

## 45V 3.5A QUAD POWER HALF BRIDGE

PRODUCT PREVIEW

### 1 FEATURES

- MULTIPOWER BCD TECHNOLOGY
- MINIMUM INPUT OUTPUT PULSE WIDTH DISTORTION
- 200mΩ R<sub>dsON</sub> COMPLEMENTARY DMOS OUTPUT STAGE
- CMOS COMPATIBLE LOGIC INPUTS
- THERMAL PROTECTION
- THERMAL WARNING OUTPUT
- UNDER VOLTAGE PROTECTION
- SHORT CIRCUIT PROTECTION

### 2 DESCRIPTION

STA518A is a monolithic quad half bridge stage in Multipower BCD Technology. The device can be used also as dual bridge or reconfigured, by connecting CONFIG pin to V<sub>dd</sub> pin, as single bridge with double current capability.

Figure 1. Package



Table 1. Order Codes

Part Number	Package
STA518A	PSS036 (slug up)
STA518ATR	in Tape & Reel

The device is particularly designed to make the output stage of a stereo All-Digital High Efficiency (DDX™) amplifier capable to deliver an output power of 24W x 4 channels @ THD = 10% at V<sub>CC</sub> 30V on 4Ω load in single ended configuration.

It can also deliver 50 + 50W @ THD = 10% at V<sub>CC</sub> 29V as output power on 8Ω load in BTL configuration and 70W @ THD = 10% at V<sub>CC</sub> 34V on 8Ω in single parallel BTL configuration. The input pins have threshold proportional to V<sub>L</sub> pin voltage.

Figure 2. Audio Application Circuit ( Quad single ended)

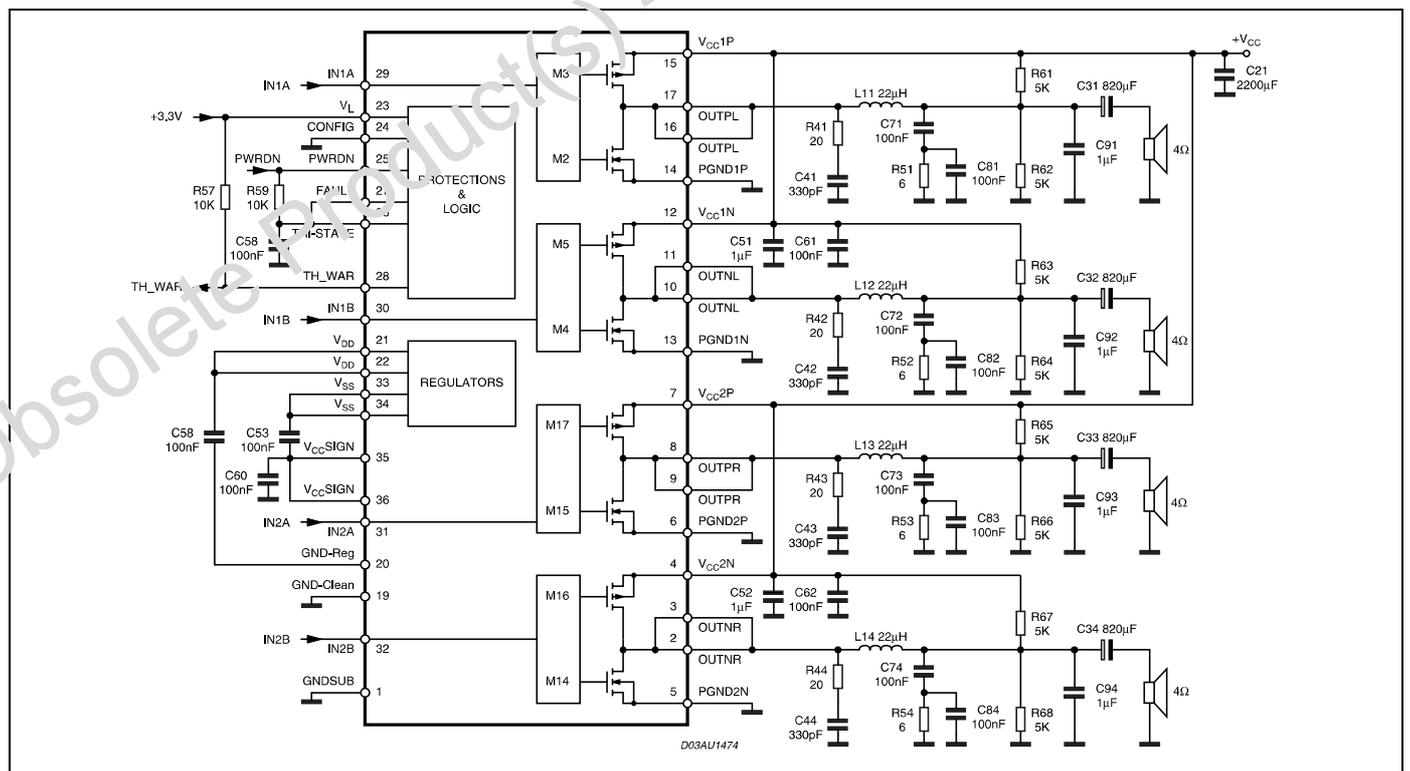


Table 2. Pin Function

N°	Pin	Description
1	GND-SUB	Substrate ground
2 ; 3	OUT2B	Output half bridge 2B
4	Vcc2B	Positive supply
5	GND2B	Negative Supply
6	GND2A	Negative Supply
7	Vcc2A	Positive supply
8 ; 9	OUT2A	Output half bridge 2A
10 ; 11	OUT1B	Output half bridge 1B
12	Vcc1B	Positive supply
13	GND1B	Negative Supply
14	GND1A	Negative Supply
15	Vcc1A	Positive supply
16 ; 17	OUT1A	Output half bridge 1A
18	NC	Not connected
19	GND-clean	Logical ground
20	GND-Reg	Ground for regulator Vdd
21 ; 22	Vdd	5V Regulator referred to ground
23	VL	Logic Reference Voltage
24	CONFIG	Configuration pin
25	PWRDN	Stand-by pin
26	TRI-STATE	Hi-Z pin
27	FAULT	Fault pin advisor
28	TH-WAR	Thermal warning advisor
29	IN1A	Input of half bridge 1A
30	IN1B	Input of half bridge 1B
31	IN2A	Input of half bridge 2A
32	IN2B	Input of half bridge 2B
33 ; 34	Vss	5V Regulator referred to +Vcc
35 ; 36	Vcc Sign	Signal Positive supply

**Table 3. Functional Pin Status**

PIN NAME	PIN N.	Logical value	IC -STATUS
FAULT	27	0	Fault detected (Short circuit, or Thermal ..)
FAULT *	27	1	Normal Operation
TRI-STATE	26	0	All powers in Hi-Z state
TRI-STATE	26	1	Normal operation
PWRDN	25	0	Low consumption
PWRDN	25	1	Normal operation
THWAR	28	0	Temperature of the IC =130C
THWAR <sup>(1)</sup>	28	1	Normal operation
CONFIG	24	0	Normal Operation
CONFIG <sup>(2)</sup>	24	1	OUT1A=OUT1B ; OUT2A=OUT2B (IF IN1A = IN1B; IN2A = IN2B)

Note: 1. The pin is open collector. To have the high logic value, it needs to be pulled up by a resistor.  
 2. To put CONFIG = 1 means connect Pin 24 (CONFIG) to Pins 21, 22 (Vdd) to implemented single BTL (MONO MODE) operation for high current.

**Figure 3. Pin Connection**

