Triple BTL Power Driver
AMM2288

The AMM2288 is specially developed for the application of compact disc players and is capable of driving focus, tracking, sled, spindle functions, and loading motor.

Applications

CD-audio, VCD, and DVD-player

Features

1) No external component.
2) Single power supply.
3) Low output offset voltage.
4) ESD protection on all pins.
5) DIP16 package for AMM2288A, SO16 package for AMM2288AT
6) Build-in thermal shutdown
7) Loading driver is current-controlled by external resistor

Absolute maximum ratings (T_a=25℃)

Parameter	Symbol	Limits	Unit
Supply voltage	V_P	16	V
Peak output current	IORM	* 0.5	A
Power dissipation	Pd	1.4 (A type) 1.1 (AT type)	W
Operate Temp range	Topr	-40 ~ +85	℃
Storage Temp range	Tstg	-55 ~ +150	℃

* For 1 channel output.

Quick references for driver 1,2 (Ta=25℃)

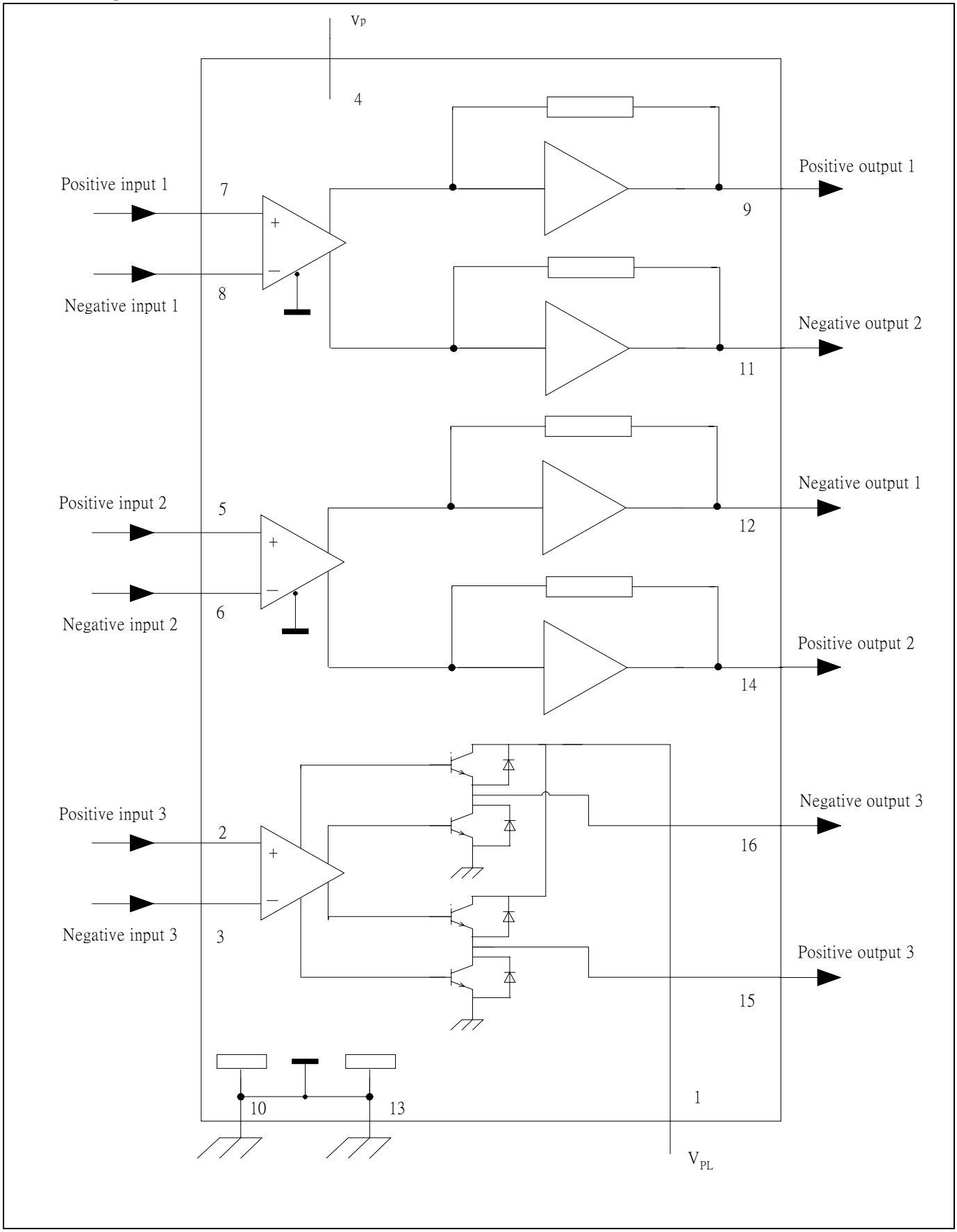
Parameter	Symbol	min	typ	max	Unit
Supply voltage	V_P	5		14	V
Internal voltage gain	G_V	14	15.5	17	dB
Quiescent current @ 9V V_P	I_{DDQ}			24	mA
Slew rate	S_R		1		V/us
Input current				300	nA

Electrical characteristics (unless otherwise specified, Ta=25℃, V_P=9V, R_L=8Ω)

Parameter	Symbol	Conditions	Limit			Unit
			Min	Typ	Max	
Channel 1,2						
Supply voltage	V_P		5		14	V
Output peak current	I_{PEAK}		450			mA
Repetitive output current	IORM	For 1,2 each channel(*1)	320			mA
Total quiescent current	I_P	@ V_P = 9V			36	mA
Output voltage swing	V_{OPP}		6.5	7.5		V
Voltage gain	G_V		14	15.5	17	dB
Input bias current	Ibias			100	300	nA
Bandwidth	B_W			-	100	KHz
Power supply rejection ratio	PSRR	@ V_P = 5V	38		-	dB
Common mode rejection ratio	CMRR			100		dB
Common mode input range	$V_{I(COM)}$		0	-	V_P-3.2	V
Channel separation	α			50		dB
Input impedance	Z_I			100		KΩ
Channel unbalance	$\lvert\Delta G_V\rvert$				1	dB
Slew rate	S_R			1		V/us
Channel 3 (Loading)						
Output constant loading current	I_{LC}	For Channel 3, at Rctrl=5.1Ω	160	200		mA
Input High Voltage	V_{IH}			2.5		
Input Low Voltage	V_{IL}			0.8		

*1. However, due to the power dissipation issue, it is not allowed for both channels to operate at this condition at the same moment.

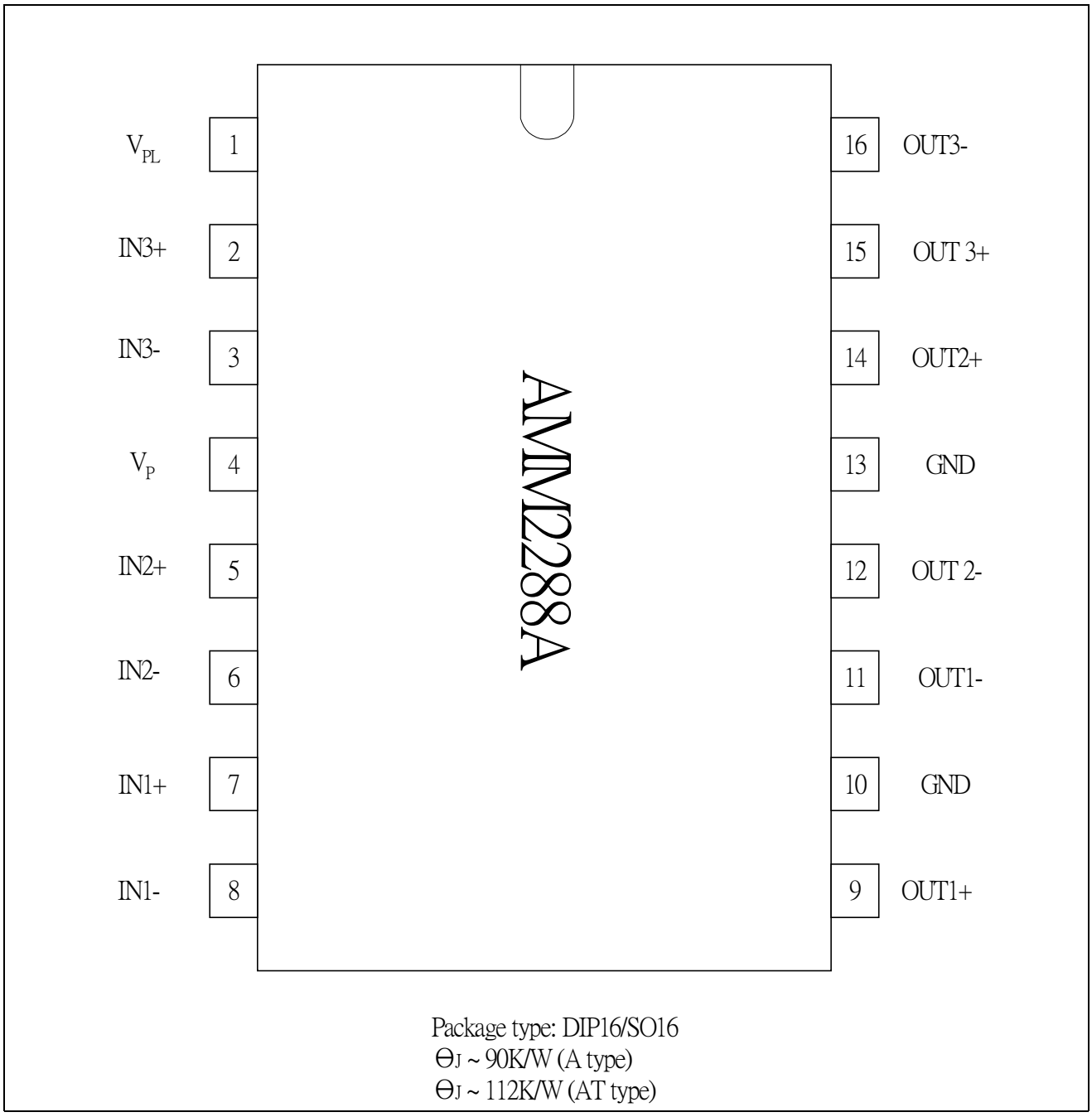
Block Diagram



Pin description

PIN No	Pin Name	Function
1	V_{PL}	Loading driver current-controlled resistor and power supply
2	IN3+	Positive input 3
3	IN3-	Negative input 3
4	V_P	Supply voltage for channel 1,2
5	IN2+	Positive input 2
6	IN2-	Negative input 2
7	IN1+	Positive input 1
8	IN1-	Negative input 1
9	OUT1+	Positive output 1
10	GND1	Ground 1
11	OUT1-	Negative output 1
12	OUT2-	Negative output 2
13	GND2	Ground 2
14	OUT2+	Positive output 2
15	OUT3+	Positive output 3
16	OUT3-	Negative output 3

Pin Assignment



Package type: DIP16/SO16
Θ_J ~ 90K/W (A type)
Θ_J ~ 112K/W (AT type)

Functional description

The AMM2288 is triple power driver circuits in a BTL configuration, intended for use as a power driver for servo systems with a single supply. It is particularly designed for **compact disc players** and is capable of driving focus, tracking, sled , spindle functions and loading motors.

Because of the BTL configuration, the device can supply bi-directional DC current in the load, with only a single supply voltage. The voltage gain of channel 1,2 is fixed by internal feedback at 15.5dB and the device operate in a supply voltage ranges 5 ~14V. The differential input can handle common mode input voltage from ground level up to VP-3.2V. The maximum output current of loading driver is controlled by an external resistor, which is normally in the range of 6~15 ohms.

Application information