



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

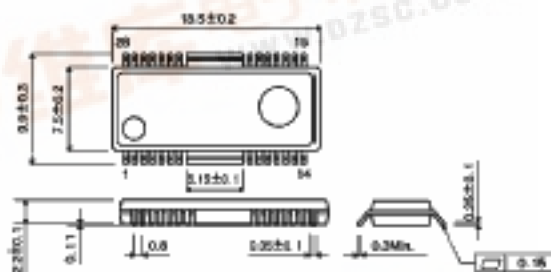
●Description

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.

●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

●Dimension (Units : mm)



HSOP-M28

●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 <sub>OC</sub>	7	V
Supply voltage (For motor voltage source)	V <sub>M</sub>	15	V
Power dissipation	P <sub>d</sub>	2200 <sup>1</sup>	mW
Operating temperature range	T <sub>opr</sub>	-20 ~ +75	°C
Storage temperature range	T <sub>stg</sub>	-55 ~ +150 <sup>2</sup>	°C
Output current	I <sub>OMAX</sub>	2000 <sup>2</sup>	mA

<sup>1</sup> Derating : 17.6mW/°C for operation above Ta=25°C  
Mounting on 70mm 70mm 1.6mm glass epoxy board.  
<sup>2</sup> 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 <sub>OC</sub>	4.5	—	5.5	V
	V <sub>M</sub>	3	—	14	V



● Electrical characteristics (Unless otherwise noted,  $T_a=25^{\circ}\text{C}$ ,  $V_{cc}=5\text{V}$ ,  $V_M=12\text{V}$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
<Total>						
Circuit current 1	$I_{cc1}$	—	—	0.2	mA	Stand-by mode
Circuit current 2	$I_{cc2}$	—	7.5	—	mA	
<POWER SAVE>						
ON voltage range	$V_{PSON}$	—	—	1.0	V	Stand-by mode
OFF voltage range	$V_{PSOFF}$	2.5	—	—	V	
<Short brake SW>						
ON voltage range	$V_{SBCON}$	2.5	—	—	V	Short brake
OFF voltage range	$V_{SBOFF}$	—	—	1.0	V	
<Output>						
Output ON resistance	$R_{ON}$	—	0.6	0.9		$I_o=\pm 600\text{mA}$ (Upper+Lower)
Torque limit voltage	$V_{TL}$	—	0.20	—	V	$R_{NF}=0.33$

● Block Diagram

