SHEET INDEX

CIRCUIT NOTES:

101.

DESIG	FUSE AMP.	POTENTIAL	ONE PER	TERM DESIG

BATTERY SYMBOL -48

VOLTAGE RANGE 45-52V

BATTERY & GROUND TO BE FURNISHED BY CONNECTING CIRCUIT

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY
VOLTAGE REDUCTION DETECTOR	1		1 PER 5 VOLTAGE DIVIDER NETWORKS

CIRCUIT NOTES: (CONTINUED)

103.

NETWORK VALUES			
NETWORK		RESISTANCE IN OHMS	CAPACITANCE IN UF
NO.	CODE		

104.

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISS.	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT			
				STD	A&M	MD	

INFORMATION NOTES:

301. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS. VALUES PRECEEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.

302. CALCULATION OF EXTERNAL RESISTANCE FOR CP1 WHEN USED WITH -48 V BATTERY, FOR DESIRED ON-OFF OPERATION OF THE TRANSISTOR Q.

OFF CONDITION

TO BE SURE OF HAVING THE TRANSISTOR IN THE OFF CONDITION, THE RATIO OF R2 TO R3 UNDER NOMINAL CONDITIONS MUST BE AS FOLLOWS:

$$\frac{R2}{R3} < 12$$

ON CONDITION

TO BE SURE OF HAVING THE TRANSISTOR IN CONDUCTION AND HAVING I_R LARGE ENOUGH TO OPERATE RELAY R UNDER NOMINAL CONDITIONS, RT MUST BE DEFINED BY:

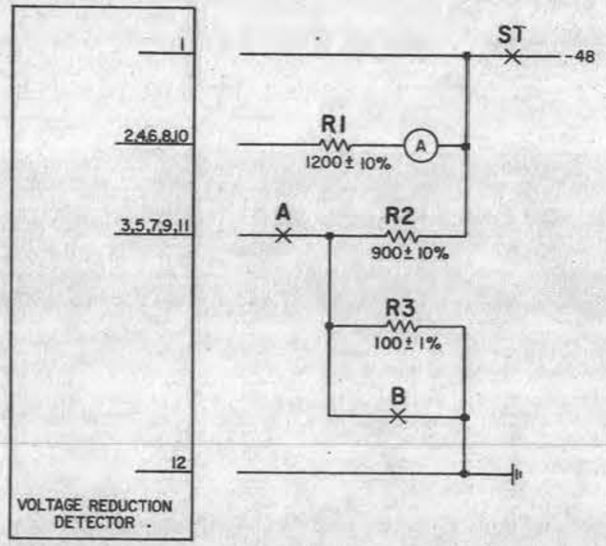
$$RT \leq \frac{0.8}{I_R + I_{R2} + I_B}$$

WHERE $RT = \frac{R3R4}{R3+R4}$; $I_R = \frac{48}{R}$; $I_B = \frac{I_R}{24}$

I_{R2} = CURRENT THRU R2

303. THE TEST PREPARATION FOR THE CIRCUIT CP1 SHOWN IN FS1 IS AS FOLLOWS:

A. KEY ST OPERATED: AMMETER READS 0 MA.
B. KEYS ST & A OPERATED: AMMETER READS 0 MA.
C. KEYS ST, A, & B OPERATED: AMMETER READS ≥ 30 MA.



SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWINGS FOR CPS1	ED-5E009-30

DWG ISSUE	EE OR CD ISSUE	DATE ISSUED	DRAWN	APPD
1	1	9-15-67	JJR PJS RCL	JJM LAH RHP
2D	1 APP 1D	1-9-68	WGN RCL	JJM LAH RHP
3D	1 APPX 2D	2-26-74	GDE CBH	WVS RVL AFR

H.W.

ISSUE 3D

SD-5E037-01 3J07

PBX SYSTEMS
VOLTAGE REDUCTION DETECTOR
AT MIDPOINT OF VOLTAGE DIVIDER
NETWORK

(VRD)

MFR DISC.

SD-5E037-01-1

3 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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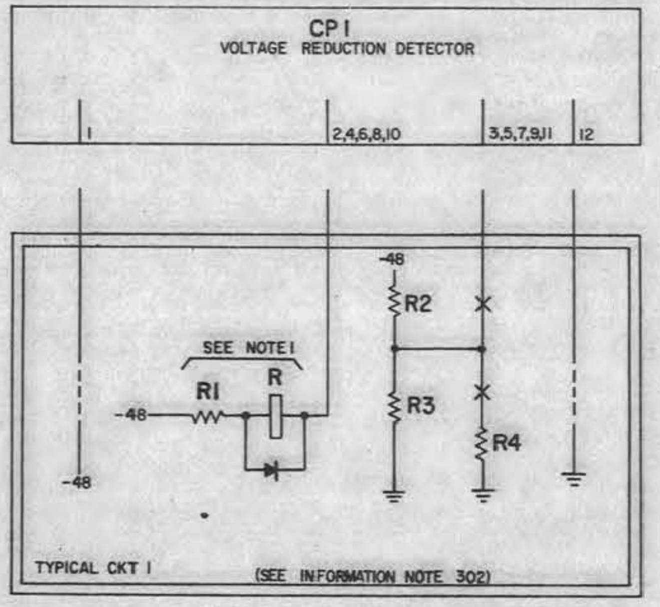
FS 1
VOLTAGE REDUCTION DETECTOR CKT



DRAWING ISSUE	
1	JJR PJS RHF
2D	WGI RHF

H.W.

A DR

NOTES:
1. TOTAL LOAD RESISTANCE SHOULD NOT BE LESS THAN 700 OHMS.

ISSUE
3D

DR
H

VOLTAGE REDUCTION DETECTOR

SD-5E037-01-2

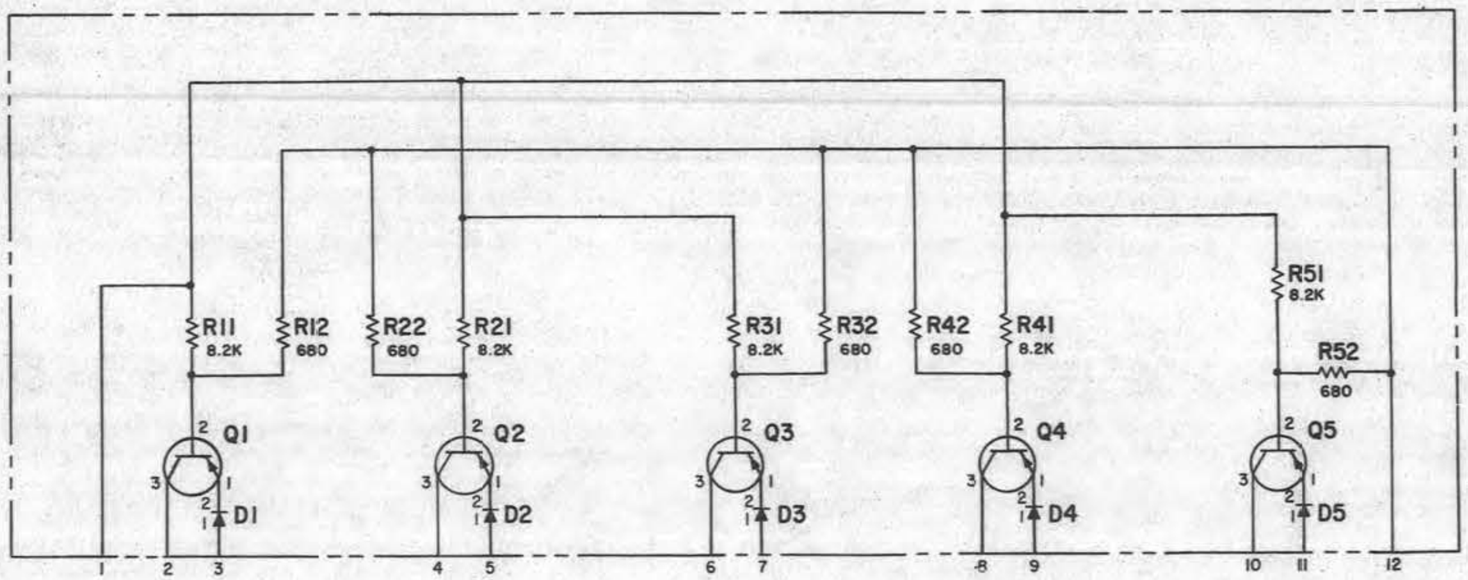
BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.

CPS I

VOLTAGE REDUCTION DETECTOR



RESISTOR

DESIG	CODE
R11	KS-13490, L1 8.2K
R12	KS-13490, L1 680
R21	KS-13490, L1 8.2K
R22	KS-13490, L1 680
R31	KS-13490, L1 8.2K
R32	KS-13490, L1 680
R41	KS-13490, L1 8.2K
R42	KS-13490, L1 680
R51	KS-13490, L1 8.2K
R52	KS-13490, L1 680

TRANSISTOR

DESIG	CODE
Q1	12N
Q2	12N
Q3	12N
Q4	12N
Q5	12N

DIODE

DESIG	CODE
D1	446A
D2	446A
D3	446A
D4	446A
D5	446A

DRAWING ISSUE
1
2D

ISSUE
3D

VOLTAGE REDUCTION DETECTOR

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE 6S

SD-5E037-01-3

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