

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 PROTEC-TION

SO28 (24+2+2)

DESCRIPTION

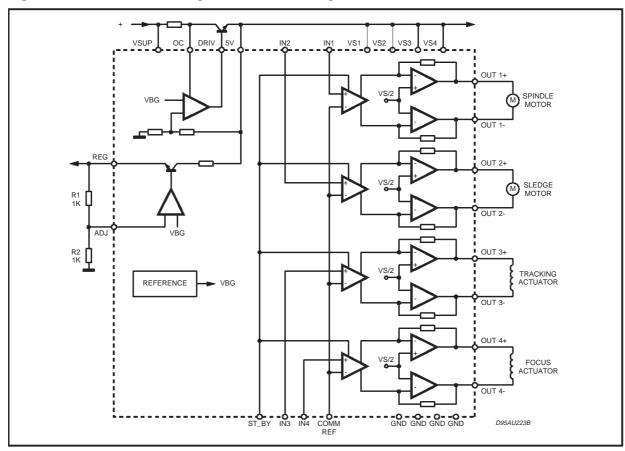
This device is a quad power driver circuit in BTL configuration, intended for use as a power driver for servo systems with a single supply.

It's specially dedicated to compact disc players

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

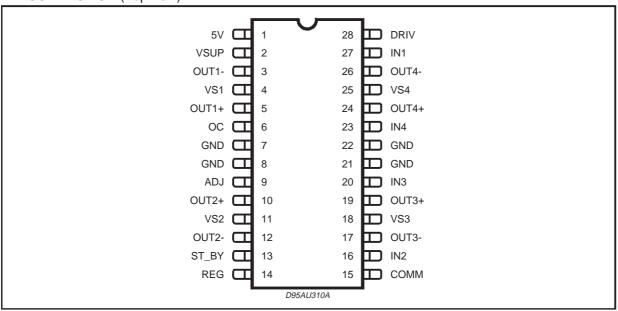
The regulators are mainly used to have a 5V supply for the power part and a lower programmable voltage for the logic circuits.

Figure 1: Quad BTL Power Bridges + Multifunction Regulators.



June 1998 1/5

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			

4

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{SUP}	DC Supply Voltage	18	V
Vs	Channel Power Supply	6	V
T _{OP}	Operating Temperature Range	-25 to 80	°C
TJ	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	Тур.	17	°C/W

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

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

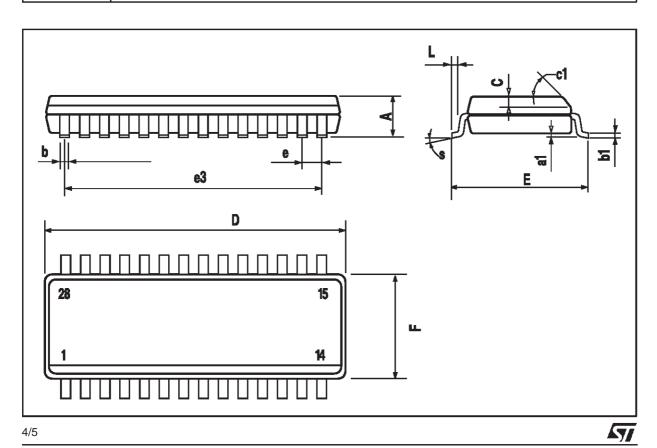
Symbol	Parameter	Test Condition	Min.	Тур.	Max.	Unit
V_{SUP}	Supply Voltage		6		15	V
	Maximum Power Dissipation (1)			1.5		W
	Quiescent current (2) from V _S	V(pin 4, 11, 18, 25) = 5V		20	35	mA
	Quiescent current (2) from 5V	$V(pin 1) = 5V, R2 = \infty$		1.8	2.5	mA
	Quiescent current (2) from V _{SUP}	$V_{SUP} = 15V$		1.3	2.5	mA
	1	$V_{SUP} = 6V$		1	2	mA
	Stand-by current from 5V (pin 1)	$V_{(pin 1)} = 5V, R2 = \infty$		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	mΑ
CHANNELS	S BTL					
	Peak output current for channels		0.6			Α
V _{SAT}	VSATHIGH SIDE	I = 0.6A; Vs = 5V		1.3	1.6	Α
	VSATLOW SIDE	I = 0.6A; Vs = 5V		0.7	0.9	Α
	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
VST-BY	Channel St-By Threshold	Active> St-By	0.65 V _{req}	0.75 V _{req}	0.85 V _{req}	V
		St-By> Active		0.50 V _{req}		V
REGULATO	ORS					
V ₅ v	Vpin 1	lout = 0.2A	4.85	5.05	5.25	V
	Min drop 5V> REG	l _{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.	$V_{SUP} = 6V$	190	230	270	mV
	protection (VSUP - OC)	V _{SUP} = 12V	120	160	200	mV
		V _{SUP} = 15V	80	100	120	mV
V _{REG}	Regulator Voltage	R1, R2 = $1K\Omega$	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	R1, R2 = 1KΩ	20			mA

^{(1) @} T_{amb} = 70°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			
DIWI.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
А			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	
С		0.5			0.020		
c1	45° (typ.)						
D	17.7		18.1	0.697		0.713	
Е	10		10.65	0.394		0.419	
е		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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