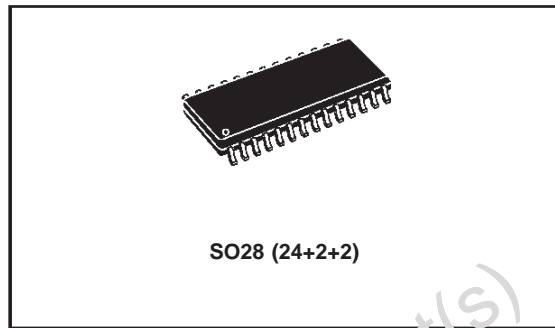


QUAD BTL DRIVER WITH VOLTAGE REGULATOR

- 4 BUILT-IN POWER BRIDGES (4 x 0.6A)
- NO EXTERNAL COMPONENTS
- SINGLE POWER SUPPLY
- WIDE SUPPLY VOLTAGE RANGE (6 TO 15V)
- 5V REGULATOR DRIVER FOR EXTERNAL PASS TRANSISTOR WITH FOLD-BACK SHORT CIRCUIT PROTECTION
- ADJUSTABLE REGULATOR (2.0 TO 3.6V @ 200mA) WITH SHORT CIRCUIT PROTECTION



DESCRIPTION

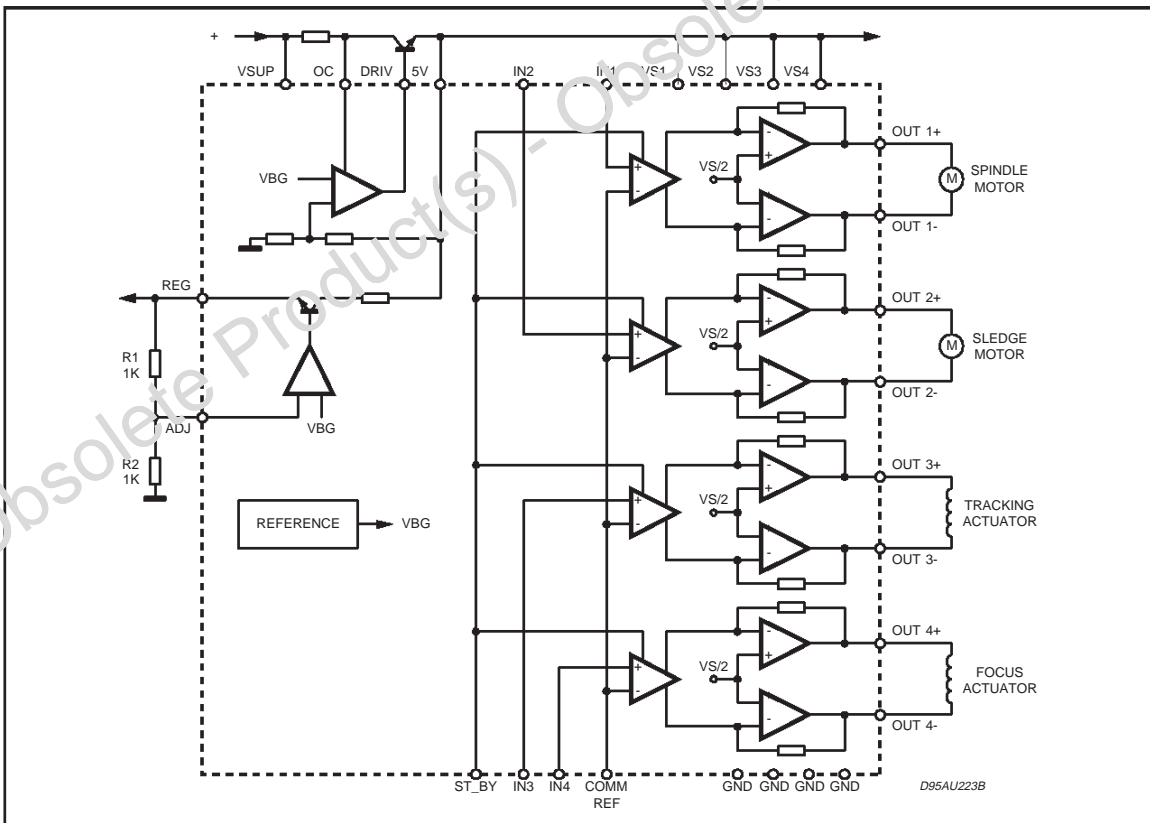
This device is a quad power driver circuit in BTL configuration, intended for use as a power driver for servo systems with a single supply.

It's specially dedicated to compact disc players

and it's capable of driving focus & tracking actuators sledge & spindle motors

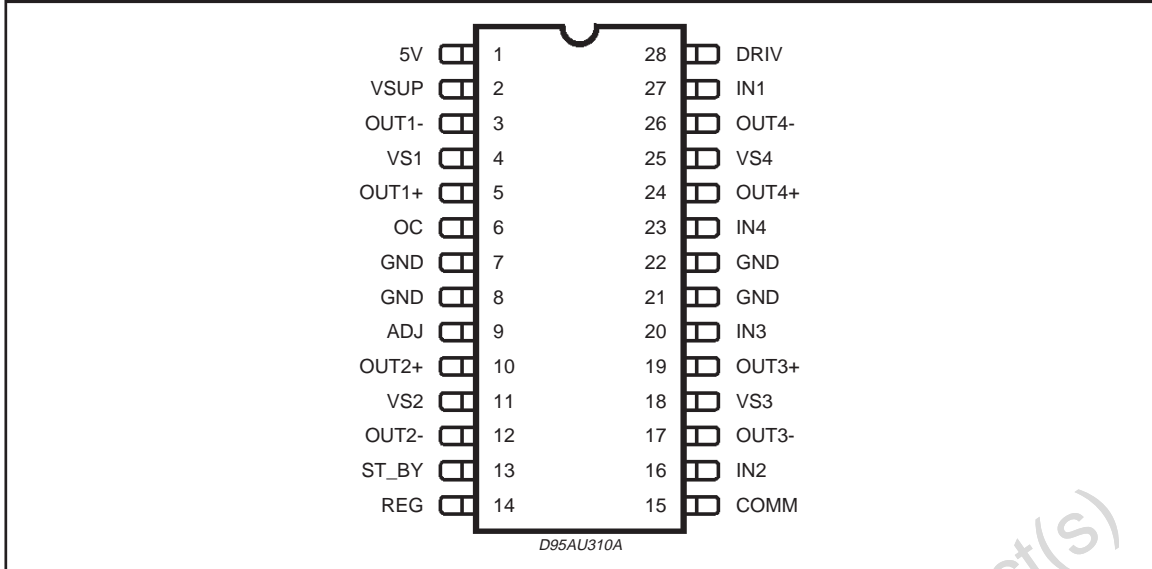
The regulators are mainly used to have a 5V supply for the power part and a lower programmable voltage for the logic circuits.

Figure 1: Quad BTL Power Bridges + Multifunction Regulators.



TDA7473

PIN CONNECTION (Top view)



PIN FUNCTIONS

| N. Pin | Name | Description |
|--------|-------|-------------------------------------|
| 1 | 5V | 5V regulated input |
| 2 | VSUP | Positive power supply (battery) |
| 3 | OUT1- | 1.st channel negative output |
| 4 | VS1 | 1.st channel power supply |
| 5 | OUT1+ | 1.st channel positive output |
| 6 | OC | Overcurrent sense input |
| 7 | GND | Ground |
| 8 | GND | Ground |
| 9 | ADJ | Regulated voltage adjust input |
| 10 | OUT2+ | 2.nd channel positive output |
| 11 | VS2 | 2.nd channel power supply |
| 12 | OUT2_ | 2.nd channel negative output |
| 13 | ST_BY | Stand_by |
| 14 | REG | Regulated voltage output |
| 15 | COMM | Common negative input |
| 16 | IN2 | Positive input for the 2.nd channel |
| 17 | OUT3- | 3.rd channel negative output |
| 18 | VS3 | 3.rd channel power supply |
| 19 | OUT3+ | 3.rd channel positive output |
| 20 | IN3 | Positive input for the 3.rd channel |
| 21 | GND | Ground |
| 22 | GND | Ground |
| 23 | IN4 | Positive input for the 4.th channel |
| 24 | OUT4+ | 4.th channel positive output |
| 25 | VS4 | 4.th channel power supply |
| 26 | OUT4- | 4.th channel negative output |
| 27 | IN1 | Positive input for the 1.st channel |
| 28 | DRIV | Pass transistor driver |

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|------------------------------|-----------|------|
| V_{SUP} | DC Supply Voltage | 18 | V |
| V_S | Channel Power Supply | 6 | V |
| T_{OP} | Operating Temperature Range | -25 to 80 | °C |
| T_J | Maximum Junction Temperature | 150 | °C |

THERMAL DATA

| Symbol | Parameter | Value | Unit |
|------------------|--|-------------|------|
| $R_{th\ j-amb}$ | Thermal Resistance Junction to Ambient | Max. 50 (*) | °C/W |
| $R_{th\ j-pins}$ | Thermal Resistance Junction to Pins | Typ. 17 | °C/W |

(*) with 6cm² of copper heatsink on board.

ELECTRICAL CHARACTERISTICS (@ $V_{SUP} = 6V$, $T_{amb} = 25^\circ C$, unless otherwise specified.)

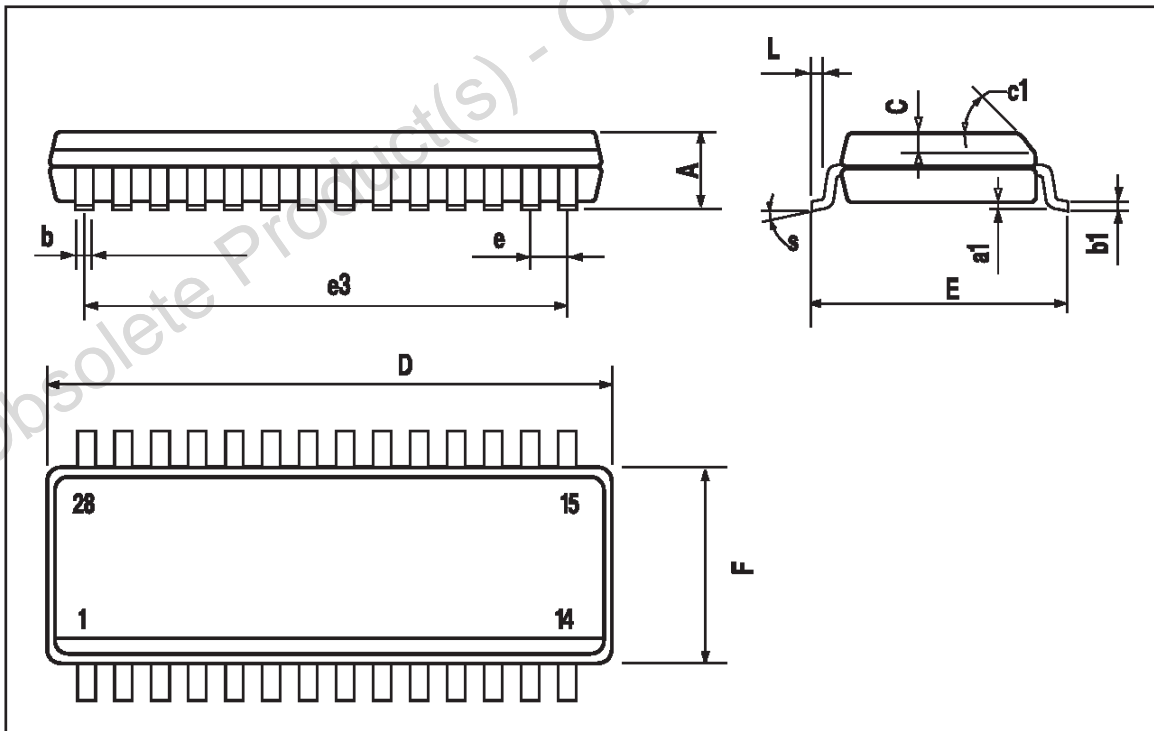
| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|---------------------|---|------------------------------------|----------------|----------------|----------------|------|
| V_{SUP} | Supply Voltage | | 6 | | 15 | V |
| | Maximum Power Dissipation (1) | | | 1.5 | | W |
| | Quiescent current (2) from V_S | $V_{(pin\ 4,\ 11,\ 18,\ 25)} = 5V$ | | 20 | 35 | mA |
| | Quiescent current (2) from 5V | $V_{(pin\ 1)} = 5V, R_2 = \infty$ | | 1.8 | 2.5 | mA |
| | Quiescent current (2) from V_{SUP} | $V_{SUP} = 15V$ | | 1.3 | 2.5 | mA |
| | | $V_{SUP} = 6V$ | | 1 | 2 | mA |
| | Stand-by current from 5V (pin 1) | $V_{(pin\ 1)} = 5V, R_2 = \infty$ | | 1.2 | 2 | mA |
| | Stand-by current from V_{SUP} | $V_{SUP} = 15V$ | | 0.4 | 0.8 | mA |
| | | $V_{SUP} = 6V$ | | 0.3 | 0.6 | mA |
| CHANNELS BTL | | | | | | |
| | Peak output current for channels | | 0.6 | | | A |
| V_{SAT} | VSAT HIGH SIDE | $I = 0.6A; V_S = 5V$ | | 1.3 | 1.6 | A |
| | VSAT LOW SIDE | $I = 0.6A; V_S = 5V$ | | 0.7 | 0.9 | A |
| | Output voltage swing peak-to-peak | $V_S = 5V, I_{out} = 0.6A$ | 5.5 | 6 | | Vpp |
| | Voltage gain for channels | | 25.5 | 26.5 | 27.5 | dB |
| | Channels output offset voltage | | -180 | -50 | 100 | mV |
| V_{ST-BY} | Channel St-By Threshold | Active --> St-By | $0.65 V_{reg}$ | $0.75 V_{reg}$ | $0.85 V_{reg}$ | V |
| | | St-By --> Active | | $0.50 V_{reg}$ | | V |
| REGULATORS | | | | | | |
| V_{5V} | Vpin 1 | $I_{out} = 0.2A$ | 4.85 | 5.05 | 5.25 | V |
| | Min drop 5V --> REG | $I_{out} = 0.2A$ | | 1.2 | 1.3 | V |
| I_{DRIV} | Output current from DRIV for pass-transistor driving | | 50 | 100 | | mA |
| | Output current from DRIV in stand-by | | 20 | 50 | 80 | mA |
| | DROP V_{SUP} --> DRIV | $I_{DRIV} = 20mA$ | | 0.2 | 0.25 | V |
| | Threshold voltage for overcurr. protection ($V_{SUP} - OC$) | $V_{SUP} = 6V$ | 190 | 230 | 270 | mV |
| | | $V_{SUP} = 12V$ | 120 | 160 | 200 | mV |
| | | $V_{SUP} = 15V$ | 80 | 100 | 120 | mV |
| V_{REG} | Regulator Voltage | $R_1, R_2 = 1K\Omega$ | 2.45 | 2.53 | 2.65 | V |
| | Min REG voltage (settable) | | | 1.8 | 2 | V |
| | Max REG voltage (settable) | | 3.6 | 3.8 | | V |
| | Output current from REG in Stand-by | $R_1, R_2 = 1K\Omega$ | 20 | | | mA |

- (1) @ $T_{amb} = 70^\circ C$, on board 6cm² copper heatsink
(2) $INx = COMM$; no loads on the regulators outputs
(3) Device is active when St-By = Low



SO28 PACKAGE MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------------|-------|-------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | | 2.65 | | | 0.104 |
| a1 | 0.1 | | 0.3 | 0.004 | | 0.012 |
| b | 0.35 | | 0.49 | 0.014 | | 0.019 |
| b1 | 0.23 | | 0.32 | 0.009 | | 0.013 |
| C | | 0.5 | | | 0.020 | |
| c1 | 45° (typ.) | | | | | |
| D | 17.7 | | 18.1 | 0.697 | | 0.713 |
| E | 10 | | 10.65 | 0.394 | | 0.419 |
| e | | 1.27 | | | 0.050 | |
| e3 | | 16.51 | | | 0.65 | |
| F | 7.4 | | 7.6 | 0.291 | | 0.299 |
| L | 0.4 | | 1.27 | 0.016 | | 0.050 |
| S | 8° (max.) | | | | | |



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