

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA2035F

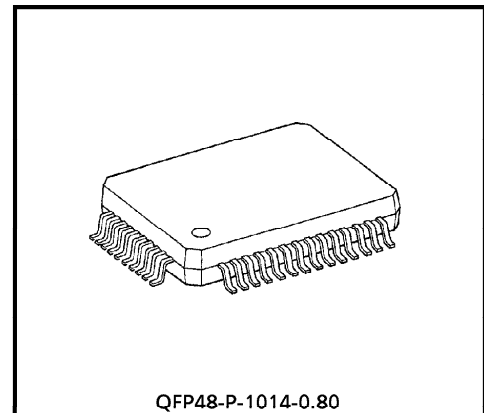
CD FOCUS TRACKING SERVO LSI

The TA2035F is a 3-beam PUH compatible focus tracking servo LSI to be used in the CD player system.

In combination with a CMOS single chip processor TC9236AF/TC9263AF/TC9284BF/TC9403F a CD player system can be composed very simply.

FEATURES

- Built-in RF amp. focus error amp, and tracking error amp.
- Built-in focus tracking servo amp.
- Built-in phase compensation and LPF amp.
- Built-in auto laser power control (ALPC) amp.
- Connections between actuator and power driver IC for motor driver allow simplified structuring DC player system.
- Double speed play is possible.
- Low power operation is possible. (3.5~5.5V)



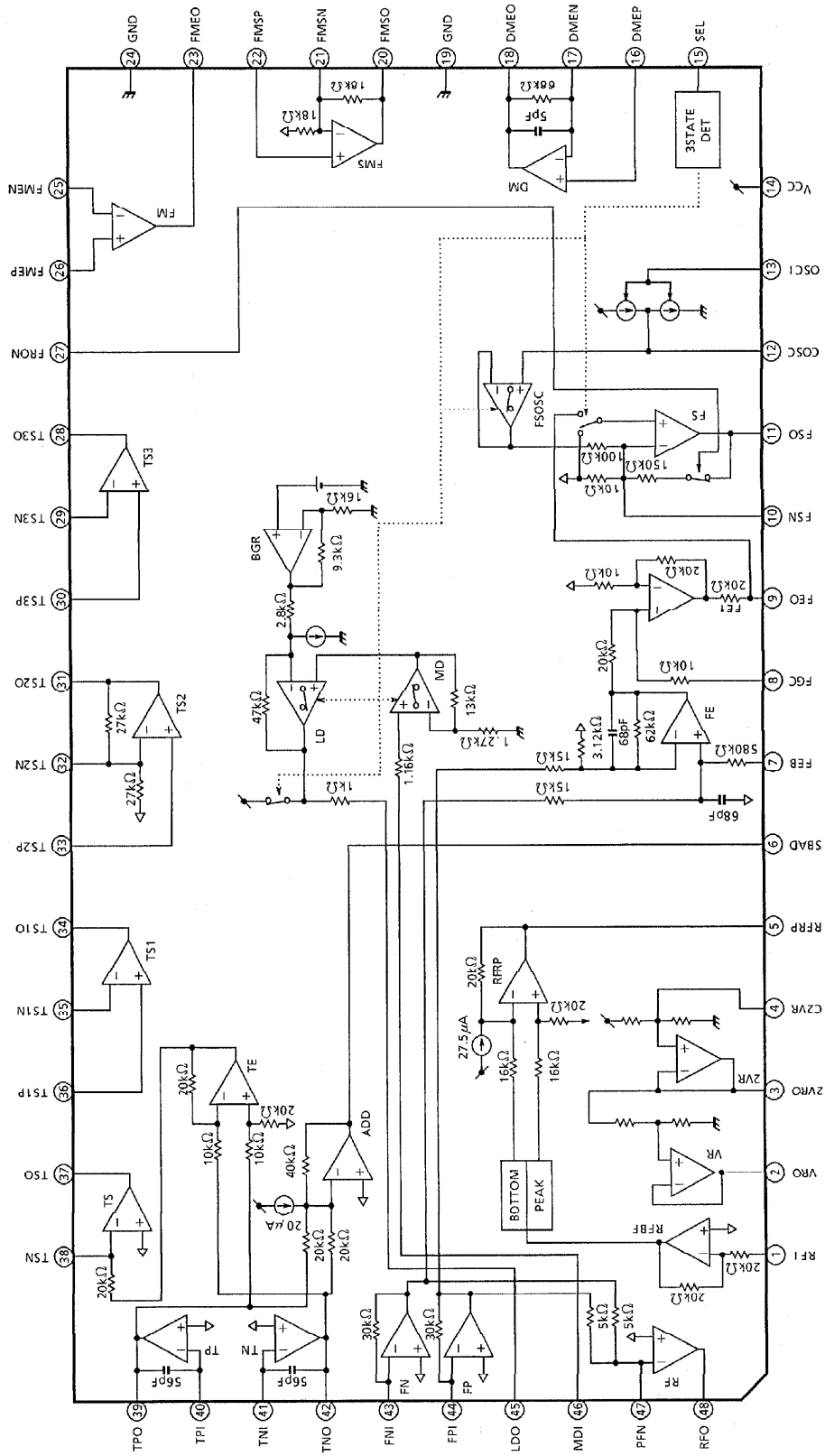
QFP48-P-1014-0.80

Weight : 0.83g (Typ.)

961001EBA2

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

BLOCK DIAGRAM



TA2035F - 2(B4)

PIN FUNCTION

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARK
1	RFI	I	RF ripple signal generating circuit input terminal.	Connected to RFO through C.
2	VRO	O	V _{REF} amp output terminal.	—
3	2VRO	O	2V _{REF} amp output terminal.	—
4	C2VR	O	2V _{REF} filter capacitor connecting terminal.	—
5	RFRP	O	RF ripple signal output terminal.	—
6	SBAD	O	Defects detection signal output terminal.	—
7	FEB	I	Focus error balance adjusting input terminal.	Adjusting semi-fixed resistor is connected.
8	FGC	I	Focus error amp gain control terminal.	—
9	FEO	O	Focus error amp output terminal.	Gain adjusting resistor is connected.
10	FSN	I	Focus output amp negative phase input terminal.	Connected to FSO through feedback CR.
11	FSO	O	Focus output amp output terminal.	—
12	COSC	O	Focus search signal generating capacitor connecting terminal.	—
13	OSCI	I	Focus search signal generating built-in current source control input terminal.	—
14	V _{CC}	—	Power source terminal.	—
15	SEL	I	Analog switch control signal input terminal.	—
16	DMEP	I	Disc motor amp positive phase input terminal.	—
17	DMEN	I	Disc motor amp negative phase input terminal.	—
18	DMEO	O	Disc motor amp output terminal.	—
19	GND	—	Ground terminal.	—
20	FMSO	O	Feed motor servo amp output terminal.	—
21	FMSN	I	Feed motor servo amp negative phase input terminal.	—
22	F MSP	I	Feed motor servo amp positive phase input terminal.	—
23	FMEO	O	Feed motor amp output terminal.	—
24	GND	—	Ground terminal.	—
25	FMEN	I	Feed motor amp negative phase input terminal.	—
26	FMEP	I	Feed motor amp positive phase input terminal.	—
27	FRON	I	Focus output amp feedback resistor ON/OFF control terminal. Analog switch is off at "L".	—
28	TS3O	O	Tracking servo amp 3 output terminal.	—
29	TS3N	I	Tracking servo amp 3 negative phase input terminal.	—
30	TS3P	I	Tracking servo amp 3 positive phase input terminal.	—
31	TS2O	O	Tracking servo amp 2 output terminal.	—
32	TS2N	I	Tracking servo amp 2 negative phase input terminal.	—

PIN No.	SYMBOL	I/O	FUNCTIONAL DESCRIPTION	REMARK
33	TS2P	I	Tracking servo amp 2 positive phase input terminal.	—
34	TS1O	O	Tracking servo amp 1 output terminal.	—
35	TS1N	I	Tracking servo amp 1 negative phase input terminal.	Connected to TS1O through feedback CR.
36	TS1P	I	Tracking servo amp 1 positive phase input terminal.	—
37	TSO	O	Tracking output amp output terminal.	—
38	TSN	I	Tracking output amp negative phase input terminal.	Connected to TSO through feedback CR.
39	TPO	O	Sub-beam I-V amp output terminal.	Connected to TPI through adjusting feedback resistor.
40	TPI	I	Sub-beam I-V amp input terminal.	Connected to PIN diode F.
41	TNI	I	Sub-beam I-V amp input terminal.	Connected to PIN diode E.
42	TNO	O	Sub-beam I-V amp output terminal.	Connected to TNI through adjusting feedback resistor.
43	FNI	I	Main-beam I-V amp input terminal.	Connected to PIN diode A + C.
44	FPI	I	Main-beam I-V amp input terminal.	Connected to PIN diode B + D.
45	LDO	O	Laser diode amp output terminal.	Connected to laser diode circuit.
46	MDI	I	Monitor photo diode amp input terminal.	Connected to monitor photo diode.
47	RFN	I	RF amp negative phase input terminal.	Connected to RFO through feedback resistor.
48	RFO	O	RF amp output terminal.	—

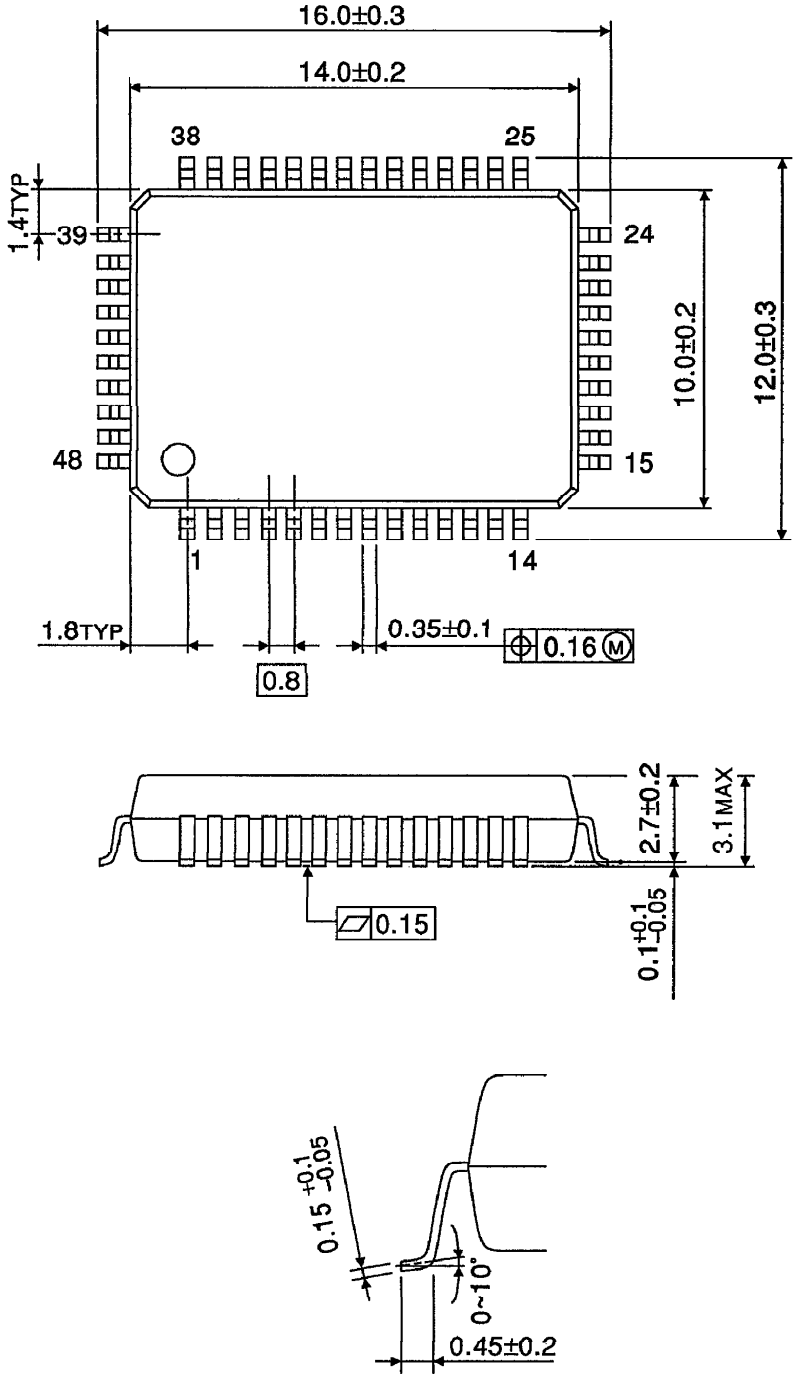
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V _{CC} -V _{EE}	- 0.3~12.0	V
Power Dissipation	P _D (Note)	890	mW
Operating Temperature	T _{opr}	- 35~85	°C
Storage Temperature	T _{stg}	- 55~150	°C

(Note) Derated above Ta = 25°C in the proportion of 7.1mW/°C.

OUTLINE DRAWING
QFP48-P-1014-0.80

Unit : mm



Weight : 0.83g (Typ.)