIAS INPUT TO IC2-A AFTER TEST RETURN JUMPER TO (3) (27)
5H	5.85V ±.1V ON (10)		JUMPER (24) TO (22) FIRST	OUTPUT AT (21) CHANGES STATE 1.8V±.2V TO 0V ± .2V	CONNECT A-COM (2) TO (12)(14) (RES.C)	HIGH RANGE TRIP BIAS AFTER TEST REMOVE (24) TO (22)
SW1POS20 5I OPEN SW TO 2	5.8V ± .1V ON (10)			OUTPUT (39) IS 5V ±.1V O.T. AIM IS ON	Output (36) Output 0.1V ± 0.1V.	OVER TEMP ALARM LOGIC
SW1POS20 5J	4.5V ± .1V ON (10)	SET VOLTAGE	READ	Output (39) is 0.1±0.1V O.T. AIM is Out.	OUTPUT (36) IS 5V ± 1V	ALARM LIGHT WILL GO OFF AND ON WITH LOGIC. NO SEAL CIRCUIT

1. 2/8/79 JMT REV.2-29-79 KM REV.3 BU9451C JVG 771202

4) 24Oct 86 JMT

PRINTS TO 2520 DL22

REVISIONS

MADE BY JOHN TURNER ISSUED August 31, 1978

APPROVALS R.C. Gordon

DRIVE SYSTEMS DIV OR DEPT. SALEM, VA LOCATION

CONT ON SHEET 6 6 8 A 9 4 4 9 3 3 SH NO. 5 CODE IDENT NO.

REV NO. A 6 8 A 9 4 4 9 3 3 CONT ON SHEET 6 SH NO. 5

TITLE OVER TEMPERATURE PROTECTION TEST INSTRUCTIONS FIRST MADE FOR IC3600SOTJ1 SPEC'TRONIC

GENERAL ELECTRIC

CONT ON SHEET 6 6 8 A 9 4 4 9 3 3 SH NO. 5

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DIFFERENTIAL EXHAUST TEMP. ALARM COMPARATOR.

6

(PS#1)

SW1 POS21 A - CONNECT INPUTS (42) AND (10) TO +5 VOLTS. WITH A DIGITAL VOLTMETER APPLIED TO (M1) (41) AND A-COM (2) (50), ADJUST R4 ON CARD UNTIL OUTPUT AT (41) READS ZERO VOLTS ±0.010.

SW1 POS21 B - WITH SAME CONDITIONS AS TEST STEP 6A MEASURE IC3-B (40) AND THIS VOLTAGE must be (M2) -11V ± 2V. -9.71 (REMOVE PS#1 FROM CONSOLE)

SW1 POS22 C - REMOVE TEST CONNECTIONS USED IN PREVIOUS TEST STEP 6A, THEN TIE O. T.(10) TO A-COM.

(PS#2)

THEN ADJUST R3 (DIFF ALARM) MAX CLOCKWISE. CONNECT INPUT (42) TO THE + 0.1 VDVC ± .003V. CONNECT OT (10) TO ACOM. THE OUTPUT AT M2 (40) SHOULD BE -11V ± 2V. -9.93

(PS2) -9.71

D - REVERSE THE POWER SUPPLY LEADS. THE OUTPUT SHOULD REMAIN -11V ± 2V. -9.71

E - REMOVE 0.1V POWER SUPPLY TEMPORARILY AND REPEAT STEP A, STEP B, AND STEP C.

F - CONNECT THE + 0.1 VDC POWER SUPPLY AGAIN TO TX PIN 42. SEE TABLE 6 FOR FURTHER INSTRUCTIONS.

REV. 1 BY ASPEC JNG 771202
REV. 2 BU945XC CGL 781107
3) 24 Oct 96 JMT

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PRINTS TO

DIFFERENTIAL EXHAUST TEMP ALARM COMPARATOR

TABLE 6

PS#2

TEST STEP SW1 POS22	INPUT SIGNAL TO (42) SUP.#2	OUTPUT OF IC3-A (41) CLOSE 10TOC M1	OUTPUT IC3-B (40) M2		ODIFF (47) M1	DIFF (49) M2	DIFF. ALARM LIGHT	NOTES AND PURPOSE OF TEST
6D	0.14 ± .07	-2.5 ± .07 -2.487	ADJ. GAIN POT R3 UNTIL OUTPUT CHANGES TO from -11V to +11V ± 2V (CCW)					TEST GAIN OF IC3.A 25°F CASE TESTS MIN SITUATION
6E POS22	+ .5V ± .01	-8 TO -10v -8.87	Adj. gain pot R3 until output changes from +11V to -11V, ± 2V (CW)	NOTE: Turn Pot R3 until output changes back to +11V±2V	SW1	SW2		CHECK GAIN AND POT R3 100°F TESTS MAX. SITUATION
6F POS.23	0V (OPEN)		-11 ± 2.0V		POS.23 4V TO 5V M1	POS.1 .1V±.1V M1	DARK	TEST ALARM LOGIC
6G SW2 POS.2	.6V ADJUST TO .6V BEFORE SWITCHING TO POS.2				0.1V±0.1V AFTER 25-35 SECONDS MEASURED WITH STOP WATCH M1	4V TO 5V M2	LIT	LIGHT HAS NO SEAL CIRCUIT
AFTER DELAY READ					4V TO 5V	.1V±.1V	LTT	
		MAKE SURE SW1 IS SET TO OFF BEFORE SETTING SW2						

1. 2/8/79 JMT
2. BU945PC JVG 12/2/77
3. BU945XC CGL 11/07/78
4. BU968FU REH 4-27-9
5) 24Oct86 JMT

PRINTS TO 2520 DL22

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ISSUED 11 Aug 83

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DRIVE SYSTEMS — DIV OR DEPT.

SALEM, VA — LOCATION

CONT ON SHEET 8 — 6 8 A 9 4 4 9 3 3 — SH NO. 7

CODE IDENT NO.

REV NO. A

CONT ON SHEET 8 — 6 8 A 9 4 4 9 3 3 — SH NO. 7

TITLE OVER TEMPERATURE PROTECTION TEST INSTRUCTIONS

FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

GENERAL ELECTRIC

CONT ON SHEET 8 — 6 8 A 9 4 4 9 3 3 — SH NO. 7

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SYSTEM FAILURE INDICATION

6 APPLY A VARIABLE D.C. SIGNAL TO (10) AND PERFORM THE FOLLOWING TESTS.

OPEN SW TB 10 TO COM

TEST STEP	DC TEST SIGNAL TO (10) PS#1	IC4-A OUTPUT (25) M1	T.C. O FAIL (48)	M1 T.C. FAIL (32)	M2 O SYSF (30)	M1 SYSF (31)	M2 SYS. FAIL LIGHT		NOTES AND PURPOSE OF TEST
SW2 7A POS3	OV ± .003	2.0 ± .2V							BIAS RES ZENER
7B	1V ± .1V	0.2V to .6V							RESISTOR CHECK
SW2 7C POS4	OV ± .003		0 to 0.5V	4V TO 5V	0 TO 0.5V Pos. 5	4V TO 5V Pos. 5	LIT		LOGIC ELEMENTS
SW2 POS6 7D THEN POS7	1.5V		4V TO 5V	0 TO 0.5V	4V TO 5V ①	OV TO 0.5V ①	DARK ①		① RESET PB #1 MUST BE OPERATED
SW2 7E POS.7	OV							OPERATING PB #1 WILL NOT TURN LIGHT OFF (EXCEPT WHILE DEPRESSED)	
SW2 7F POS.8	OV							CONNECT (43) TO (51) OPERATE PB #1 LIGHT WILL GO OUT	CHECKS INPUT 43
SW2 7G POS.9	OV							DISCONNECT (43) AND CONNECT (44) TO (51) OPERATE PB #1 LIGHT WILL GO OFF	CHECKS INPUT 44
SW2 7H POS.10	OV							DO THE ABOVE FOR (45) TO (51) (INHIBITS LIGHT)	CHECKS INPUT (45)
SW2 71 POS11	OV							DO THE ABOVE FOR (46) TO (51)	CHECKS INPUT (46)

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DRIVE SYSTEMS DIV OR DEPT. SALEM, VA LOCATION

CONT ON SHEET 9 68A944933 SH NO. 8

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PRINTS TO 2520 DL22

REV. 1 BU945PC JVG 771202
REV. 2 BU945XC CGL 781107
3) 24Oct86 JMT

REVISIONS

REV NO. A

CONT ON SHEET 9 68A944933 SH NO. 8

TITLE OVER TEMPERATURE PROTECTION TEST INSTRUCTIONS

FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

GENERAL ELECTRIC

CONT ON SHEET 9 68A944933 SH NO. 8

GENERAL ELECTRIC

68A944933 CONT ON SHEET FL. SH NO. 9

REV NO. A

68A944933 CONT ON SHEET FL. SH NO. 9

TITLE

OVER TEMPERATURE PROTECTION
TEST INSTRUCTIONS
FIRST MADE FOR IC3600SOTJ1 SPEEDTRONIC

REVISIONS

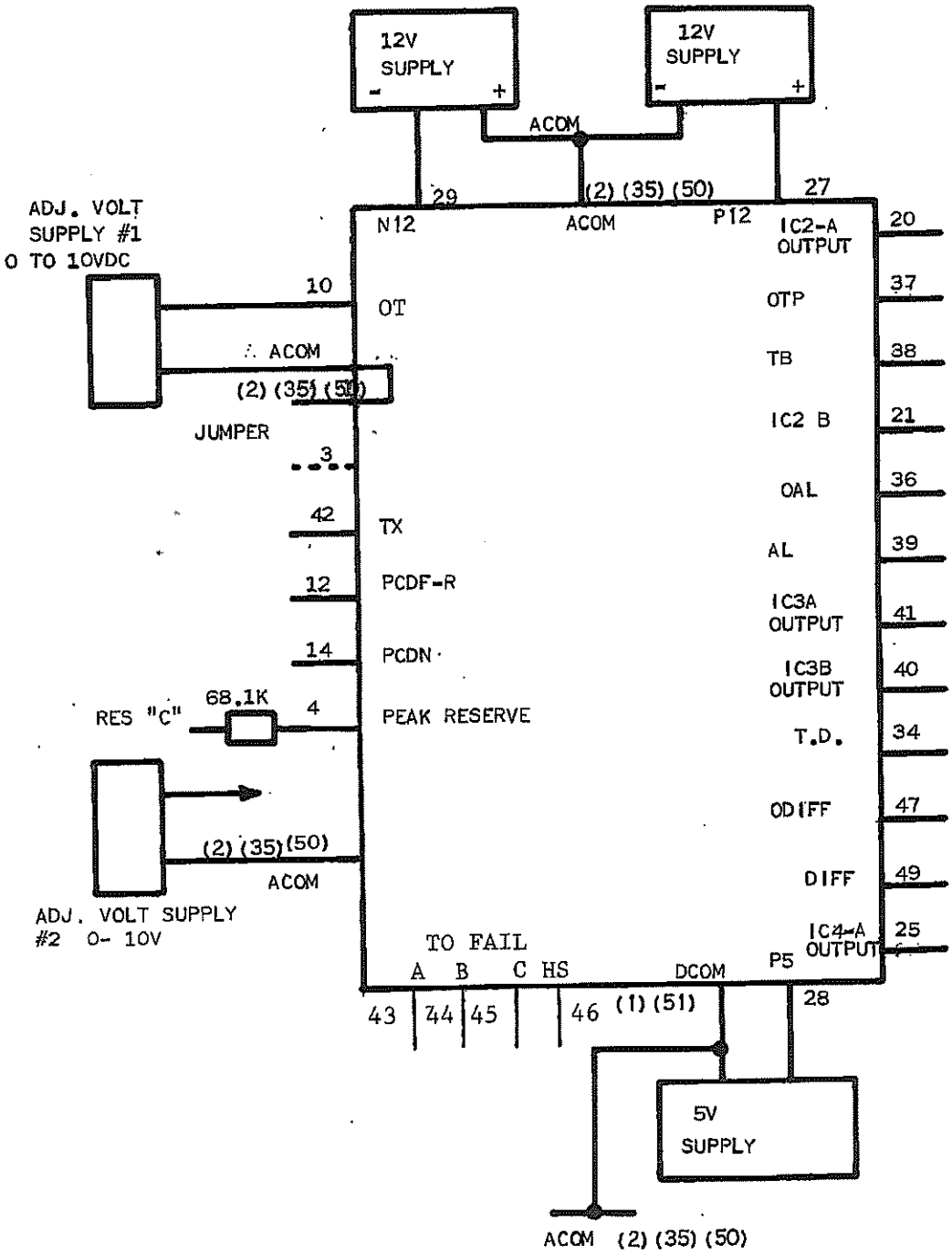

FIGURE 1

1) BU945XC CGL 11/07/78

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MADE BY	APPROVALS	DIV OR DEPT.	68A944933
JOHN TURNER		DRIVE SYSTEMS	
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