

# 5-channel BTL Driver for DVD player

## AM5888S

The AM5888S is a five-channel BTL driver IC for driving the motors and actuators such as used in DVD player and consists of two independent precision voltage regulators with adjustable range from 1.5V to 4 V. It supports a variety of applications. Also, Pb free package is selectable (Please refer to Marking Identification).

### ● Applications

BTL driver for CD, CD-ROM and DVD.

### ● Features

- 1) Two channels are voltage-type BTL drivers for actuators of tracking and focus. Two channels are voltage-type BTL driver for sled and spindle motors. It is also built-in one channel bi-direction DC motor driver for tray.
- 2) Wide dynamic range [9.0V (*typ.*) when  $V_{cc1}=V_{cc2}=12V$ , at  $R_L=20\Omega$  load].
- 3) Separating power of  $V_{cc1}$  and  $V_{cc2}$  is to improve power efficiency by a low supply voltage for tracking, focus, and spindle.
- 4) Level shift circuit built-in.
- 5) Thermal shut down circuit built-in.
- 6) Mute mode built-in.
- 7) **Dual actuator drivers:**  
A general purpose input OP provides differential input for signal addition. The output structure is two power OPAMPS in bridge configuration.
- 8) **Sled motor driver:**  
A general purpose input OP provides differential input for signal addition. The output structure is one power OPAMP in bridge configuration.
- 9) **Spindle driver:**  
Single input linear BTL driver. The output structure are two power OPAMPS in bridge configuration.
- 10) **Tray in-out driver:**  
The DC motor driver supports forward/reverse control for tray motor.
- 11) **2 Built-in regulator controllers**  
Adjustable range 1.5V ~ 4V

### ● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	Vcc1 Vcc2	13.5	V
Power dissipation	P <sub>d</sub>	*1.7	W
Operate Temp range	T <sub>opr</sub>	-35 ~ +85	°C
Storage Temp range	T <sub>stg</sub>	** -55 ~ +150	°C

\*When mounted on a 70mm×70mm×1.6mm glass epoxy board.

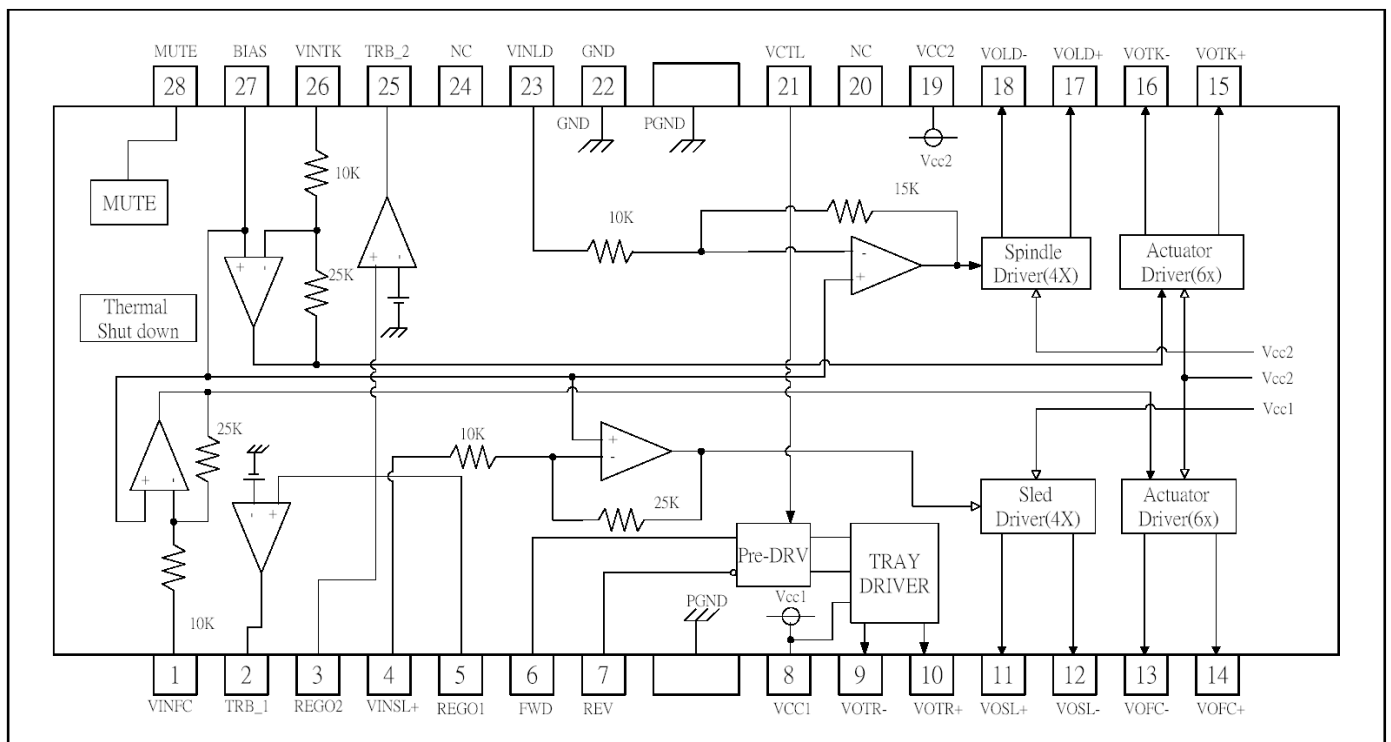
\*Reduced by 13.6mW for each increase in T<sub>a</sub> of 1°C over 25°C.

\*\*Should not exceed P<sub>d</sub> or ASO and T<sub>j</sub>=150°C values

### ● Guaranteed operating conditions (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc1	4.3 ~ 13.2	V
	Vcc2	4.3 ~ Vcc1	V

### ● Block diagram



● **Pin description**

PIN No	Pin Name	Function
1	VINFC	Input for focus driver
2	TRB_1	Connect to external transistor base
3	REGO2	Regulator voltage output, connect to external transistor collector
4	VINSL+	Input for the sled driver
5	REGO1	Regulator voltage output, connect to external transistor collector
6	FWD	Tray driver forward input
7	REV	Tray driver reverse input
8	Vcc1	Vcc for pre-drive block and power block of sled and tray
9	VOTR-	Tray driver output (-)
10	VOTR+	Tray driver output (+)
11	VOSL+	Sled driver output (+)
12	VOSL-	Sled driver output (-)
13	VOFC-	Focus driver output (-)
14	VOFC+	Focus driver output (+)
15	VOTK+	Tracking driver output (+)
16	VOTK-	Tracking driver output (-)
17	VOLD+	Spindle driver output (+)
18	VOLD-	Spindle driver output (-)
19	Vcc2	Vcc for power block of spindle, tracking and focus
20	NC	No Connection
21	VCTL	Speed control input of tray driver
22	GND	Ground
23	VINLD	Input for spindle driver
24	NC	No Connection
25	TRB_2	Connect to external transistor base
26	VINTK	Input for tracking driver
27	BIAS	Input for reference voltage
28	MUTE	Input for mute control

Notes) Symbol of + and – (output of drivers) means polarity to input pin.  
(For example, if voltage of pin1 is high, pin14 is high.)