

QUAD DIFFERENTIAL LINE DRIVER

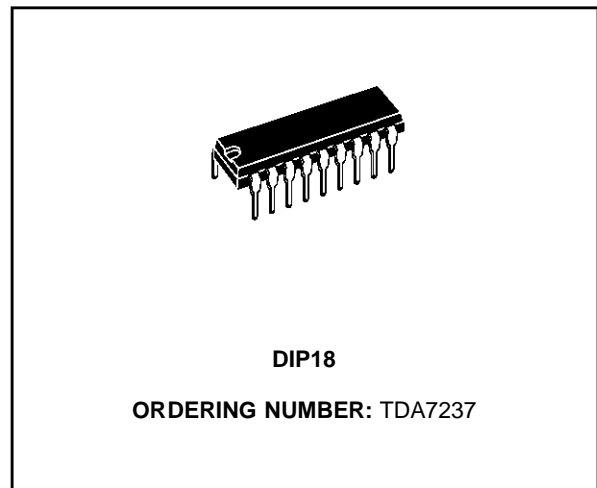
PRODUCT PREVIEW

DESCRIPTION

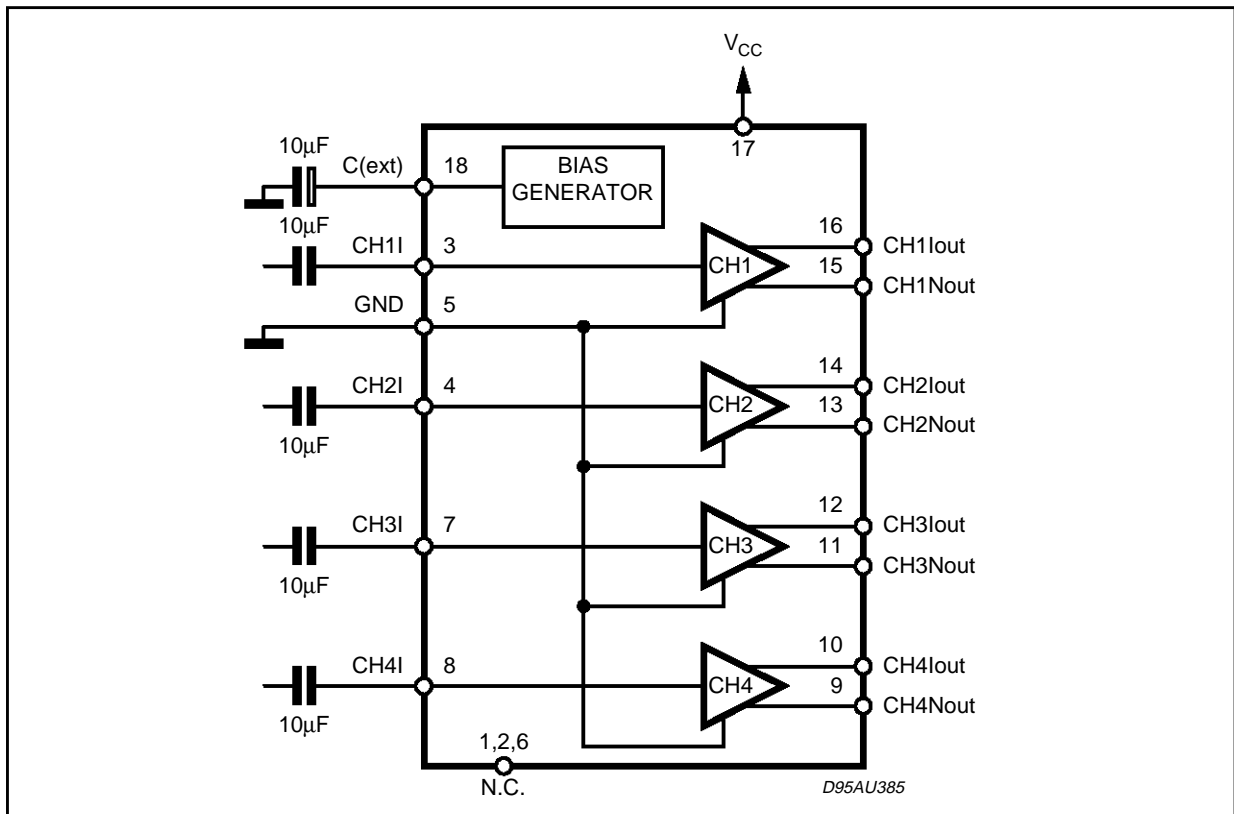
The quad differential line driver is a monolithic integrated circuit intended to provide low noise, low distortion voltage gain.

Additionally, the signal is converted from a single ended to a differential signal pair for applications requiring signal isolation from DC grounded.

The four channel's gains are matched within 1dB.



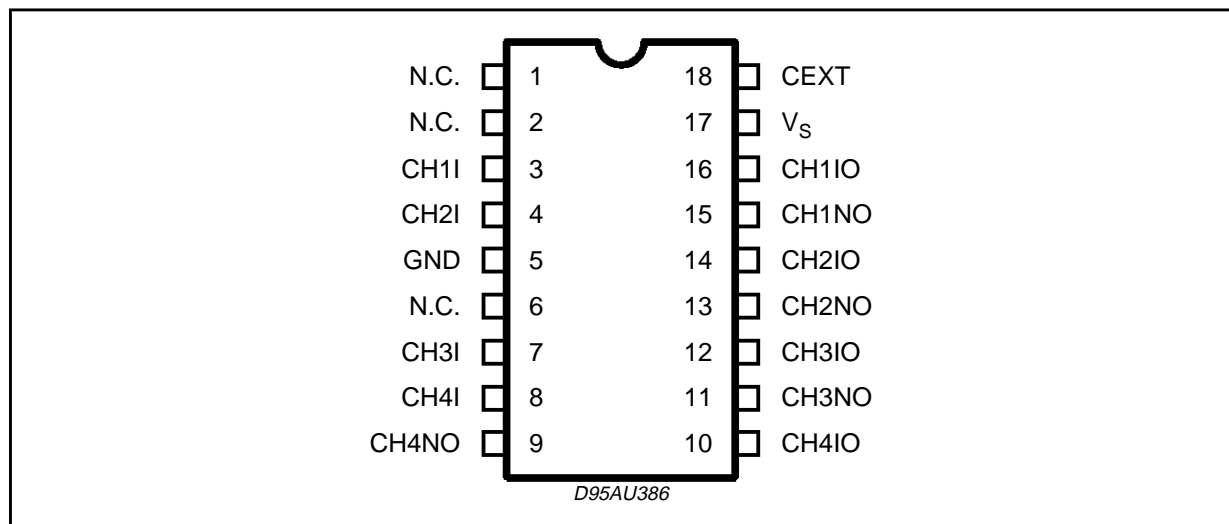
BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|------------------|-------------------------------|------------|------|
| V _S | Supply Voltage | 20 | V |
| P _{tot} | Total Power Dissipation | 750 | mW |
| T _{amb} | Operating Ambient Temperature | -40 to 85 | °C |
| T _{stg} | Storage Temperature | -55 to 150 | °C |

PIN CONNECTION



THERMAL DATA

| Symbol | Parameter | Value | Unit |
|------------------------|------------------------------------|-------|------|
| R _{th j-pins} | Thermal Resistance junction - pins | 90 | °C/W |

PIN FUNCTIONS

| N. | Name | Function |
|----|----------------|------------------------------------|
| 1 | N.C. | |
| 2 | N.C. | |
| 3 | CH1I | Input to channel one |
| 4 | CH2I | Input to channel two |
| 5 | GND | Ground |
| 6 | N.C. | |
| 7 | CH3I | Input to channel three |
| 8 | CH4I | Input to channel four |
| 9 | CH4NO | Channel four non inverting output |
| 10 | CH4IO | Channel four inverting output |
| 11 | CH3NO | Channel three non inverting output |
| 12 | CH3IO | Channel three inverting output |
| 13 | CH2NO | Channel two non inverting output |
| 14 | CH2IO | Channel two inverting output |
| 15 | CH1NO | Channel one non inverting output |
| 16 | CH1IO | Channel one inverting output |
| 17 | V _S | Supply Voltage |
| 18 | CEXT | By-pass Capacitor |

ELECTRICAL CHARACTERISTICS ($V_{CC} = 10V$; $T_{amb} = 25^{\circ}C$; $f = 1KHz$, unless otherwise specified.)

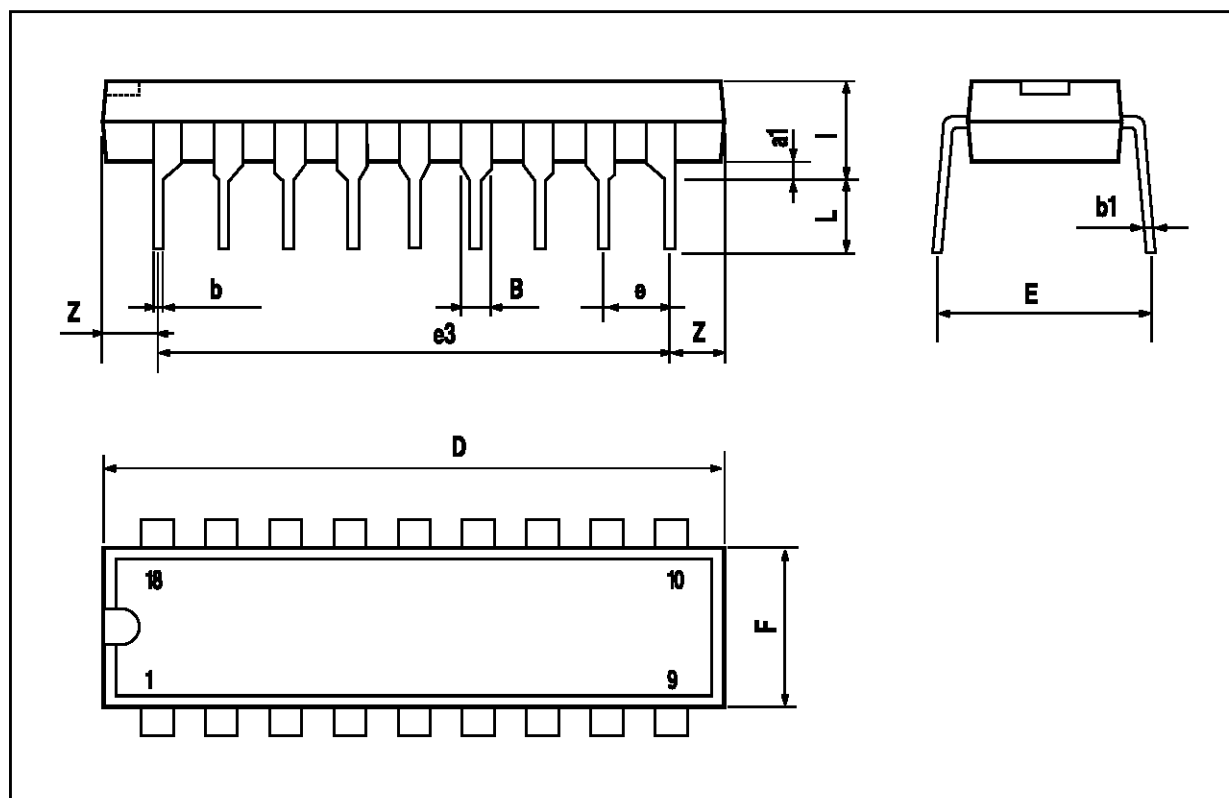
| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|-----------|--|---|------|------|------|-----------|
| V_s | Supply Voltage | | 9 | | 11 | V |
| Z_i | Input Impedance | | 15 | 23 | 30 | $K\Omega$ |
| SVR | Supply Voltage Rejection | $f = 10KHz$ | 35 | 45 | | dB |
| I_{sg} | Output Short Circuit Current to GND | each pin | | 40 | | mA |
| | | all pins | | 300 | | mA |
| | Output Short Circuit Current to V_{CC} | each pin | | 20 | | mA |
| | | all pins | | 150 | | mA |
| I_s | Supply Current | | 35 | 50 | mA | |
| S_R | Slew Rate | $R_L = 10KW$; $C_L = 1000pF$ | | 3 | | $V/\mu s$ |
| S/N | Signal to Noise Ratio (1) | | 83 | 91 | | dB |
| THD | Total Harmonic Distortion | $V_o = 4V_{RMS}$; $R_L = 10KW$; $C_L = 1000pF$ | | 0.07 | 0.1 | % |
| C_s | Channel Separation | (2) | 70 | 80 | | dB |
| V_{IDC} | DC Input Voltage | | 5.8 | 6.25 | 6.6 | V |
| V_{ODC} | DC Output Voltage | | 3.9 | 4.75 | 5.3 | V |
| V_{CDC} | DC C_{ext} Voltage | pin 18 | 5.8 | 6.25 | 6.6 | V |
| Z_o | Output Impedance | | | 50 | 100 | Ω |
| G_v | Voltage Gain | | 15.9 | 16.7 | 17.5 | dB |

Notes:

1) Bw = 20Hz to 20KHz with 60dB/decade Rolloff (referred to 1.4 V_{RMS})2) All input AC grounded via 10 μF capacitor

DIP18 PACKAGE MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|-------|-------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| a1 | 0.254 | | | 0.010 | | |
| B | 1.39 | | 1.65 | 0.055 | | 0.065 |
| b | | 0.45 | | | 0.018 | |
| b1 | | 0.25 | | | 0.010 | |
| D | | | 25.4 | | | 1.000 |
| E | | 8.5 | | | 0.335 | |
| e | | 2.54 | | | 0.100 | |
| e3 | | 22.86 | | | 0.900 | |
| F | | | 7.1 | | | 0.280 |
| l | | | 3.93 | | | 0.155 |
| L | | 3.3 | | | 0.130 | |
| Z | | | 1.34 | | | 0.053 |



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