

## TYPE ULN-2274B, ULN-2274P, ULN-2275P, ULN-2278B, and ULN-2278P DUAL AUDIO AMPLIFIERS★

These dual audio amplifiers are linear monolithic integrated circuits designed primarily for low-cost audio amplifiers in phonograph and radio applications. They are also ideally suited for industrial applications requiring high power output and reliable performance.

- Low Distortion
- Low Quiescent Current
- Self Centering Bias
- High Input Impedance
- High Open Loop Gain
- High Peak Output Current
- High Channel Separation
- Internal Compensation Network
- Minimum External Components
- Operating Temperature Range:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Plastic Package  
14-pin Dual In-Line B  
8-pin + 2-tabs Dual In-Line P

| Type Number | Power Rating per Channel (Watts) RMS | $V_{CC}$ (Volts) |      | $R_L$ (ohms) | Thermal Shut-down |
|-------------|--------------------------------------|------------------|------|--------------|-------------------|
|             |                                      | Nom.             | Max. |              |                   |
| ULN-2274    | 1                                    | 9                | 20   | 8-16         | Yes <sup>Ⓢ</sup>  |
| ULN-2275    | 1                                    | 9                | 20   | 8-16         | No                |
| ULN-2278    | 2                                    | 9                | 22   | 8-16         | Yes <sup>Ⓢ</sup>  |

<sup>Ⓢ</sup> Also has a-c short-circuit protection

★ Package P (8-pin + 2-tabs) available until present stocks are exhausted.

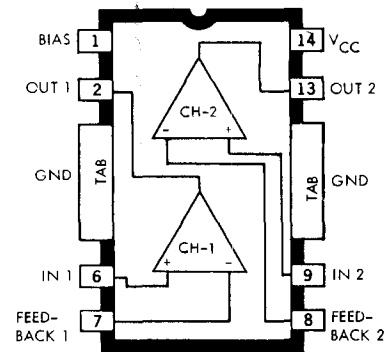


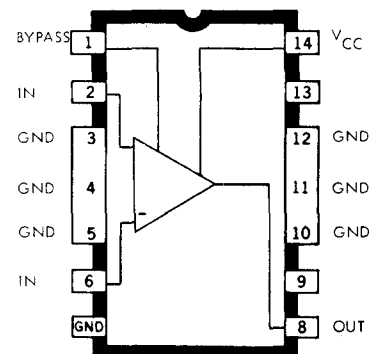
FIG. No. A-9049A

## TYPE ULN-2280B and ULN-2281B AUDIO POWER AMPLIFIERS

These monolithic integrated circuits are designed for minimum external component requirements. They are ideally suited for applications in consumer, automotive, and communications designs. The ULN-2280B is rated for 2 watts max. applications; the ULN-2281B for 4 watt max. applications.

### FEATURES

- Low Distortion
- Low Quiescent Current
- 34 dB Internally Fixed Gain
- High Input Impedance
- Thermal Overload Protection
- Output Short Circuit Current Limiting
- Minimum External Components
- Supply Voltage Range: ULN-2280B, 8-26V; ULN-2281B, 9-32V



- Operating Temperature Range:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- ULN-2280B is replacement for LM380N, ULN-2281B for LM384N
- Webbed Plastic Package (14-pin) Dual In-Line B

# SPRAGUE

## INTEGRATED CIRCUIT CROSS REFERENCE GUIDE O.E.M. TO SPRAGUE

### Original Source CROSS-REFERENCE to SPRAGUE Integrated Circuits

| To Replace                        | Use Sprague Type | To Replace                           | Use Sprague Type | To Replace                               | Use Sprague Type | To Replace                           | Use Sprague Type |
|-----------------------------------|------------------|--------------------------------------|------------------|--|------------------|--------------------------------------|------------------|
| <b>NATIONAL SEMI. MICRO. DIV.</b> |                  | <b>NUCLEONIC PRODUCTS CO. INC.</b>   |                  | <b>SGS-ATES</b>                          |                  | <b>TEXAS INSTRUMENTS Cont.</b>       |                  |
| CA 3045                           | ULN2045H         | NC7401N                              | US8881A          | TDA 1200                                 | ULN2289A         | SN55462JP                            | UDS3612H         |
| CA 3046                           | ULN2046A         | SFC2046E                             | ULN2046A         | L141T1                                   | ULN2151D         | SN55463JP                            | UDS3613H         |
| CA 3054                           | ULN2054A         | SFC2054EC                            | ULN2054A         | T7401B1                                  | US8881A          | SN55464JP                            | UDS3614H         |
| CA 3086                           | ULN2086A         | <b>N V PHILIPS</b>                   |                  | <b>SIEMENS</b>                           |                  | SN55471JP                            | UDS3611H         |
| DM7401N                           | US8881A          | TBA221                               |                  | ULN2151D                                 | SN55472JP        | UDS3612H                             |                  |
| DM7427N                           | US7427A          | TBA221B                              | ULN2151M         | <b>SIGNETICS CORP.</b>                   |                  | SN55473JP                            | UDS3613H         |
| DM7432N                           | US7432A          | <b>PLESSEY SEMICONDUCTORS</b>        |                  | N5065A                                   | ULN2165A         | SN55474JP                            | UDS3614H         |
| DM7437N                           | US7437A          | SL3045                               | ULN2046A         | N5070B                                   | ULN2124A         | SN75451BP                            | UDN3611M         |
| DM7438N                           | US7438A          | SL3046                               | ULN2046A         | N5071A                                   | ULN2127A         | SN75452BP                            | UDN3612M         |
| DS3611N                           | UDN3611M         | SL3086                               | ULN2086A         | N5072A                                   | ULN2114A         | SN75453BP                            | UDN3613M         |
| DS3612N                           | UDN3612M         | SL3145                               | ULN2045H         | N5111A                                   | ULN2111A         | SN75454BP                            | UDN3614M         |
| DS3613N                           | UDN3613M         | <b>PRECISION MONOLITHICS INC.</b>    |                  | N7401A                                   | US8881A          | SN75461P                             | UDN3611M         |
| DS3614N                           | UDN3614M         | DVR-01                               | UHP480           | N7437A                                   | US7437A          | SN75462P                             | UDN3612M         |
| DS7889N*                          | UHP482           | SSS741BJ                             | ULN2151D         | N7438A                                   | US7438A          | SN75463P                             | UDN3613M         |
| DS8885N*                          | UHP481           | <b>RAYTHEON COMPANY</b>              |                  | N8881A                                   | US8881A          | SN75464P                             | UDN3614M         |
| DS8889N*                          | UHP482           | RC741T                               | ULN2151D         | NE546A                                   | ULN2137A         | SN75471P                             | UDN3611M         |
| LM377                             | ULN2278P         | <b>RCA CORP. SOLID STATE DIV.</b>    |                  | PA239                                    | ULN2126A         | SN75472P                             | UDN3612M         |
| LM380                             | ULN2280B         | CA 758E                              | ULN2244A         | UA741CT                                  | ULN2151D         | SN75473P                             | UDN3613M         |
| LM384                             | ULN2281B         | CA 1310E                             | ULN2110A         | UA741CV                                  | ULN2151M         | SN75474P                             | UDN3614M         |
| LM741CH                           | ULN2151D         | CA 1398E                             | ULN2298A         | <b>SILICON GENERAL INC.</b>              |                  | SN76104N                             | ULN2120A         |
| LM741CN                           | ULN2151M         | CA 2111AE                            | ULN2111A         | SG 741CM                                 | ULN2151M         | SN76105N                             | ULN2122A         |
| LM746N                            | ULN2114A         | CA 3014                              | ULN2113A         | SG 741SCM                                | ULN2151M         | SN76111N                             | ULN2121A         |
| LM1304N                           | ULN2120A         | CA 3045                              | ULN2045H         | SG 741SCT                                | ULN2151D         | SN76113N                             | ULN2128A         |
| LM1304N-01                        | ULN2120N         | CA 3046                              | ULN2046A         | SG 3081N                                 | ULN2081A         | SN76115N                             | ULN2110A         |
| LM1305N                           | ULN2122A         | CA 3047                              | ULN2047          | SG 3082N                                 | ULN2082A         | SN76116N                             | ULN2244A         |
| LM1305N-01                        | ULN2122N         | CA 3054                              | ULN2054A         | SG 3086                                  | ULN2086A         | SN76130N                             | ULN2126A         |
| LM1307N                           | ULN2128A         | CA 3065                              | ULN2165A         | SG 3217J                                 | ULN2151D         | SN76177ND                            | ULN2278P         |
| LM1307N-01                        | ULN2128N         | CA 3067                              | ULN2267A         | SG 3821J                                 | ULN2045H         | SN76226                              | ULN2216          |
| LM1310N                           | ULN2110A         | CA 3070                              | ULN2124A         | SG 3821N                                 | ULN2046A         | SN76227                              | ULN2217          |
| LM1800                            | ULN2244A         | CA 3071                              | ULN2127A         | SG 3822N                                 | ULN2054A         | SN76228                              | ULN2218          |
| LM1820N                           | ULN2137A         | CA 3072                              | ULN2114A         | SG 3822N                                 | ULN2054A         | SN76242N                             | ULN2124A         |
| LM1841N                           | ULN2136A         | CA 3075                              | ULN2129A         | SG 3886N                                 | ULN2086A         | SN76243AN                            | ULN2127A         |
| LM2111N                           | ULN2111A         | CA 3081                              | ULN2081A         | <b>SOLITRON DEVICES INC.</b>             |                  | SN76246N                             | ULN2114A         |
| LM2111N-01                        | ULN2111N         | CA 3082                              | ULN2082A         | UC4741C                                  | ULN2151D         | SN76246N                             | ULN2228A         |
| LM2113N                           | ULN2113A         | CA 3083                              | ULN2083          | UC4741CE                                 | ULN2151M         | SN76267N                             | ULN2267A         |
| LM2113N-01                        | ULN2113N         | CA 3086                              | ULN2086A         | <b>STEWART-WARNER MICROCIRCUITS INC.</b> |                  | SN76298N                             | ULN2298A         |
| LM3045H                           | ULN2045H         | CA 3089                              | ULN2289A         | SW7401N                                  | US8881A          | SN76564N                             | ULN2264A         |
| LM3046N                           | ULN2046A         | CA 3120E                             | ULN2125A         | SW7437N                                  | US7437A          | SN76635N                             | ULN2137A         |
| LM3054N                           | ULN2054A         | CA 3121                              | ULN2269A         | SW7438N                                  | US7438A          | SN76642N                             | ULN2113A         |
| LM3064N                           | ULN2264A         | CA 3123E                             | ULN2137A         | SW7438N                                  | US7438A          | SN76643N                             | ULN2111A         |
| LM3065N                           | ULN2165A         | <b>R T C</b>                         |                  | <b>TEXAS INSTRUMENTS</b>                 |                  | SN76665N                             | ULN2165A         |
| LM3065N-01                        | ULN2165N         | TBA221B                              | ULN2151M         | SN 7427N                                 | US7427A          | SN76669N                             | ULN2136A         |
| LM3067N                           | ULN2267A         | TBA221N                              | ULN2151D         | SN 7437N                                 | US7437A          | SN76675N                             | ULN2129A         |
| LM3070N                           | ULN2124A         | <b>SESCOSEM</b>                      |                  | SN 7438N                                 | US7438A          | SN76678P                             | ULN2209M         |
| LM3071N                           | ULN2127A         | TBA331                               | ULN2046          | SN 72741L                                | ULN2151D         | SN76688ND                            | ULN2211P         |
| LM3075N                           | ULN2129A         | TBA341                               | ULN2054          | SN72741P                                 | ULN2151M         | SN76689N                             | ULN2289A         |
| LM3075N-01                        | ULN2129N         | <b>THOMSON CSF</b>                   |                  | SN55451B JP                              | UDS3611H         | <b>THOMSON CSF</b>                   |                  |
| LM3086N                           | ULN2086A         | SFC2741C                             |                  | SN55452B JP                              | UDS3612H         | SFC2741C                             | ULN2151D         |
| LM3611N                           | UDN3611M         | SFC2741DC                            |                  | SN55453B JP                              | UDS3613H         | SFC2741DC                            | ULN2151M         |
| LM3612N                           | UDN3612M         | <b>TRANSISTRON ELECTRONICS CORP.</b> |                  | SN55454B JP                              | UDS3614H         | <b>TRANSISTRON ELECTRONICS CORP.</b> |                  |
| LM3613N                           | UDN3613M         | T2741WV                              |                  | SN55461JP                                | UDS3611H         | T2741WV                              | ULN2151D         |
| LM3614N                           | UDN3614M         |                                      |                  |  |                  |                                      |                  |
| MC1304P                           | ULN2120A         |                                      |                  |  |                  |                                      |                  |
| MC1305P                           | ULN2122A         |                                      |                  |  |                  |                                      |                  |
| MC1307P                           | ULN2128A         |                                      |                  |  |                  |                                      |                  |
| MC1310P                           | ULN2210A         |                                      |                  |  |                  |                                      |                  |

\*Indicates the Sprague suggested replacement is similar but not an exact pin-for-pin electrical replacement.

Although care has been taken in the preparation of this guide to insure its technical correctness, no responsibility is assumed by the Sprague World Trade Corp. for any consequences of the use of items listed.

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