



# CMD4505

## 5-CH BTL Driver for DVD Player

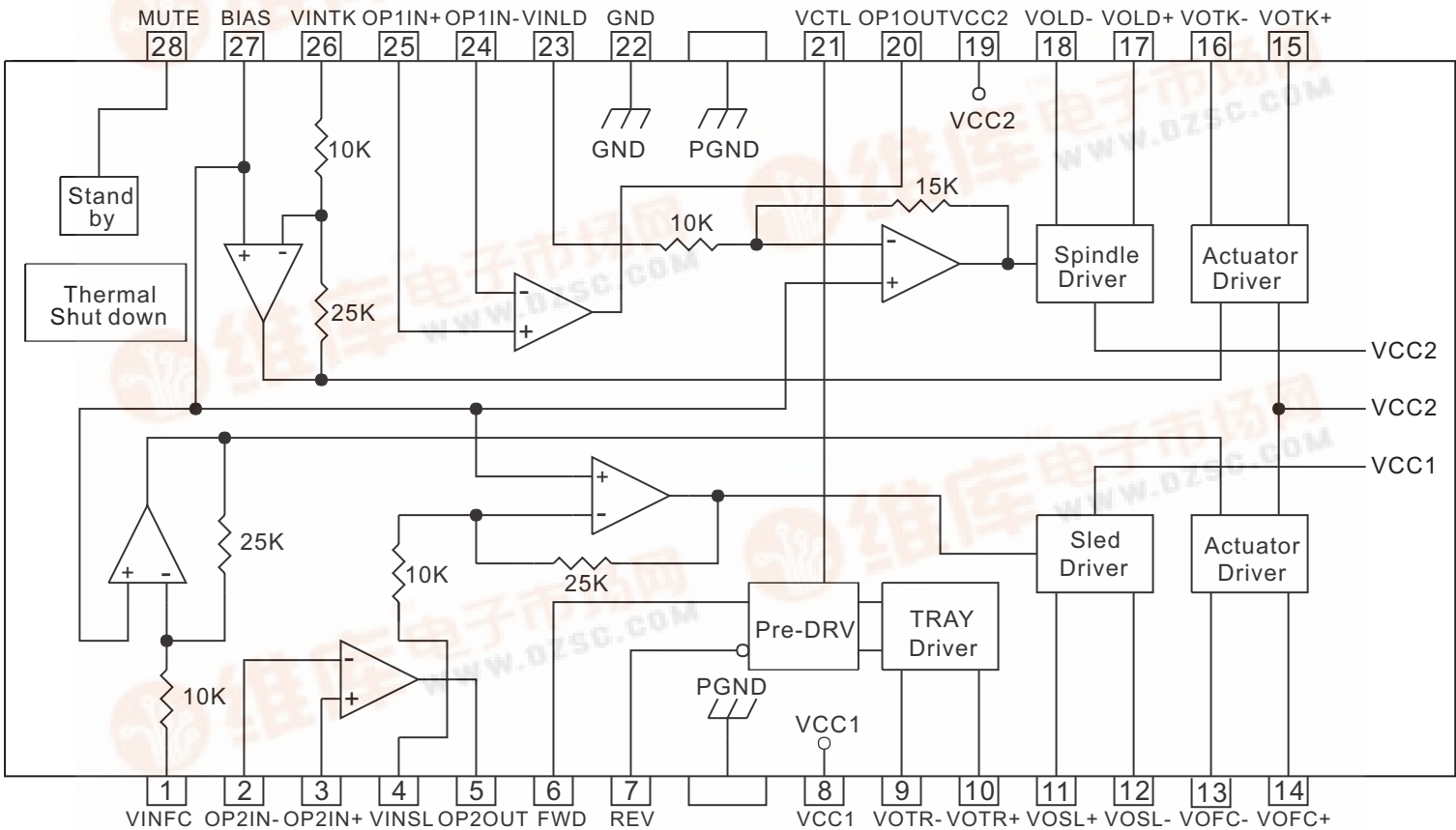
### Features

- 2-CH BTL driver
- 2-CH BTL driver with current feedback
- 1-CH forward/reverse control DC motor
- Built-in motor speed control circuit
- Built-in TSD (thermal shut down) circuit
- Built-in mute mode
- Operating supply voltage(4.5V~13.2V)

### Descriptions

The CMD4506 is a 5-CH motor driver for CD-p/VCD/DVD systems. It is composed of 2-CH BTL driver, 2-CH driver with current feedback and 1-CH forward/reverse control DC motor driver.

### Internal Block Diagram

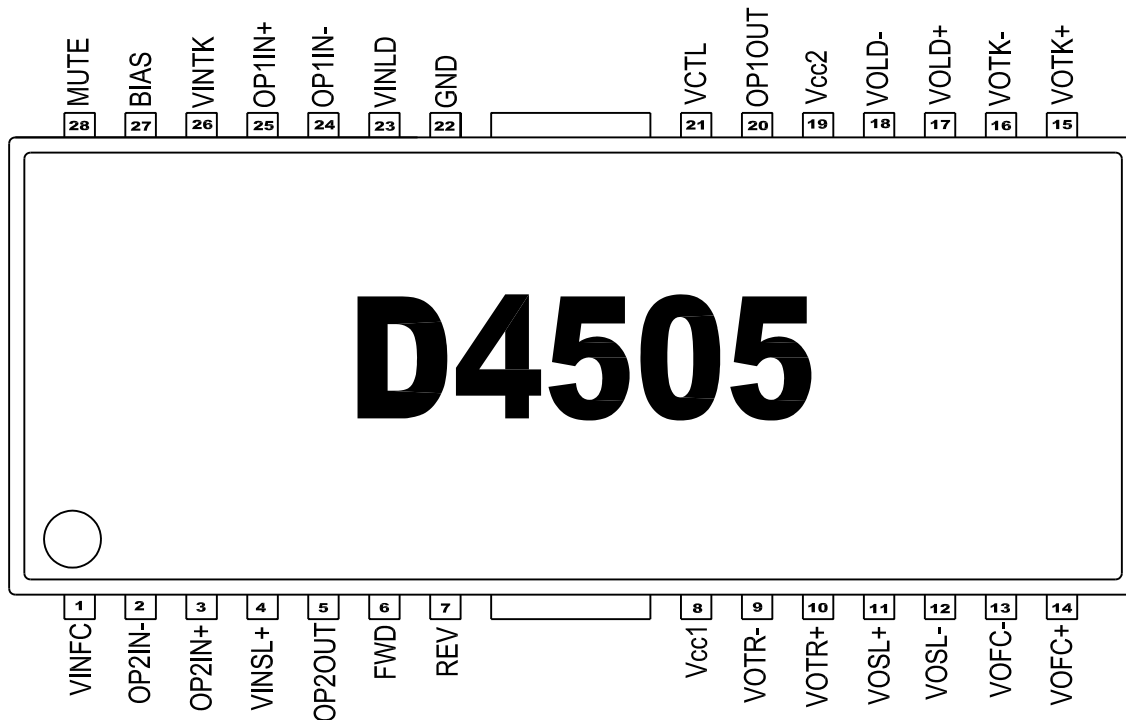


\* All specs and applications shown above subject to change without prior notice.

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### Pin Assignments



### Pin Definitions

NO	SYMBOL	FUNCTION	NO	SYMBOL	FUNCTION
1	VINFC	Input for focus driver	15	VOTK+	Tracking driver output (+)
2	OP2IN-	Comparator 2 input (-)	16	VOTK-	Tracking driver output (-)
3	OP2IN+	Comparator 2 input (+)	17	VOLD+	Spindle driver output (+)
4	VINSL+	Input for the sled driver	18	VOLD-	Spindle driver output (-)
5	OP2OUT	Comparator 2 output	19	Vcc2	Vcc for power block of spindle, tracking and focus
6	FWD	Tray driver forward input	20	OP1OUT	Comparator 1 output
7	REV	Tray driver reverse input	21	VCTL	Speed control input of tray driver
8	Vcc1	Vcc for pre-drive block and power block of sled and tray	22	GND	Ground
9	VOTR-	Tray driver output (-)	23	VINLD	Input for spindle driver
10	VOTR+	Tray driver output (+)	24	OP1IN-	Comparator 1 input (-)
11	VOSL+	Sled driver output (+)	25	OP1IN+	Comparator 1 input (+)
12	VOSL-	Sled driver output (-)	26	VINTK	Input for tracking driver
13	VOFC-	Focus driver output (-)	27	BIAS	Input for reference voltage
14	VOFC+	Focus driver output (+)	28	MUTE	Input for mute control

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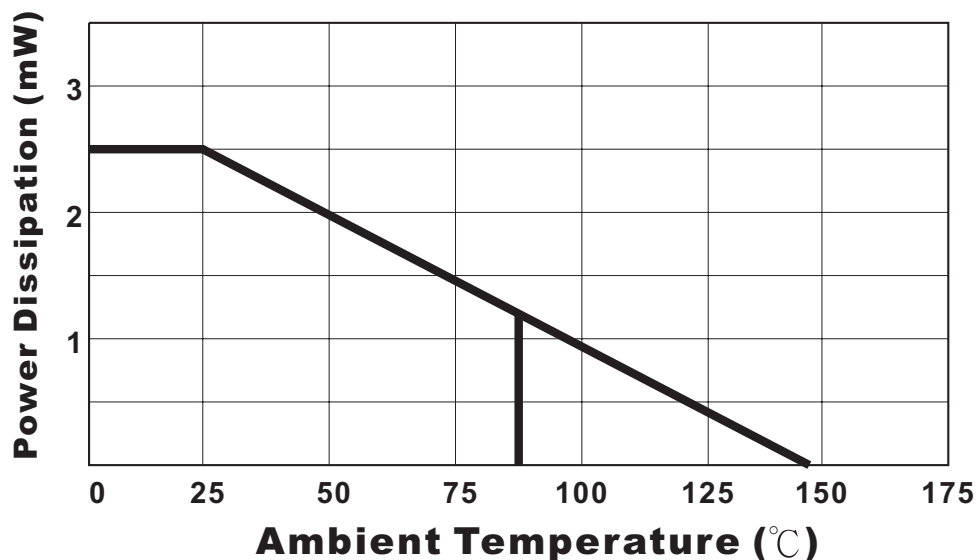
### Absolute Maximum Rating(Ta=25 )

CHARACTERISTICS	SYMBOL	LIMITS	UNIT
Supply voltage	Vcc1 Vcc2	13.5	V
Power dissipation	Pd	*1.7	W
Operate Temp range	Topr	-35~+85	
Storage Temp range	Tstg	-55~+150	

Note:

1. When mounted on 50mm x 50mm x 1mm PCB ( Phenolic resin material).
2. Power dissipation reduces 20mW/ for using above Ta=25 .
3. Do not exceed Pd and SOA

### Power Dissipation Curve



### Recommended Operating Conditions

CHARACTERISTICS	SYMBOL	LIMITS	UNIT
Supply voltage	Vcc1	4.5~13.2	V
	Vcc2	4.5~Vcc1	V

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### Electrical Characteristics

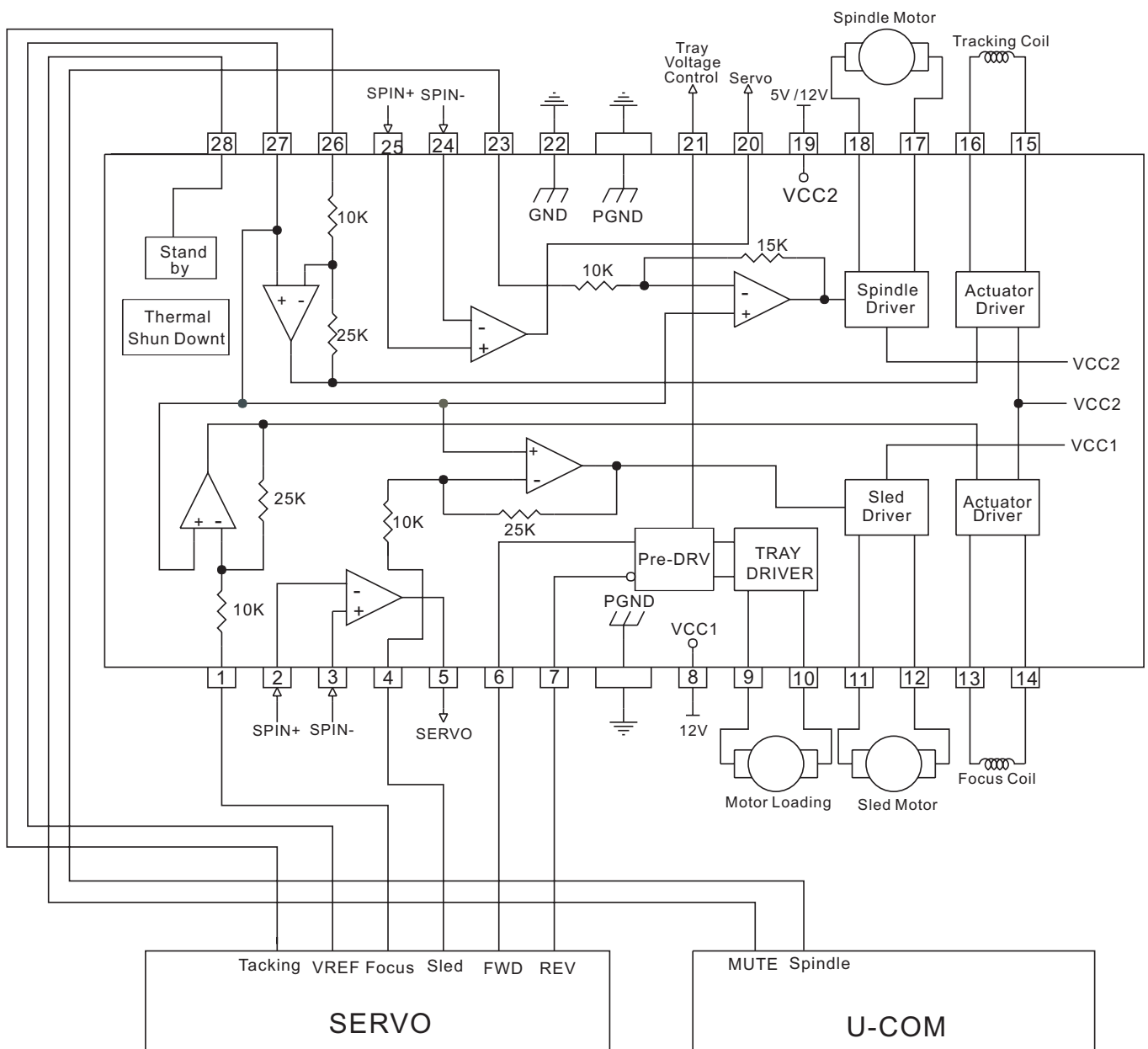
(VCC1=8V, VCC2=5V, BIAS=2.5V, f=1kHz, RL=8Ω, RS=0.5Ω, Ta=25°C unless otherwise specified)

Characteristics	Symbol	Conditions	Limit			Unit
			Min	Typ.	Max	
Quiescent current	Icc		-	30	-	mA
Voltage for mute ON	Vston		0	-	0.5	V
Voltage for mute OFF	Vstoff		2.0	-	5	V
<b>[Actuator Part]</b>						
Output offset voltage	Voo		-	-	±50	mV
Maximum output voltage	Vom	@10ΩLoad	3.6	4.0	-	V
Voltage gain	Gv	VIN=BIAS+0.2Vpp ac @1KHz	-	23.5	-	dB
<b>[Sled Part]</b>						
Output offset voltage	Voofsl		-	-	±100	mV
Maximum output voltage	Vomsl	@20ΩLoad	7.5	9.0	-	V
Closed loop voltage gain	Gvsl	VIN=BIAS+0.2Vpp ac @1KHz	18	20	22	dB
<b>[Spindle Part]</b>						
Output offset voltage	Voofld		-	-	±50	mV
Maximum output voltage	Vomax	@8ΩLoad	-	3.5	-	V
Voltage gain	Gvld	VIN=BIAS+0.2Vpp ac @1KHz	13.3	15.5	17.5	dB
Gain error by polarity	△Gvld	VIN=BIAS+0.2Vpp ac @1KHz	0	1	2	dB
<b>[Tray Driver Part]</b>						
Output saturation voltage 1	Vsat1	Upper + Lower saturation, IL=200mA	0.7	1.1	1.5	V
Output saturation voltage between F&R	△Vsat1	Output saturation voltage 1 between FWD and REV	-	-	0.1	V
Output saturation voltage 2	Vsat2	Upper + Lower saturation, IL=500mA	1.0	1.55	2.2	V
Output adjustable gain on "H" side voltage	VvtrH	VCTL=2V	7.4	9.2	11	dB
High level input voltage	VIH		1.5	-	Vcc	V
Low level input voltage	VIL		-0.3	-	0.5	V
High level input current	IiH	VFWD=VREV=5V	-	180	270	μA
<b>[Comparator]</b>						
Input offset voltage	Voofc		-	±1.0	±2.0	mV
Input common-mode voltage range	Vcmc		0	-	Vcc1-1.5	V
Voltage gain	Gvc	RL ≥ 15kΩ	50	200	-	V/mV
Output sink current	Iosc	Vout<1.5V	-	6.0	-	mA
Saturation voltage	Vsc	Iosc ≤ 4mA	-	250	400	mV

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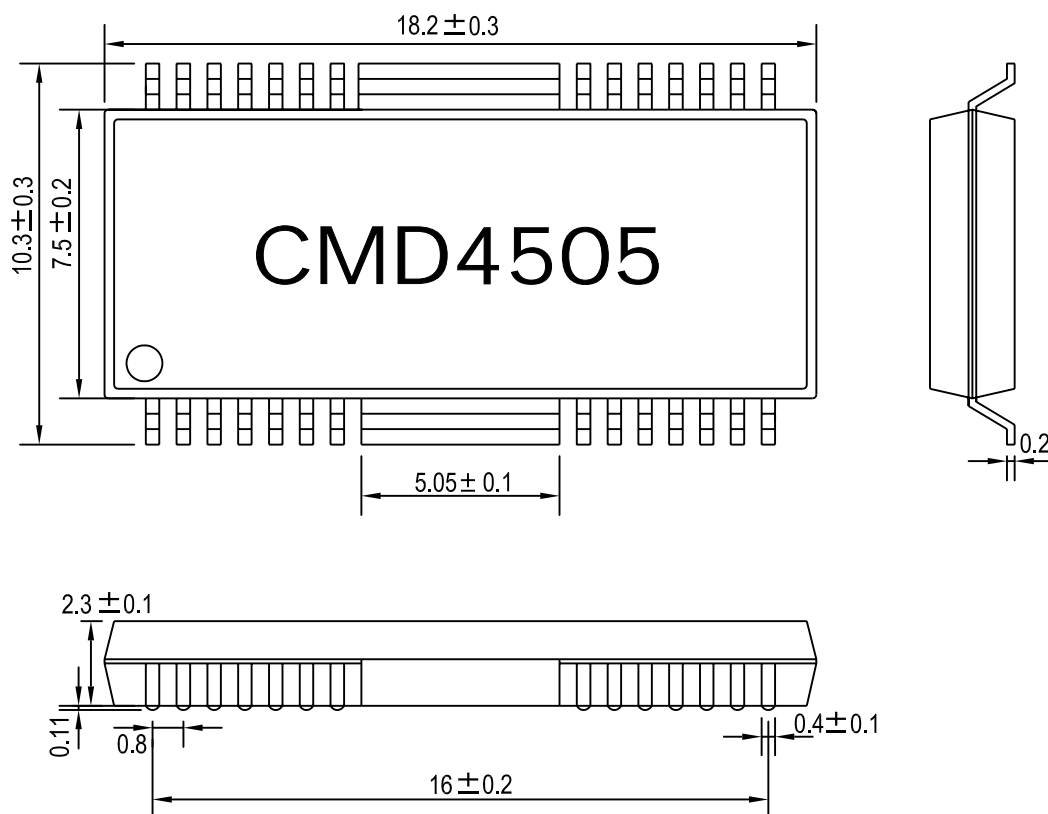
### Application Circuit



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### Mechanical Dimensions

Package: HSOP-28



Unit: mm