

<b>Structure</b>	Silicon Monolithic Integrated Circuit
<b>Product series</b>	7ch Power Driver for CD,DVD±RW,DVD-RAM
<b>Type</b>	<b>BD7776ARFS</b>
<b>Characteristic</b>	<ul style="list-style-type: none"> <li>• 3-phase-sensor-less system, therefore don't need three hall sensors.</li> <li>• Output current detection resistor is not necessary with internally equipped detection circuit.</li> </ul>

## ○Absolute maximum ratings

Parameter	Symbol	Limits	Unit
POWER MOS Power supply voltage	SPVM,SLVM	15 #1	V
Preblock/BTL powerblock Power supply voltage	Vcc, AVM,LDVM	15	V
PWM control block Power supply voltage	DVcc	7	V
Power dissipation	Pd	1.5 #2	W
Operating temperature range	Topr	-20~70	°C
Storage temperature	Tstg	-55~150	°C
Junction temperature	Tjmax	150	°C

#1 POWER MOS output terminals (29~32, 35~37pin) is contained.

#2 PCB (70mm×70mm×1.6mm,occupied copper foil is less than 3%,glass epoxy standard board) mounting.  
Reduce power by 12mW for each degree above 25°C.

## ○Recommended operating conditions (Ta=-20~+70°C)

(Set the power supply voltage taking allowable dissipation into considering)

Parameter	Symbol	MIN	TYP	MAX	Unit
Spindle driver powerblock power supply voltage	SPVM	—	Vcc#3	—	V
Sled motor driver powerblock power supply voltage	SLVM	—	Vcc#3	—	V
Preblock power supply voltage	Vcc	10.8	12	13.2	V
Loading driver power block power supply voltage	LDVM	4.3	5.0	Vcc#3	V
Actuator driver powerblock power supply voltage	AVM	4.3	5.0	5.5	V
PWM control block power supply voltage	DVcc	4.3	5.0	5.5	V
Spindle driver output current	Iosp	—	1.0	2.5#4	A
Actuator/sled motor/loading motor driver output current	Ioo	—	0.5	0.8	A

#3 Set the same supply voltage to SPVM,SLVM and Vcc.

#4 The current is guaranteed 3.5A in case of the Short-circuit braking mode and the current which is turned on/off in a duty-ratio of less than 1/10 with a maximum on-time of 5msec.

This product isn't designed for protection against radioactive rays.

**Status of this document**

The Japanese version of this document is the formal specification.

A customer may use this translation version only for a reference to help reading the formal version.

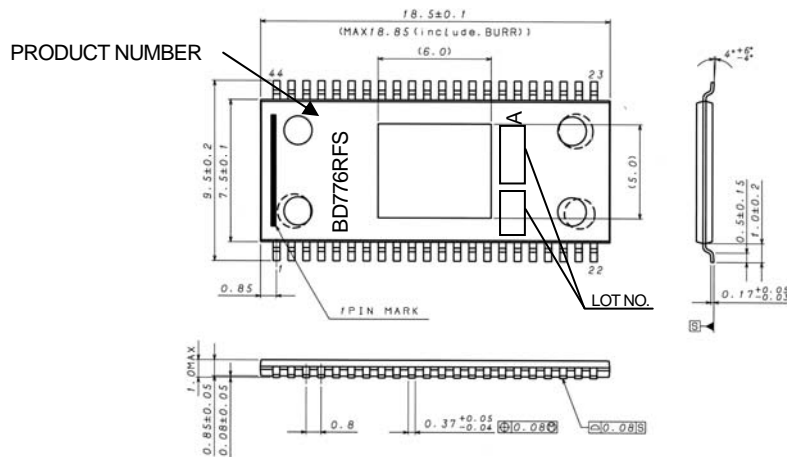
If there are any differences in translation version of this document , formal version takes priority.

○Electrical characteristics

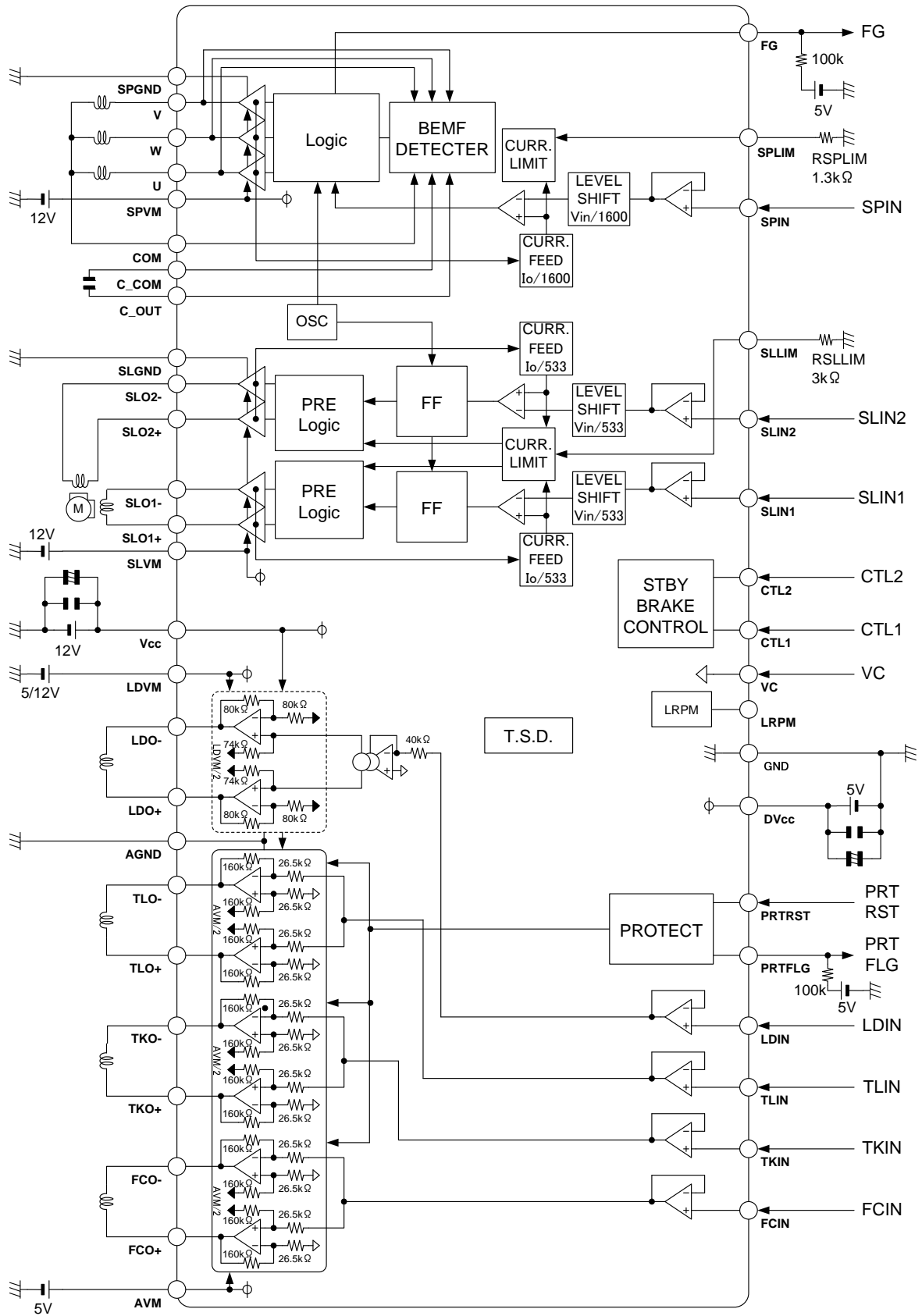
(Unless otherwise noted, Ta=25°C, Vcc=SPVM=SLVM=12V, DVcc=AVM=LDVM=5V, VC=1.65V, RL=8Ω, RLSP=2Ω)

Parameter		Symbol	MIN.	TYP.	MAX.	Unit	Condition
<b>Circuit current</b>	Quiescent current 1	IQ1	—	14	25	mA	Vcc (When Loading OFF)
	Quiescent current 2	IQ2	—	7	12	mA	Vcc (When Loading ON)
	Quiescent current 3	IQ3	—	6.5	11	mA	DVcc
	Standby-on current1	IST1	—	0	100	μA	Vcc
	Standby-on current 2	IST2	—	0	100	μA	DVcc
<b>Sled motor driver block</b>	Input dead zone (one side)	VDZSL	0	20	80	mV	
	Input output gain	gmSL	0.75	1.0	1.25	A/V	RSLIM=3kΩ
	Output ON resistor	RONSL	—	2.2	3.0	Ω	IL=500mA
	Output limit current	ILIMSL	0.85	1.0	1.15	A	RSLIM=3kΩ
	PWM frequency	fsl	—	100	—	kHz	
<b>Spindle driver block</b>	Input dead zone (one side)1	VDZSP1	20	55	90	mV	VLRPM=L
	Input dead zone (one side)2	VDZSP2	20	220	450	mV	VLRPM=H
	Input output gain H	gmSPH	2.3	3.0	3.7	A/V	RSPLIM=1.3kΩ, VLRPM=L
	Input output gain L	gmSPL	0.46	0.6	0.74	A/V	RSPLIM=1.3kΩ, VLRPM=H
	Output ON resistor	RONSP	—	1.1	1.7	Ω	IL=500mA
	Output limit current	ILIMSP	1.3	1.55	1.8	A	RSPLIM=1.3kΩ
	PWM frequency	fsp	—	167	—	kHz	
<b>Focus driver block</b>	Output offset voltage	VOFF	-20	0	20	mV	
	Output saturation Voltage	VOHF	—	0.7	1.6	V	IL=500mA
	Voltage gain H	GVFH	19.6	21.6	23.6	dB	VLRPM=L
	Voltage gain L	GVFL	13.6	15.6	17.6	dB	VLRPM=H
<b>Tracking driver block</b>	Output offset voltage	VOFT	-20	0	20	mV	
	Output saturation Voltage	VOHT	—	0.7	1.6	V	IL=500mA
	Voltage gain	GVT	19.6	21.6	23.6	dB	
<b>Tilt driver block</b>	Output offset voltage	VOFTL	-50	0	50	mV	
	Output saturation Voltage	VOHTL	—	0.7	1.6	V	IL=500mA
	Voltage gain	GVTL	19.6	21.6	23.6	dB	
<b>Loading driver block</b>	Output offset voltage	VOFLD	-50	0	50	mV	
	Output saturation Voltage 1	VOLD1	—	0.6	1.6	V	IL=500mA, LDVM=5V
	Output saturation Voltage 2	VOLD2	—	1.9	3.5	V	IL=500mA, LDVM=12V
	Voltage gain	GVLD	15.5	17.5	19.5	dB	
<b>Others</b>	VC drop-muting	VMVC	0.4	0.7	1.0	V	
	Vcc drop-muting	VMVcc	3.45	3.85	4.25	V	

○Package outlines



HTSSOP-A44R (UNIT : mm)



### Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

It is our top priority to supply products with the utmost quality and reliability. However, there is always a chance of failure due to unexpected factors. Therefore, please take into account the derating characteristics and allow for sufficient safety features, such as extra margin, anti-flammability, and fail-safe measures when designing in order to prevent possible accidents that may result in bodily harm or fire caused by component failure. ROHM cannot be held responsible for any damages arising from the use of the products under conditions out of the range of the specifications or due to non-compliance with the NOTES specified in this catalog.

Thank you for your accessing to ROHM product informations.

More detail product informations and catalogs are available, please contact your nearest sales office.

**ROHM** Customer Support System

THE AMERICAS / EUROPE / ASIA / JAPAN

[www.rohm.com](http://www.rohm.com)

Contact us : [webmaster@rohm.co.jp](mailto:webmaster@rohm.co.jp)