

SHEET INDEX

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SYMBOL

| SYMBOL | FC193 | NODE SELECT | ELEMENT IDENT |
|--------|-------|-------------|---------------|
| 002    | I1    | 01          | 300           |
| 102    | I2    | 02          | 201           |
| 003    | I3    | 03          | 301           |
| 103    | I4    | 04          | 202           |
| 004    | I5    | 05          | 302           |
| 104    | I6    | 06          | 203           |
| 005    | I7    | 07          | 204           |
| 105    | I8    | 08          | 303           |
| 006    | I9    | 09          | 205           |
| 106    | I10   | 10          | 304           |
| 007    | I11   | 11          | 305           |
| 107    | I12   | 12          | 306           |
| 008    | I13   | 13          | 207           |
| 108    | I14   | 14          | 307           |
| 009    | I15   | 15          | 208           |
| 109    | I16   | 16          | 308           |
| 010    | I17   | 17          | 007           |
| 110    | I18   | 18          | 314           |
| 011    | I19   | 19          | 211           |
| 111    | I20   | 20          | 312           |
| 012    | I21   | 21          | 310           |
| 112    | I22   | 22          | 210           |
| 013    | I23   | 23          | 215           |
| 113    | I24   | 24          | 313           |
| 014    | I25   | 25          | 212           |
| 114    | I26   | 26          | 214           |
| 015    | I27   | 27          | 113           |
| 115    | I28   | 28          | G3            |
| 016    | I29   | 29          | 209           |
| 116    | I30   | 30          | 309           |
| 017    | I31   | 31          | 315           |
| 117    | I32   | 32          | 318           |
| 018    | I33   | 33          | 316           |
| 118    | I34   | 34          | 216           |
| 019    | I35   | 35          | 308           |
| 119    | I36   | 36          | 308           |
| 020    | I37   | 37          | 316           |
| 120    | I38   | 38          | 308           |
| 021    | I39   | 39          | 316           |
| 121    | I40   | 40          | 308           |
| 022    | I41   | 41          | 316           |
| 122    | I42   | 42          | 308           |
| 023    | I43   | 43          | 316           |
| 123    | I44   | 44          | 308           |
| 024    | I45   | 45          | 316           |
| 124    | I46   | 46          | 308           |
| 025    | I47   | 47          | 316           |
| 125    | I48   | 48          | 308           |
| 026    | I49   | 49          | 316           |
| 126    | I50   | 50          | 308           |
| 027    | I51   | 51          | 316           |
| 127    | I52   | 52          | 308           |
| 028    | I53   | 53          | 316           |
| 128    | I54   | 54          | 308           |
| 029    | I55   | 55          | 316           |
| 129    | I56   | 56          | 308           |
| 030    | I57   | 57          | 316           |
| 130    | I58   | 58          | 308           |
| 031    | I59   | 59          | 316           |
| 131    | I60   | 60          | 308           |
| 032    | I61   | 61          | 316           |
| 132    | I62   | 62          | 308           |
| 033    | I63   | 63          | 316           |
| 133    | I64   | 64          | 308           |
| 034    | I65   | 65          | 316           |
| 134    | I66   | 66          | 308           |
| 035    | I67   | 67          | 316           |
| 135    | I68   | 68          | 308           |
| 036    | I69   | 69          | 316           |
| 136    | I70   | 70          | 308           |
| 037    | I71   | 71          | 316           |
| 137    | I72   | 72          | 308           |
| 038    | I73   | 73          | 316           |
| 138    | I74   | 74          | 308           |
| 039    | I75   | 75          | 316           |
| 139    | I76   | 76          | 308           |
| 040    | I77   | 77          | 316           |
| 140    | I78   | 78          | 308           |
| 041    | I79   | 79          | 316           |
| 141    | I80   | 80          | 308           |
| 042    | I81   | 81          | 316           |
| 142    | I82   | 82          | 308           |
| 043    | I83   | 83          | 316           |
| 143    | I84   | 84          | 308           |
| 044    | I85   | 85          | 316           |
| 144    | I86   | 86          | 308           |
| 045    | I87   | 87          | 316           |
| 145    | I88   | 88          | 308           |
| 046    | I89   | 89          | 316           |
| 146    | I90   | 90          | 308           |
| 047    | I91   | 91          | 316           |
| 147    | I92   | 92          | 308           |
| 048    | I93   | 93          | 316           |
| 148    | I94   | 94          | 308           |
| 049    | I95   | 95          | 316           |
| 149    | I96   | 96          | 308           |
| 050    | I97   | 97          | 316           |
| 150    | I98   | 98          | 308           |
| 051    | I99   | 99          | 316           |
| 151    | I100  | 100         | 308           |

| RECORD OF CHANGES |           |     |          |          |
|-------------------|-----------|-----|----------|----------|
| DWG ISS           | PREV FURN | STD | MFR DISC | SEE NOTE |
|                   |           |     |          |          |
|                   |           |     |          |          |
|                   |           |     |          |          |
|                   |           |     |          |          |

CIRCUIT DESCRIPTION  
FUNCTION

THIS CIRCUIT PROVIDES A VERY LOW IMPEDANCE ON OUTPUT LEADS 01-34 UPON RECEIPT OF A 12 VOLT SIGNAL ON INPUT LEADS I1-34 AND PROVIDES A VERY HIGH IMPEDANCE UP TO 190 VOLTS WITH ESSENTIALLY ZERO CURRENT IN OUTPUT.

DETAILED DESCRIPTION

APPLICATION OF A TWELVE VOLT SIGNAL TO AN INPUT LEAD AND GROUNDING THE G1 AND G2 LEAD WILL TURN ON THE ASSOCIATED PNP DEVICE. UPON REMOVAL OF INPUT SIGNAL THE DEVICE REMAINS ON UNTIL THE COLLECTOR CURRENT IS REDUCED TO ZERO.

NOTES:

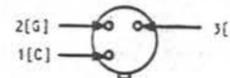
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.

2. POWER AND GROUND TERMINALS FOR INTEGRATED CIRCUITS:

| IC CODE | GRD TERM. |  |  |  |
|---------|-----------|--|--|--|
|         |           |  |  |  |
|         |           |  |  |  |
|         |           |  |  |  |
|         |           |  |  |  |
|         |           |  |  |  |

3. BATTERY AND GROUND TERMINALS FOR THIS CIRCUIT PACK ARE AS FOLLOWS:

FUNCTION TERMINAL



4. THE TERMINAL NUMBER ARRANGEMENT OF THE 27A TRANSISTOR IS

5. HORIZONTAL MOUNTING CENTERS AT 0.50 INCH.

6. INITIAL USE OF THE FC193 CIRCUIT PACK IS IN SD-3H110-01.

| SYSTEM USED UN | DESIGN CONTROL |
|----------------|----------------|
| NO. 3 ESS      | DH             |

CURRENT DRAIN: 0 mA

SYMBOL  
NODE SELECT  
ELEMENT IDENT  
A

| TERM. MOD. | FUNCT | TERM. | LOC | TERM. MOD. | FUNCT | TERM. | LOC |
|------------|-------|-------|-----|------------|-------|-------|-----|
| I1         | I     | 002   | 2B2 | 07         | 0     | 204   | 2E5 |
| I2         | I     | 102   | 2C2 | 08         | 0     | 303   | 2F5 |
| I3         | I     | 003   | 2C2 | 09         | 0     | 205   | 2A9 |
| I4         | I     | 103   | 2D2 | 010        | 0     | 304   | 2B9 |
| I5         | I     | 004   | 202 | 011        | 0     | 305   | 2B9 |
| I6         | I     | 104   | 2E2 | 012        | 0     | 306   | 2C9 |
| I7         | I     | 105   | 2E2 | 013        | 0     | 207   | 2C9 |
| I8         | I     | 005   | 2F2 | 014        | 0     | 307   | 2D9 |
| I9         | I     | 106   | 2A7 | 015        | 0     | 208   | 2D9 |
| I10        | I     | 006   | 2B7 | 016        | 0     | 308   | 2E9 |
| I11        | I     | 206   | 2B7 | 017        | 0     | 314   | 3A4 |
| I12        | I     | 107   | 2C7 | 018        | 0     | 211   | 3C4 |
| I13        | I     | 008   | 2C7 | 019        | 0     | 312   | 3C4 |
| I14        | I     | 108   | 2D7 | 020        | 0     | 310   | 3D4 |
| I15        | I     | 009   | 2D7 | 021        | 0     | 210   | 3D4 |
| I16        | I     | 109   | 2E7 | 022        | 0     | 215   | 3E4 |
| I17        | I     | 015   | 3B1 | 023        | 0     | 313   | 3E4 |
| I18        | I     | 112   | 3C1 | 024        | 0     | 212   | 3F4 |
| I19        | I     | 012   | 3C1 | 025        | 0     | 214   | 3F4 |
| I20        | I     | 111   | 3D1 | 026        | 0     | 209   | 3A8 |
| I21        | I     | 011   | 3D1 | 027        | 0     | 309   | 3B8 |
| I22        | I     | 115   | 3E1 | 028        | 0     | 315   | 3B8 |
| I23        | I     | 213   | 3E1 | 029        | 0     | 318   | 3C8 |
| I24        | I     | 311   | 3F1 | 030        | 0     | 219   | 3C8 |
| I25        | I     | 114   | 3F1 | 031        | 0     | 317   | 3D8 |
| I26        | I     | 010   | 3A5 | 032        | 0     | 217   | 3D8 |
| I27        | I     | 110   | 3A5 | 033        | 0     | 316   | 3E8 |
| I28        | I     | 016   | 3B5 | 034        | 0     | 216   | 3E8 |
| I29        | I     | 218   | 3C5 |            |       |       |     |
| I30        | I     | 118   | 3C5 |            |       |       |     |
| I31        | I     | 018   | 3D5 |            |       |       |     |
| I32        | I     | 117   | 3D5 |            |       |       |     |
| I33        | I     | 017   | 3E5 |            |       |       |     |
| I34        | I     | 116   | 3E5 |            |       |       |     |
| G1         | 0     | 001   | 2F5 |            |       |       |     |
| G2         | 0     | 007   | 2E9 |            |       |       |     |
| G3         | 0     | 113   | 3F4 |            |       |       |     |
| G4         | 0     | 019   | 3F8 |            |       |       |     |
| 01         | 0     | 300   | 2A5 |            |       |       |     |
| 02         | 0     | 201   | 2C5 |            |       |       |     |
| 03         | 0     | 301   | 2C5 |            |       |       |     |
| 04         | 0     | 202   | 2D5 |            |       |       |     |
| 05         | 0     | 302   | 2D5 |            |       |       |     |
| 06         | 0     | 203   | 2E5 |            |       |       |     |

SHEET INDEX NOTES

- FOR SINGLE REISSUES, A CHANGED OR NEW SHEET WILL BE ASSIGNED THE SAME ISSUE NUMBER AS SHEET 1.
- FOR CONCURRENT REISSUES, A CHANGED OR NEW SHEET WILL BE ASSIGNED THE HIGHEST ISSUE NUMBER AFFECTING THAT SHEET.
- THE ISSUE NUMBER OF SHEET 1 IS RECOGNIZED AS THE ISSUE NUMBER OF THE WHOLE DRAWING.

SUPPORTING INFORMATION

| CATEGORY                           | NUMBER              |
|------------------------------------|---------------------|
| CONNECTOR ON FRAME                 | 947A, 947C, OR 947E |
| CIRCUIT PACK INFORMATION DRAWING   |                     |
| SERIES FOR LATEST CLASS "A" CHANGE |                     |
| ACCEPTABLE SERIES                  | 2                   |

NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.

|                     |                |
|---------------------|----------------|
| FC193 CIRCUIT PACK  | 1711           |
| NODE SELECT CIRCUIT | AT&CO STANDARD |
| DWG SIZE            | ISSUE          |
| 6S                  | 2D1            |
| BELL LABORATORIES   | CPS-FC193      |
| 3 SHEETS            |                |

NODE SELECT CIRCUIT

COMPONENT LIST

DIODE

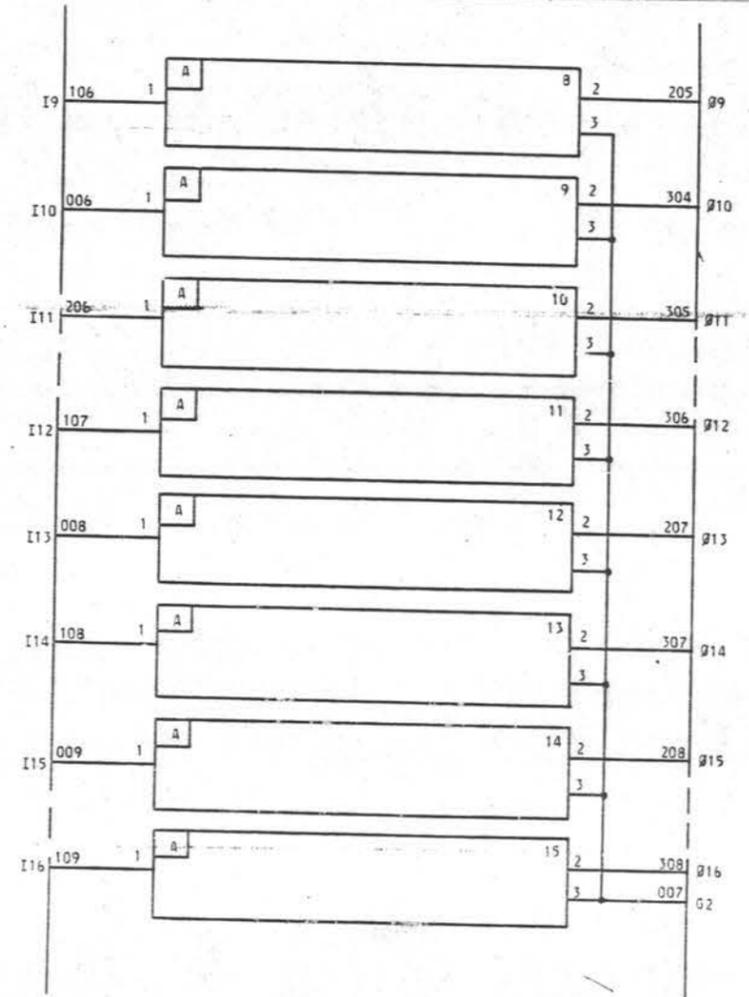
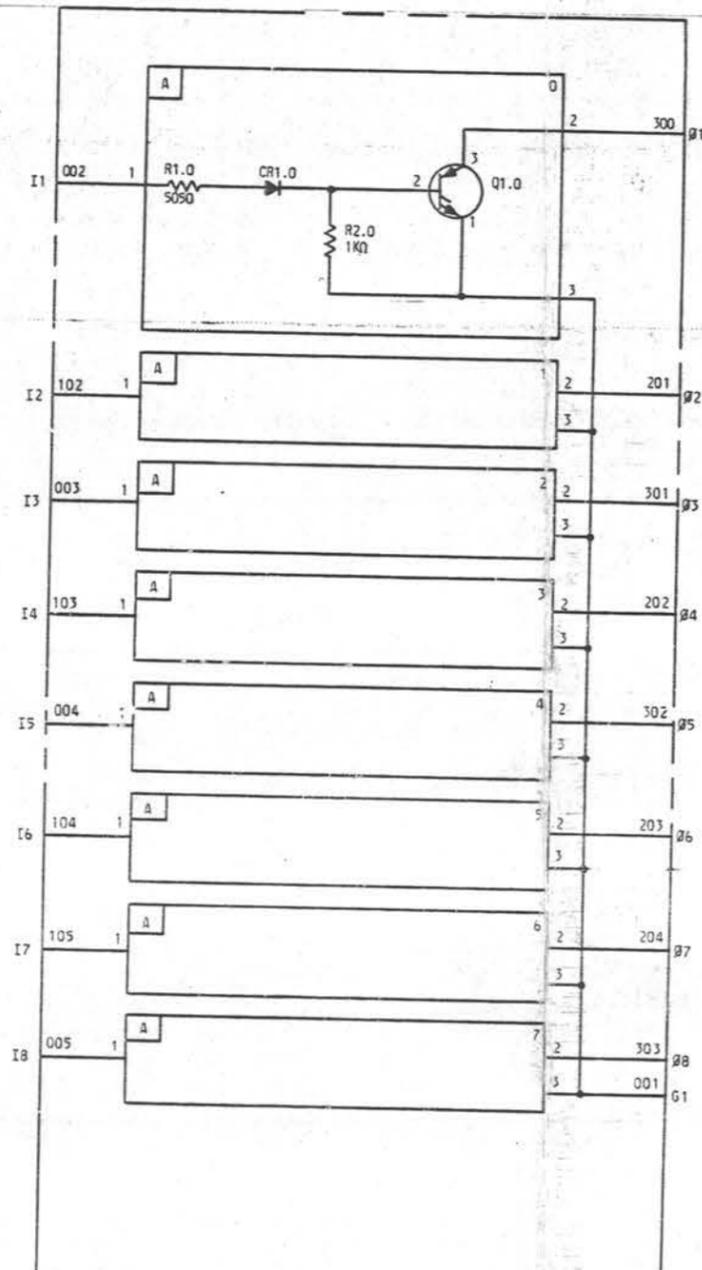
DESIG [34] CR1.0 - CR1.33 CODE 456B

RESISTOR

DESIG [34] R1.0 - R1.33 [34] R2.0 - R2.33 CODE KS - 20616, L1A, 5050 KS - 20616, L1A, 1KΩ

TRANSISTOR

DESIG [34] Q1.0 - Q1.33 CODE 27A



ISSUE 201

NODE SELECT CIRCUIT

