

Power driver for CD player

BA5962FVM

BA5962FVM is 1ch BTL power driver IC for CD / DVD. MSOP8 package enables the smallest configuration.
This IC enables reduction of external parts, built-in level shift circuit.

●Applications

CD player

●Features

- 1) 1ch BTL driver for CD / DVD.
- 2) MSOP8 package enables the smallest configuration.
- 3) Built in level shift circuit.
- 4) Built in thermal-shut-down circuit.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{CC}	18	V
Power dissipation	P _d	0.55	W
Operating temperature	T _{opr}	−35~+85	°C
Storage temperature	T _{stg}	−55~+150	°C

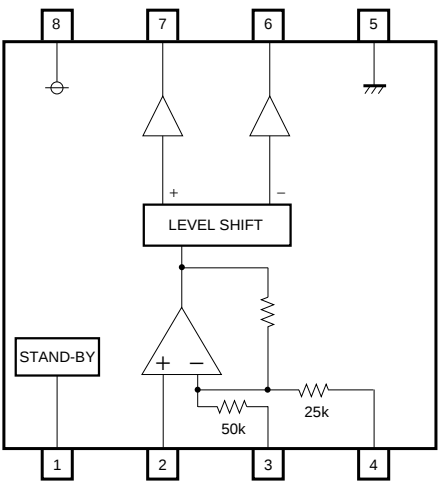
* PCB (70mm×70mm×1.6mm, glass epoxy) mounting.
Reduce power by 4.4mW for each degree above 25°C.

●Recommended operating conditions (Set the power supply voltage taking allowable dissipation into considering)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V _{CC}	3	5	10	V

Optical disc ICs

●Block diagram

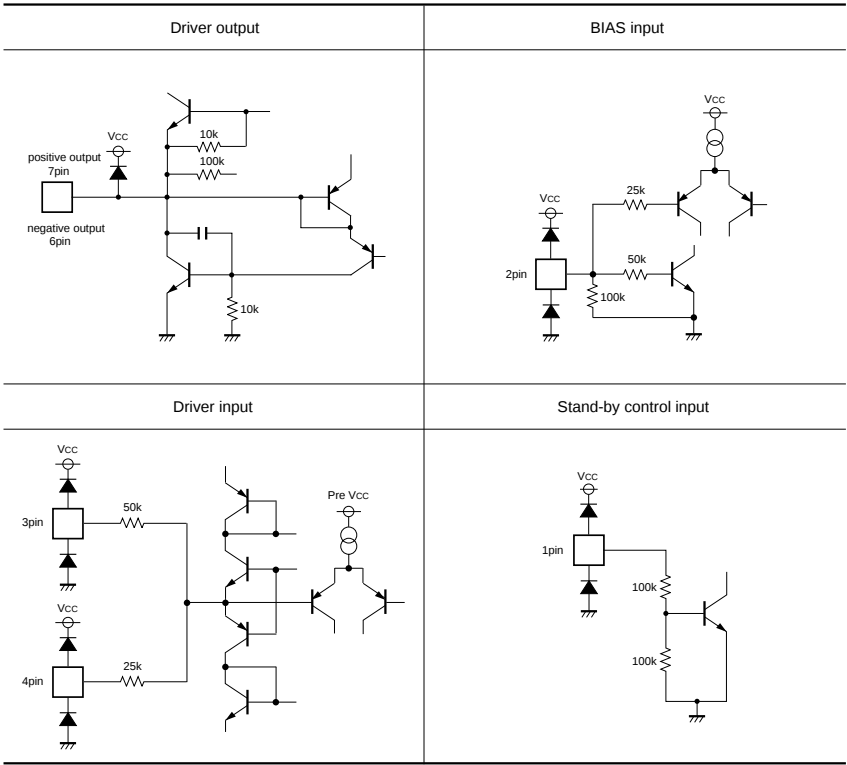


TSD : Thermal shut down

●Pin descriptions

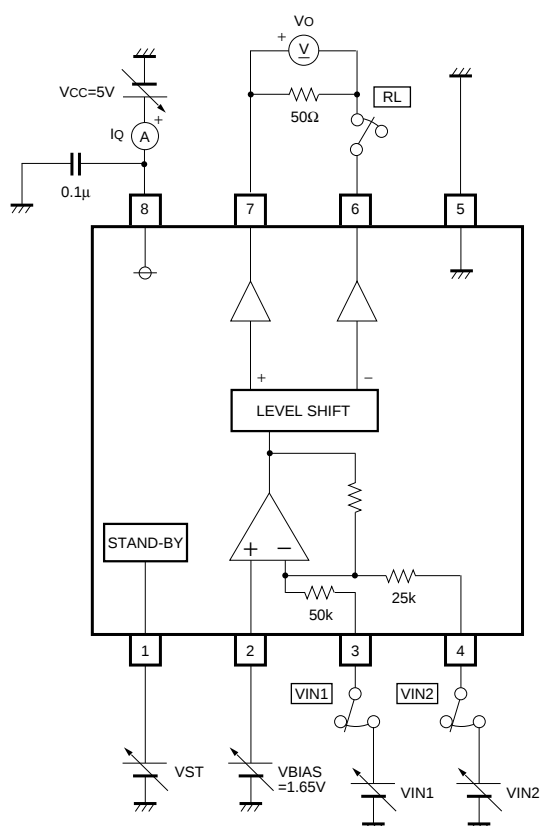
Pin No.	Pin name	Functions	Pin No.	Pin name	Functions
1	STBY	Stand-by control input	5	GND	GND
2	BIAS	Bias input	6	OUT-	Driver negative output
3	IN 1	Driver input 1 (Low gain)	7	OUT+	Driver positive output
4	IN 2	Driver input 2 (High gain)	8	Vcc	Power supply input

●Input output circuits



Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measuring circuit
Quiescent current without signal	I _Q	–	3	6	mA		Fig.1
<Driver block>							
Input voltage range	V _{INR}	0	~	V _{CC}	V		Fig.1
Output offset voltage	V _{OFF}	–40	–	40	mV	V _{IN} =BIAS=1.65V	Fig.1
Maximum output voltage amplitude	V _{OM}	3.7	4.1	–	V		Fig.1
Closed circuit gain 1 (Input IN1)	G _{VC1}	10	12	14	dB	V _{IN} =1.35V, 1.95V	Fig.1
Closed circuit gain 2 (Input IN2)	G _{VC2}	16	18	20	dB	V _{IN} =1.35V, 1.95V	Fig.1
Stand-by ON voltage	V _{STON}	–	–	0.5	V		Fig.1
Stand-by OFF voltage	V _{STOFF}	2.0	–	–	V		Fig.1
Bias terminal voltage drop mute ON-level voltage	V _{BMON}	–	–	0.4	V		Fig.1
Bias terminal voltage drop mute OFF-level voltage	V _{BMOFF}	1.0	–	–	V		Fig.1

- Measuring circuit

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Optical disc ICs

1. Switch table

Symbol	Switch			Input			Measuring point
	VIN 1	VIN 2	RL	VIN	VST		
IQ	OFF	OFF	OFF	—	2.0V		IQ
Voof	ON	ON	ON	1.65V	2.0V		VO
VOM 1	ON	OFF	ON	*1	2.0V	*1 VIN=0V and 5V	VO
VOM 2	OFF	ON	ON	*1	2.0V	*1 VIN=0V and 5V	VO
GVC 1	ON	OFF	ON	$\pm 0.3V$	2.0V	VIN=1.35V and 1.95V	VO
GVC 2	OFF	ON	ON	$\pm 0.3V$	2.0V	VIN=1.35V and 1.95V	VO
VSTOFF	ON	OFF	ON	5V	0.5V		VO
VSTON	ON	OFF	ON	5V	2.0V		VO

●Application example

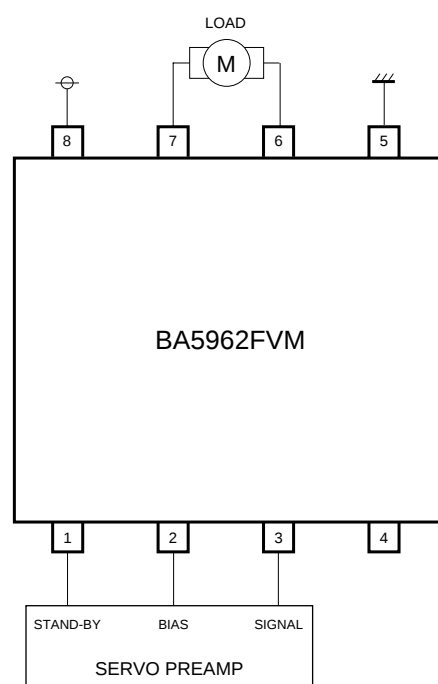


Fig.2

●Operation notes

1. A thermal-shutdown circuit (over-temperature protection circuit) is built in to prevent the IC from thermal breakdown. Use the IC under the thermal loss allowed to the package. In case the IC is left running over the allowable loss, the junction temperature rises, and the thermal-shutdown circuit works at the junction temperature of 160°C (typ.) (the outputs of the driver is turned off). When the junction temperature drops to 135°C (typ.), the IC start operating again.
2. When stand-by control terminal (Pin 1) drops below 0.5V, stand-by mode is established. Make sure that under normal operating conditions, this pin at 2.0V or above.
3. If Vcc (Pin 8) drops below 2.5V (typ.), the driver is turned off. When the voltage exceeds 2.7V (typ.) the driver returns to its previous state.

- ### ●Electrical characteristics curve



The drawing illustrates the MSOP8 package with the following dimensions and features:

- Top View:**
 - Overall width: 2.9 ± 0.1 mm
 - Pin pitch: 0.65 mm
 - Pin 1 indicator: A circle with the number 1 inside.
 - Pin dimensions: Pin 1 width is 0.475 mm; pins 2-5 width is 0.28 ± 0.1 mm.
 - Pin 8 width: 0.4 ± 0.2 mm
- Side View:**
 - Maximum height: 0.9 Max.
 - Stand-off height: 0.75 ± 0.05 mm
 - Lead thickness: 0.08 ± 0.05 mm
 - Lead angle: $0.22^\circ \pm 0.05^\circ$
 - Lead width at base: 0.65 mm
- Detail View:**
 - Lead thickness: 0.145 ± 0.03 mm
 - Lead width: 0.29 ± 0.15 mm
 - Lead angle: $10^\circ \pm 0.2^\circ$
- Surface Marking:**
 - Part number: $\text{Ⓜ} 0.08 \text{ Ⓜ}$
 - Symbol: $\triangle \text{ } 0.08 \text{ S}$