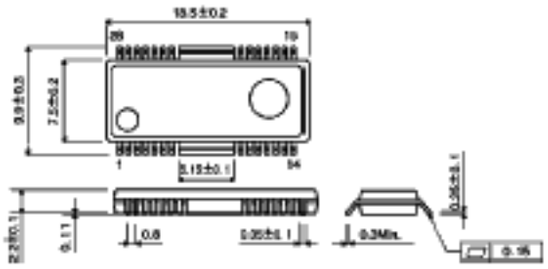
3-phase Motor Driver for DVD-ROM Spindle Motors
BD6663FM

●Description

The BD6663FM is a motor driver developed for high-speed CD-ROM and DVD-ROM applications that requires low power consumption and low heating. This is accomplished by applying PMOS Tr/DMOS Tr to Tr output and PWM operation.

●Dimension (Units : mm)



HSOP-M28

●Features

1) Direct PWM driver
2) Built-in power saving circuit
3) Built-in current limit circuit
4) Built-in FG output
5) Built-in Hall bias
6) Built-in reverse protection circuit
7) Low power consumption by MOSFET
8) Built-in short brake SW pin
9) Built-in rotation direction detect terminal

●Applications

DVD-ROM, DVD-RAM, CD-ROM, CD-R • RW

●Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage (For 5V voltage source)	V_{CC}	7	V
Supply voltage (For motor voltage source)	V_M	15	V
Power dissipation	Pd	2200 [1]	mW
Operating temperature range	Topr	−20 ~ +75	°C
Storage temperature range	Tstg	−55 ~ +150 [2]	°C
Output current	I_{OMAX}	2000 [2]	mA

1 Derating : 17.6mW/°C for operation above Ta=25°C
Mounting on 70mm 70mm 1.6mm glass epoxy board.
2 Do not, however exceed Pd, ASO and Tj=150°C.

●Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating supply voltage range	V_{CC}	4.5	—	5.5	V
	V_M	3	—	14	V

●Electrical characteristics (Unless otherwise noted, Ta=25°C, Vcc=5V, V_M=12V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
<Total>						
Circuit current 1	Icc1	—	—	0.2	mA	Stand-by mode
Circuit current 2	Icc2	—	7.5	—	mA	
<POWER SAVE>						
ON voltage range	V_{PSON}	—	—	1.0	V	Stand-by mode
OFFvoltge range	V_{PSOFF}	2.5	—	—	V	
<Short brake SW>						
ON voltage range	V_{SBON}	2.5	—	—	V	Short brake
OFF voltage range	V_{SBOFF}	—	—	1.0	V	
<Output>						
Output ON resistance	R_{ON}	—	0.6	0.9		Io=±600mA (Upper+Lower)
Torque limit voltage	V_{TL}	—	0.20	—	V	R_{NF}=0.33

●Block Diagram