278A3077 TEST INSTRUCTIONS

I. SCOPE

THE FOLLOWING DESCRIBES THE SETUP AND TEST PROCEDURE FOR THE T.S.I.TRIP AND LOW OUTPUT VOLTAGE ALARM PWB 1589K42G700.
REF ELEM: D3061K12
REF ASM: 44B337392

II. SPECIAL TEST EQUIPMENT

NONE

III. POWER SUPPLY REQUIREMENTS

SUPPLY	NOM.	TOL.	PINS
+15V	+15.00V	+/- .01V	B [1]
-15V	-15.00V	+/- .01V	U [5]
COM (+15V,-15V COM)			N [3]

IV. INITIAL SETUP

A. DAUGHTER BOARD SETUP (NONE)

B. TEST SETUP DESCRIPTION
   1. SET R148 FULLY CCW

V. TEST DEFINITIONS AND SPECIAL NOTES

1. ALL VOLTAGES ARE POSITIVE (+) DC VOLTAGES UNLESS OTHERWISE SPECIFIED.

2. ALL INPUTS AND OUTPUT MEASUREMENTS ARE WITH RESPECT TO COM [3] UNLESS OTHERWISE SPECIFIED. J404 (BLACK) IS ALSO COM.

VI. TEST PROCEDURE

1. SET UP AND APPLY POWER PER SECTIONS III. AND IV.

2. VERIFY 0 OHMS FROM E [7] TO T [18] AND ALSO FROM H [9] TO L [12].

3. CONNECT R [16] TO +15V [1] AND VERIFY EACH OF THE FOLLOWING VOLTAGES.

POINT	VOLTAGE
J403 (ORANGE)	11.5 +/- .3V
J407 (BROWN)	15.0 +/- .2V
J409 (BLUE)	.25 +/- .05V
J406 (GRAY)	3.7 +/- .2V
J408 (WHITE)	2.1 +/- .2V
CR401 ANODE	-8.20 +/- .41V

4. VERIFY THAT THE VOLTAGE AT M [13] WITH RESPECT TO P [15] IS EQUAL TO OR GREATER THAT 7.5VDC. THEN CONNECT A 1K RESISTOR FROM M [13]

TO N [3] AND VERIFY THE VOLTAGE AT M [13] WITH RESPECT TO P [15] IS 7.5 +/- .4V

5. CONNECT A VARIABLE DC POWER SUPPLY (PS1) AT V [20] AND BEGINNING AT 0V INCREASE PS1 IN THE POSITIVE DIRECTION UNTIL C [4] TO T [18] GOES FROM 0 OHMS TO OPEN. AT THAT POINT, PS1 INPUT SHOULD BE 7.3 +/- .2V. (RECORD THIS PS1 MEASUREMENT FOR LATER USE.) ALSO, E [7] TO T [18] SHOULD NOW READ 0 OHMS.

6. INCREASE PS1 TO 9.5 +/- .5V

7. LOWER PS1 UNTIL C [4] TO T [18] GOES FROM OPEN TO 0 OHMS. AT THAT POINT PS1 INPUT SHOULD BE WITHIN .3V OF THAT RECORDED IN STEP 5. ALSO, E [7] TO T [18] SHOULD NOW READ OPEN.

8. REDUCE PS1 TO 0V AND CHANGE PS1 INPUT FROM V [20] TO A [2].

9. BEGINNING AT 0V INCREASE PS1 IN THE POSITIVE DIRECTION UNTIL E [7] TO T [18] GOES FROM 0 OHMS TO OPEN. AT THAT POINT, PS1 INPUT BE 7.0 +/- .2V. (RECORD THIS PS1 MEASUREMENT FOR LATER USE.)

10. INCREASE PS1 TO 9.5 +/- .5V.

11. LOWER PS1 UNTIL E [7] TO T [18] GOES FROM OPEN TO 0 OHMS. AT THAT POINT PS1 INPUT SHOULD BE WITHIN .5V OF THAT RECORDED IN STEP 9.

12. REDUCE PS1 TO 0V AND REMOVE PS1 INPUT FROM A [2]. THEN CONNECT PS1 THROUGH A SWITCH (TSW) TO K [11].

13. BEGINNING AT 0V AND WITH TSW CLOSED, INCREASE PS1 IN THE POSITIVE DIRECTION UNTIL H [9] TO L [12] GOES FROM OPEN TO 0 OHMS. AT THIS POINT, PS1 INPUT SHOULD BE .5 +/- .1V. ALSO VERIFY THAT J [10] TO L [12] MEASURES OPEN.

14. CONNECT AN OSCILLOSCOPE TO J409 (BLUE). ADJUST PS1 FOR .700 +/- .005V AND THEN SLOWLY ADJUST R418 IN THE CW DIRECTION UNTIL H [9] TO L [12] GOES FROM 0 OHMS TO OPEN. ALSO VERIFY THAT J [10] TO L [12] MEASURES 0 OHMS. NOTE: DUE TO THE LAG BETWEEN POT ADJUSTMENT AND VOLTAGE CHANGE, THE OSCILLOSCOPE IS HELPFUL IN DETERMINING THE ACTUAL SWITCHING THRESHOLD.

15. ADJUST PS1 TO 2.00 +/- .25V. AT THAT POINT, J [10] TO L [12] SHOULD MEASURE OPEN AND H [9] TO L [12] MEASURES 0 OHMS.

16. SLOWLY LOWER PS1 INPUT UNTIL H [9] TO L [12] CHANGES FROM 0 OHMS TO OPEN. AT THAT POINT THE PS1 INPUT SHOULD BE .70 +/- .05V. READJUST ~~R148~~ R418 IF NECESSARY TO MEET THIS LIMIT. ALSO VERIFY THAT J [10] TO L [12] MEASURES 0 OHMS. NOTE: USE OSCILLOSCOPE THE SAME AS IN STEP 14.

17. ADJUST PS1 INPUT TO .500 +/- .005V AND OPEN SWITCH TSW.

18. CONNECT THE OSCILLOSCOPE TO J409 (BLUE) (CR407)A AND THEN CLOSE TSW WHILE OBSERVING THE DC RATE OF RISE ON THE OSCILLOSCOPE. FROM THE TIME TSW IS CLOSED UNTIL J409 OUTPUT REACHES A STEADY STATE OUTPUT OF 15.0 +/- .1V SHOULD BE 1.0 +/- .5 SECONDS.

19. RETURN PS1 TO 0V AND REMOVE ALL POWER.

20. VERIFY BY INSPECTION OR MEASUREMENT THAT THE FOLLOWING COMPONENTS ARE CORRECT.

R425	30 OHMS, 3W
R426, R427	100 OHMS
C404, C405	.47 MFD, 600V

C406, C407 .22 MFD, 400V

END OF TEST

REV	INIT	DESCRIPTION OF CHANGE	DATE COMPLETE
0	REV	First made for 1589K42G700	11/30/83
1	REV	Misc corrections per test marks	08/17/84

A - 33

B - 34

C - 35

D - 36

E - 37

H 39

J - 40

K 41

L - 42

M - 43

N - 44

P - 45

R - 46

S - 47

T - 48

U - 49

V - 50