

# 2-channel BTL driver for CD players

## BA6792FP / BA6792FP-Y

The BA6792FP and BA6792FP-Y are 2-channel BTL drivers for CD player actuator drives. HSOP 28 and 25-pin packages allow for compact applications.

### ●Applications

CD players and CD-ROM drives

### ●Features

- 1) 2 channel dedicated BTL drivers.
- 2) HSOP 28 and 25-pin power packages for compact applications.
- 3) Gain is adjustable with an attached resistor.
- 4) Internal thermal shutdown circuit.

### ●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Power supply voltage		V <sub>cc</sub>	18	V
Power dissipation	BA6792FP	P <sub>d</sub>	1700*1	mW
	BA6792FP-Y		1450*2	
Operating temperature		T <sub>opr</sub>	-35~+85	°C
Storage temperature		T <sub>stg</sub>	-55~+150	°C

\*1. When mounted on a 50 mm × 50 mm × 1 mm paper phenol PCB board.

Reduced by 13.6 mW for each increase in Ta of 1°C over 25°C.

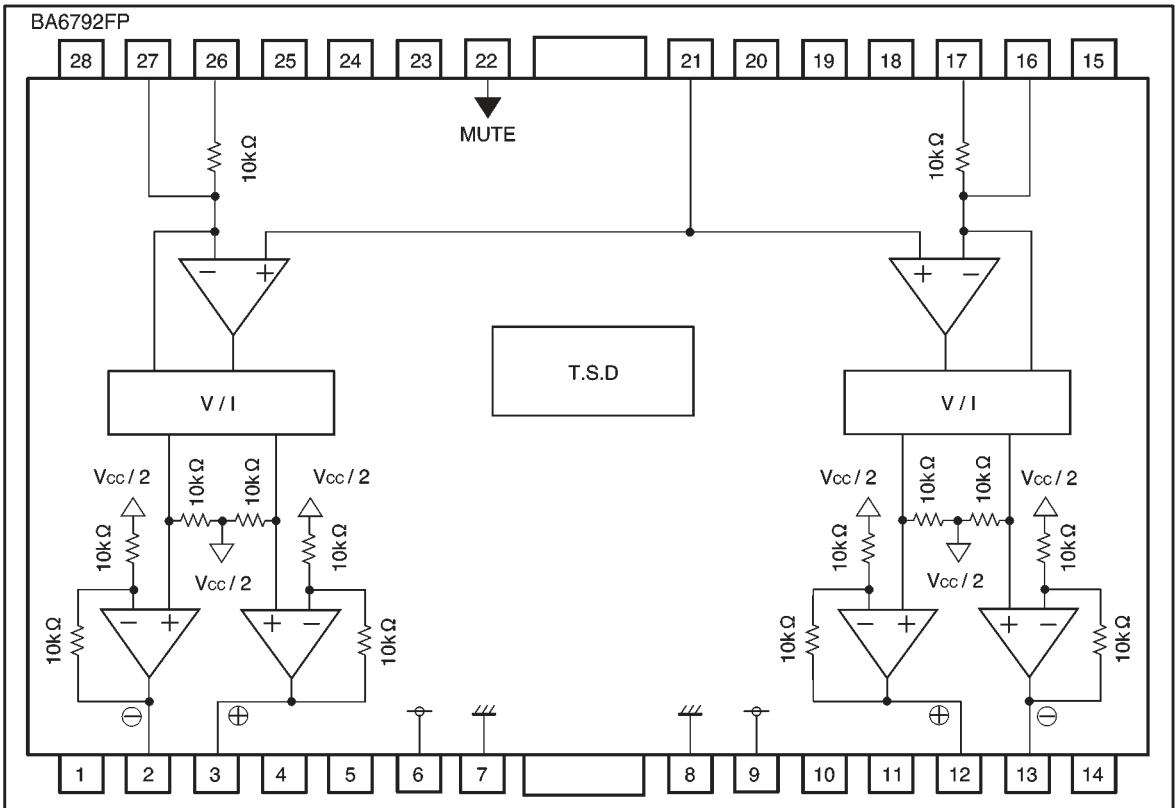
\*2. When mounted on a 50 mm × 50 mm × 1 mm paper phenol PCB board.

Reduced by 11.6 mW for each increase in Ta of 1°C over 25°C.

### ●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V <sub>cc</sub>	4.5	—	13.5	V

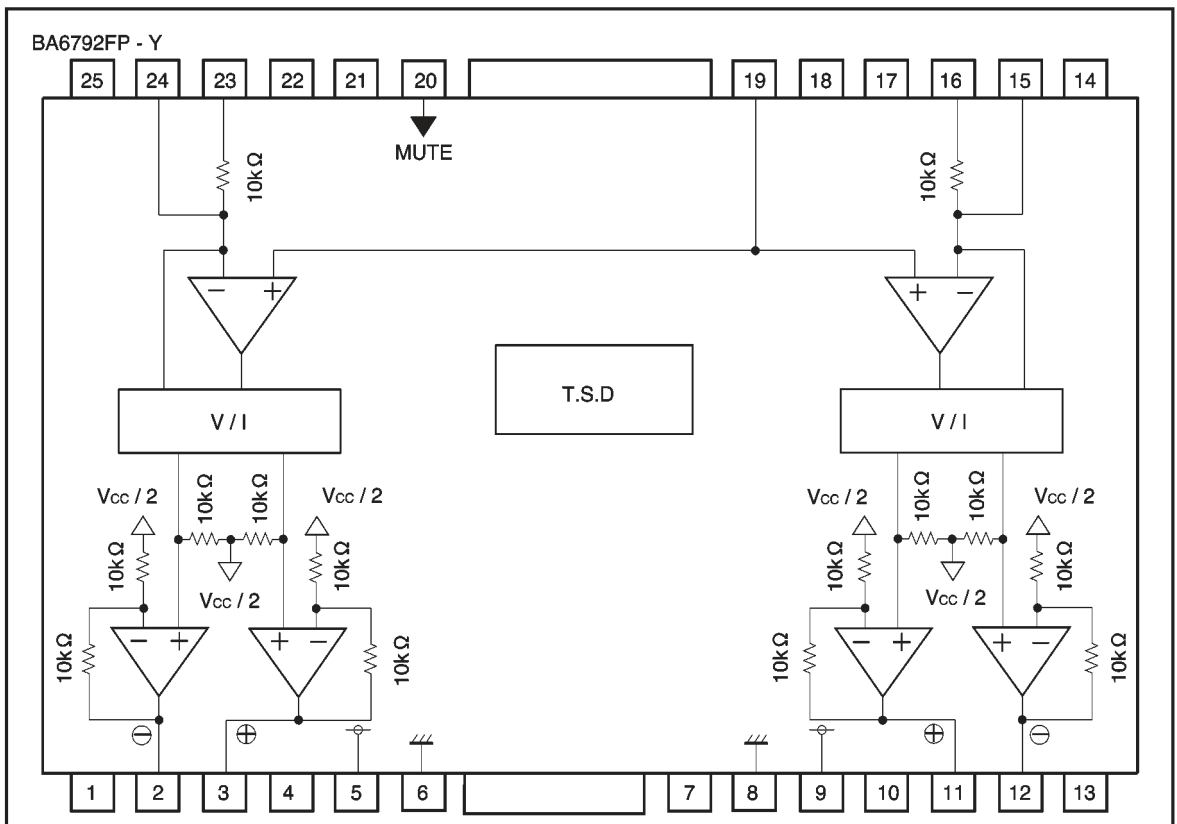
## ● Block diagram



## ● Pin descriptions (BA6792FP)

Pin No.	Pin name	Function	Pin No.	Pin name	Function
1	N.C.	—	15	N.C.	—
2	OUT <sub>1</sub> -	Channel 1 negative output	16	IN <sub>2</sub> '	Channel 2 gain adjustment input
3	OUT <sub>1</sub> +	Channel 1 positive output	17	IN <sub>2</sub>	Channel 2 gain fixing input
4	N.C.	—	18	N.C.	—
5	N.C.	—	19	N.C.	—
6	V <sub>cc</sub>	V <sub>cc</sub>	20	N.C.	—
7	GND	Substrate ground	21	BIAS	Bias input
8	GND	Substrate ground	22	MUTE	Muting
9	V <sub>cc</sub>	V <sub>cc</sub>	23	N.C.	—
10	N.C.	—	24	N.C.	—
11	N.C.	—	25	N.C.	—
12	OUT <sub>2</sub> +	Channel 2 positive output	26	IN <sub>1</sub>	Channel 1 gain fixing input
13	OUT <sub>2</sub> -	Channel 2 negative output	27	IN <sub>1</sub> '	Channel 1 gain adjusting input
14	N.C.	—	28	N.C.	—

\* Positive output and negative output is relative to the polarity of the input pins.



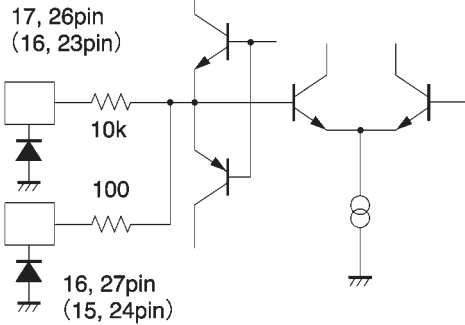
● Pin descriptions (BA6792FP - Y)

Pin No.	Pin name	Function	Pin No.	Pin name	Function
1	N.C.	—	14	N.C.	—
2	OUT1—	Channel 1 negative output	15	IN2'	Channel 2 gain adjustment input
3	OUT1+	Channel 1 positive output	16	IN2	Channel 2 gain fixing input
4	N.C.	—	17	N.C.	—
5	V <sub>cc</sub>	V <sub>cc</sub>	18	N.C.	—
6	GND	Substrate ground	19	BIAS	Bias input
7	N.C.	—	20	MUTE	Muting
8	GND	Substrate ground	21	N.C.	—
9	V <sub>cc</sub>	V <sub>cc</sub>	22	N.C.	—
10	N.C.	—	23	IN1	Channel 1 gain fixing input
11	OUT2+	Channel 2 positive output	24	IN1'	Channel 1 gain adjusting input
12	OUT2—	Channel 2 negative output	25	N.C.	—
13	N.C.	—			

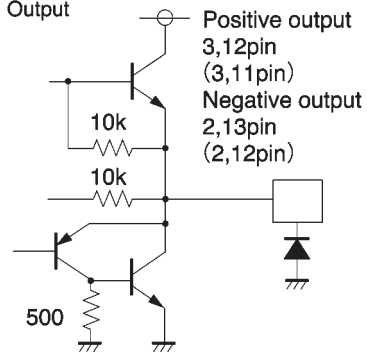
\* Positive output and negative output is relative to polarity of the input pins.

● Pin equivalent circuit diagrams

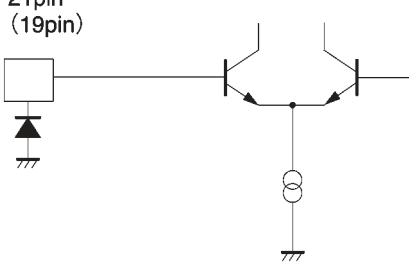
Driver Input



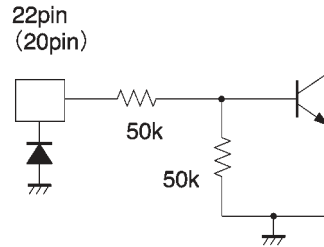
Driver Output



Bias



Mute



( ) BA6792FP-Y Pin no.

● Electrical characteristics (unless otherwise noted,  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 8\text{V}$ ,  $f = 1\text{KHz}$ ,  $R_L = 8\Omega$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Quiescent current dissipation	$I_{CC}$	—	4.5	7.5	mA	No load
Output offset voltage	$V_{OO}$	-50	0	50	mV	—
Maximum output amplitude 1	VOM1	5.0	5.5	—	V	—
Maximum output amplitude 2	VOM2	2.7	3.0	—	V	$V_{CC}=5\text{V}$
Closed loop voltage gain	$G_{VC}$	10.5	12.0	13.5	dB	$V_{IN}=\text{BIAS}\pm 0.5\text{V}$
Ripple rejection	RR	—	60	—	dB	$V_{IN}=0.1\text{Vrms}$ , 100Hz
Slew rate	SR	—	2.0	—	$\text{V} / \mu\text{s}$	100 kHz square wave, 3 $V_{P-P}$ output
Mute-on voltage	VMON	GND	—	0.5	V	—
Mute-off voltage	VMOFF	2.0	—	$V_{CC}$	V	—

© Not designed for radiation resistance.

● Measurement circuit

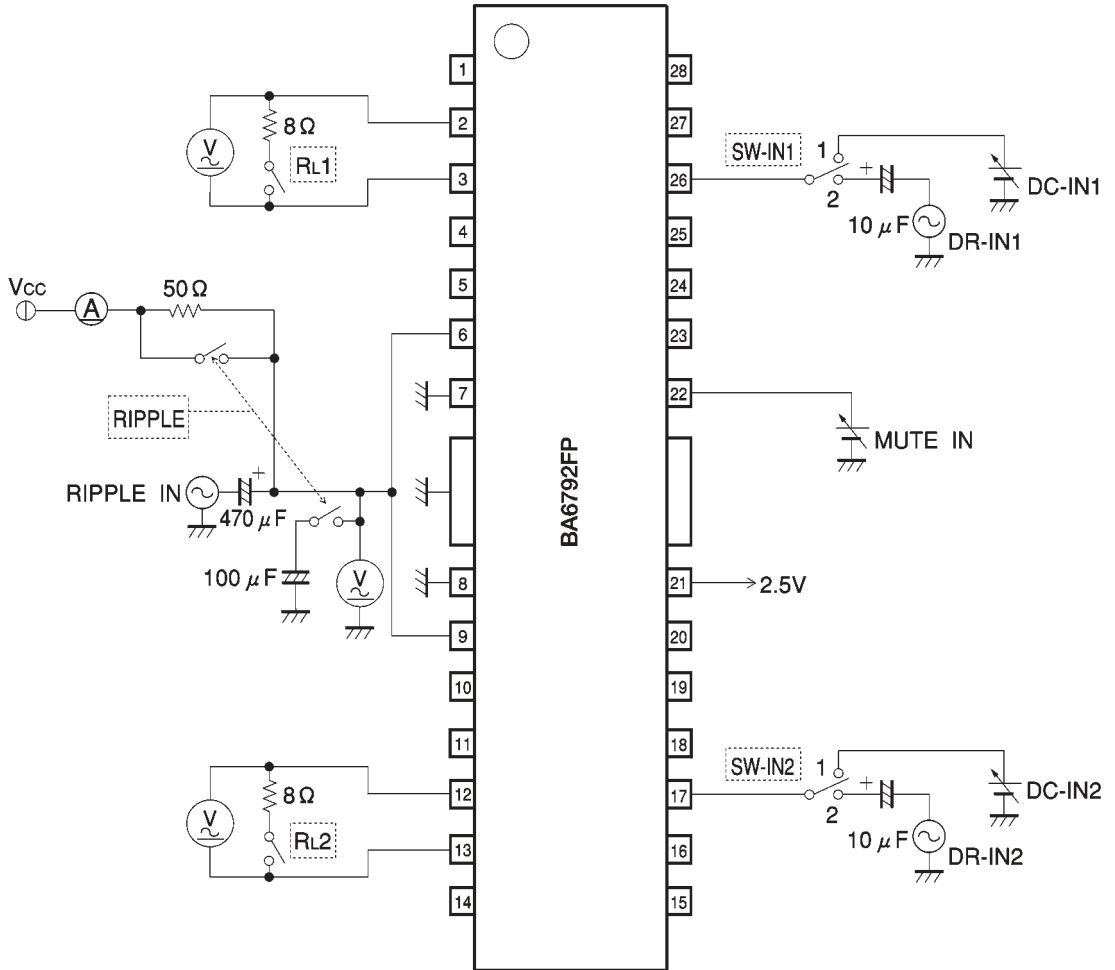


Fig.1

## ●Application example (BA6792FP)

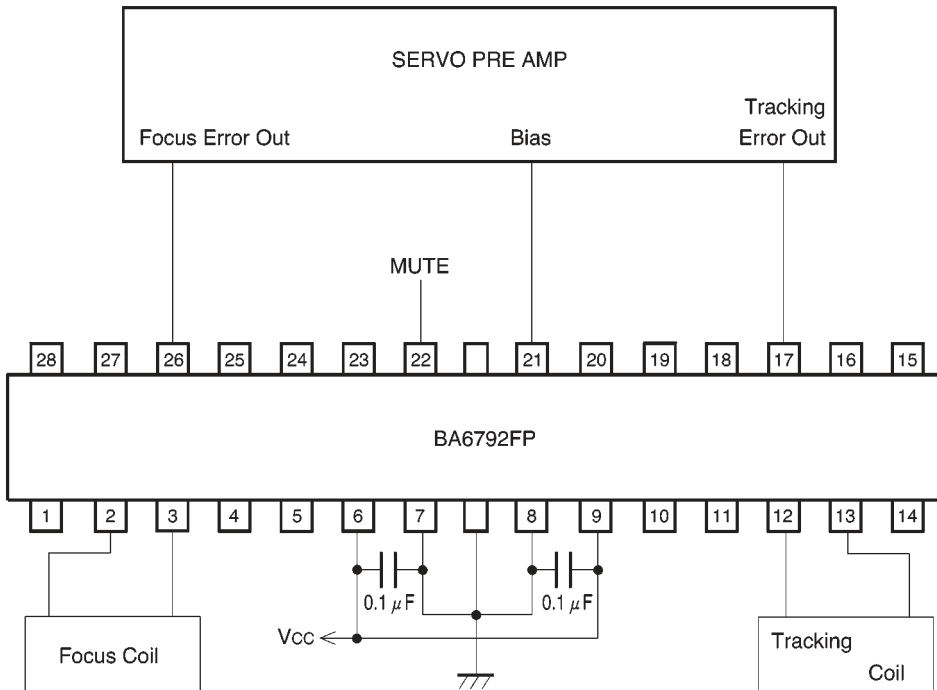


Fig. 2

## ●Operation notes

(1) The BA6792FP and BA6792FP-Y have an internal thermal shutdown circuit. The output current is muted when the chip temperature rises above 175°C (typically). The driver circuit is restored when the chip temperature rises above 150°C (typically).

(2) The output current can be muted by opening the mute pin voltage or lowering it below 0.5V. This pin should be pulled up above 2.0V during normal operation.

(3) Muting also occurs when the bias pin voltage drops below 1.4V (typically). This pin should stay above 2.0V during normal operation.

(4) Muting occurs during thermal shutdown, mute-on operations or a drop in the bias pin voltage. In each case, only the drivers are muted. During muting, the output pins remain at the internal bias voltage, roughly  $(V_{cc} / 2)$ .

(5) Attach a bypass capacitor (roughly 0.1μF) between the power supplies, at the base of the IC.

(6) The radiating fin is connected to the package's internal GND, but should also be connected to an external ground.

●Electrical characteristic curves

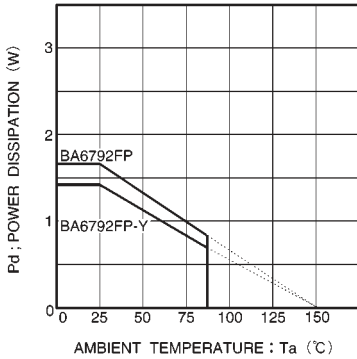


Fig. 3 Thermal derating curve

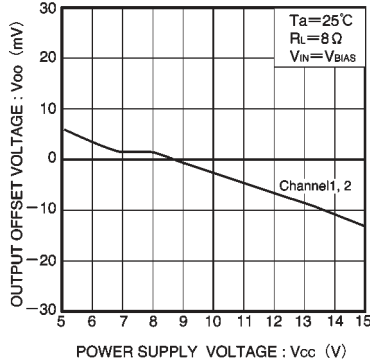


Fig. 4 Power supply voltage vs. output offset voltage

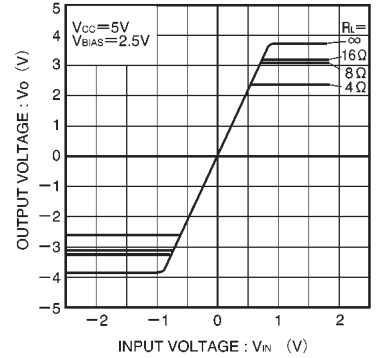


Fig. 5 Input and output characteristics (Vcc = 5V, variable load)

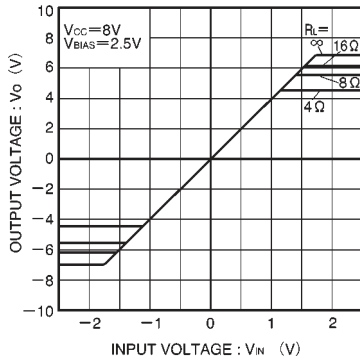


Fig. 6 Input and output characteristics (Vcc = 8V, variable load)

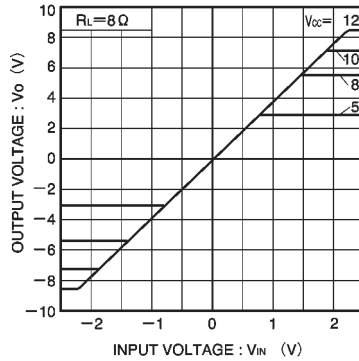
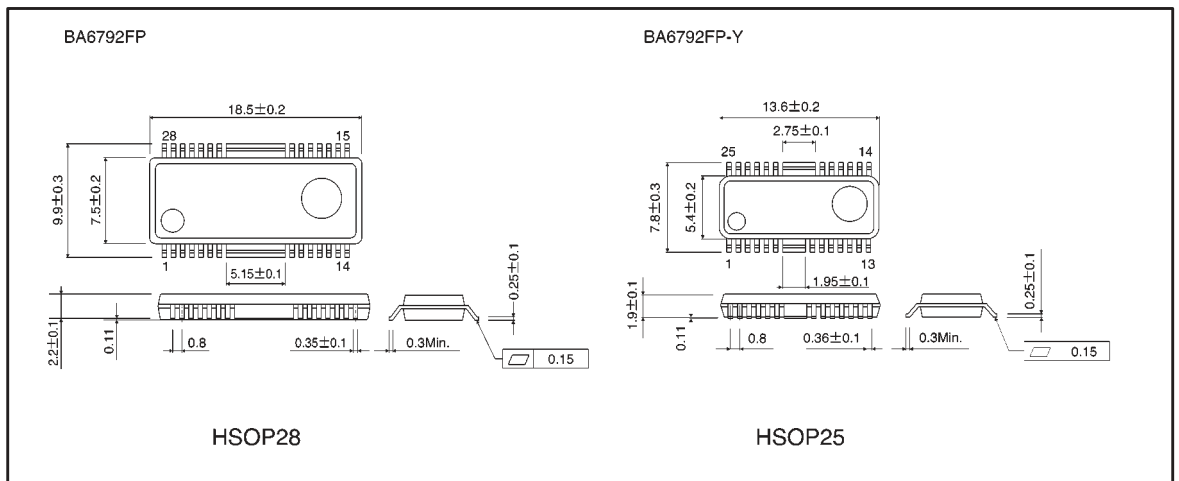


Fig. 7 Input and output characteristics (variable Vcc)

●External dimensions (Units: 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 use silicon as a basic material.  
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.

#### About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.