REV NO. A

68A999530

CONT ON SHEET 2 SH NO. 1

TITLE
TEST INSTRUCTIONS FOR PWB68A999529 REGULATOR CARD
FOR DC/DC CONVERTER FOR ± 50V 300 MA POWER SUPPLY

FIRST MADE FOR PWB 68A999529 AND IC3601A209

REVISIONS

REFER TO PWB68A999528 AND PWB68A999529 CIRCUITS

SPECIFIC TESTS

A. TEST TO BE MADE

1. COMPONENT CHECK, Q.C. WIRING AND INSPECTION CHECK
2. VOLTAGE ADJUSTMENT CHECK
3. LOAD REGULATION, RIPPLE
4. LINE REGULATION
5. SHORT CIRCUIT TEST, + 50V TO - 50V TEST

B. TEST CONNECTIONS

CONNECT IC3601A209 DC/DC CONVERTER TO A IC3601A207 AC/DC CONVERTER PER FIG. 1. MONITOR POWER SUPPLY OUTPUT TERMINALS WITH A DIFFERENTIAL VOLTMETER AND AN OSCILLOSCOPE. CONNECT TWO VARIABLE 0 TO 500 MA LOADS FROM +50 TO COM. AND FROM -50 TO COM. PLUG PWB68A999529 CARD TO BE TESTED IN DC TO DC CONVERTER SET LOADS FOR MINIMUM CURRENT.

C. VOLTAGE ADJUSTMENT RANGE

1. SET POTS R1, R2 AND R3 IN FULL C.W. POSITION. SET POTS, R14, R19 FULL CCW.
2. SUPPLY 115 VOLT, 60 HZ, A.C.POWER AND ADJUST OUTPUT LOADS ON +50V AND -50V SUPPLIES TO ABOUT 150 MA.
3. SET POT R19 SO THAT P50 VOLT IS 50 VOLTS ±20 MV.
4. SET POT R14 SO THAT N50 VOLTS IS -50 VOLT ±20 MV. NOTE THAT BOTH SUPPLYS ARE NOW

NOTE: DUE TO SLAVE NATURE OF N50 VOLT CIRCUIT, MUST ALWAYS SET P50 BEFORE SET N50V.

D. LOAD REGULATION AND RIPPLE

1. WITH SCOPE ON P50 VOLT OUTPUT, TRIGGER ON +SWO, PIN 8 OF PWB68A999528 VERIFY THAT RIPPLE IS LESS THAN 50 MV.P.P. AS LOAD IS VARIED FROM 0 TO 300 MA. VERIFY THAT RIPPLE FREQUENCY IS APPROXIMATELY 1.5 TO 3 KH_Z
2. AS VARY P50V LOAD FROM 0 TO 300 MA, VERIFY THAT P50V CHANGES LESS THAN 25 MV. ON DIFFERENTIAL VOLTMETER. LEAVE P50 VOLT SUPPLY WITH 150 MA. LOAD.
3. WITH SCOPE ON N50 VOLT OUTPUT, TRIGGER ON -SWO PIN 4 OF PWB68A999528 CARD. VERIFY THAT RIPPLE IS LESS THAN 50 MV. P.P. LOAD IS VARIED FROM 0 TO 300 MA. VERIFY THAT RIPPLE FREQUENCY 1.5 TO 3 KH_Z.

1338

P6A

PRINTS TO

MADE BY K. C. COX

ISSUED 10-5-70

APPROVALS

INDUSTRY CONTROL DIV OR DEPT.

SALEM, VIRGINIA LOCATION

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D. (CON'D)

4. VARY N50 VOLT LOAD FROM 0 TO 300 MA, VERIFY THAT N50 VOLT CHANGES LESS THAN 25 MV. ON D.C. DIFFERENTIAL VOLTMETER. LEAVE N50 VOLT SUPPLY WITH 150 MA. LOAD.

E. LINE REGULATION

1. SET P50V AND N50V TO 50 VOLT ± 20MV. WITH 300 MA LOAD.
2. VARY AC INPUT VOLTAGE ± 10%. VERIFY THAT OUTPUT VOLTAGES CHANGES LESS THAN ±50 MV TOTAL AS AC VOLTAGE IS VARIED. NOTE THAT N50V TRACKS THE REGULATION OF P50 VOLT APPROXIMATELY.

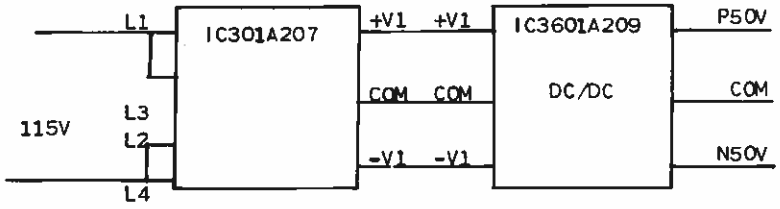
F. CURRENT LIMIT ADJUSTMENT

1. POT R1, AND R2 SETS THE POINT AT WHICH TRIP CURRENT LIMIT. POT R3 SETS THE VALUE OF CURRENT TO WHICH DROP BACK TO WHEN CIRCUIT GOES INTO CURRENT LIMIT.
2. SET BOTH SUPPLIES FOR 50.0 VOLTS ±20MV AT 150 MA. LOAD. SET P50V, THEN SET N50V, IN THAT ORDER. SET R3 FULL CW.
3. NOW INCREASE LOAD CURRENT ON P50 VOLT SUPPLY UNTIL IT IS 400 MA. ADJUST POT R1 C.C.W. TILL JUST TRIP CURRENT LIMIT. WHEN THIS OCCURS, OUTPUT CURRENT SHOULD DROP TO LOW VALUE. NOW ADJUST POT R3 C.C.W. UNTIL CURRENT COMES BACK TO 380 MA. REDUCE LOAD CURRENT BACK TO 150 MA. P50 VOLT SUPPLY SHOULD READ P50.0 VOLT ±20MV.
4. NOW INCREASE LOAD CURRENT ON N50 VOLT SUPPLY UNTIL IT IS 400 MA. ADJUST POT R2 C.C.W. TILL JUST TRIP CURRENT LIMIT AND 10 DROPS TO APPROXIMATELY 350-380 MA. REDUCE CURRENT BACK TO 150 MA. N50 VOLT SUPPLY SHOULD READ N50.0 VOLT ±20MV.
5. WITH D.C. VOLTMETER FROM $+V_1$ TO COM. INCREASE LOAD ON P50 VOLT SUPPLY. VERIFY THAT ENTER CURRENT LIMIT AT 400 MA. AS INCREASE LOAD FURTHER VERIFY THAT +V1 GOES UP IN VOLTAGE AND P50V GOES DOWN. 10 SHOULD INCREASE TO ABOUT 800 MA AT SHORT CIRCUIT. REDUCE LOAD BACK TO 300 MA AND VERIFY THAT CIRCUIT IS NO LONGER IN CURRENT LIMIT. POWER SUPPLY VO SHOULD BE 50V ±30MV
6. WITH D.C. VOLTMETER FROM $-V_1$ TO COM. INCREASES LOAD ON N50 VOLT SUPPLY. VERIFY THAT ENTER CURRENT LIMIT AT 400MA APPROX. AS LOAD IS INCREASED $-V_1$ GOES UP IN VOLTAGE, N50 VOLT GOES DOWN. 10 AT SHORT CIRCUIT SHOULD BE APPROXIMATELY 800 MA. REDUCE LOAD BACK TO 300 MA AND VERFIY THAT BOTH P50V AND N50V RECOVER AND REGULATE NORMALLY. SEAL POTS R1, R2 AND R3.

1338
P6A

G. SHORT CIRCUIT TEST

1. WITH P50V AND N50 SUPPLIES SET AT 300 MA LOAD AND REGULATING PROPERLY,
   (A) TURN P50V LOAD POT TO MIN. OHMS, SHORT CKT. POSITION. AND BACK TO NORMAL LOAD POS, VERIFY THAT SUPPLY RECOVERS AND REGULATES



WIRE SIZE NO 18 OR LARGER

(B) REPEAT ABOVE WITH N50V. LOAD POT.

(C) REPEAT ABOVE USING BOTH LOAD POTS SIMULTANEOUSLY.

FIGURE 1

IF FUSE IN(-) 50V BLOWS ON SHORT CIRCUIT TEST, REPEAT TEST USING 3/4 A FUSE. IF TEST IS SATISFACTORY USING 3/4 A FUSE, CIRCUIT IS OK. REMOVE 3/4 A FUSE AND REPLACE 1/2 A FUSE.

1338
P6A

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