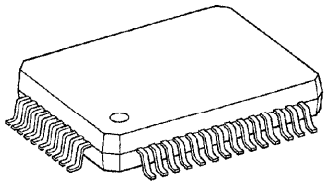
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

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.

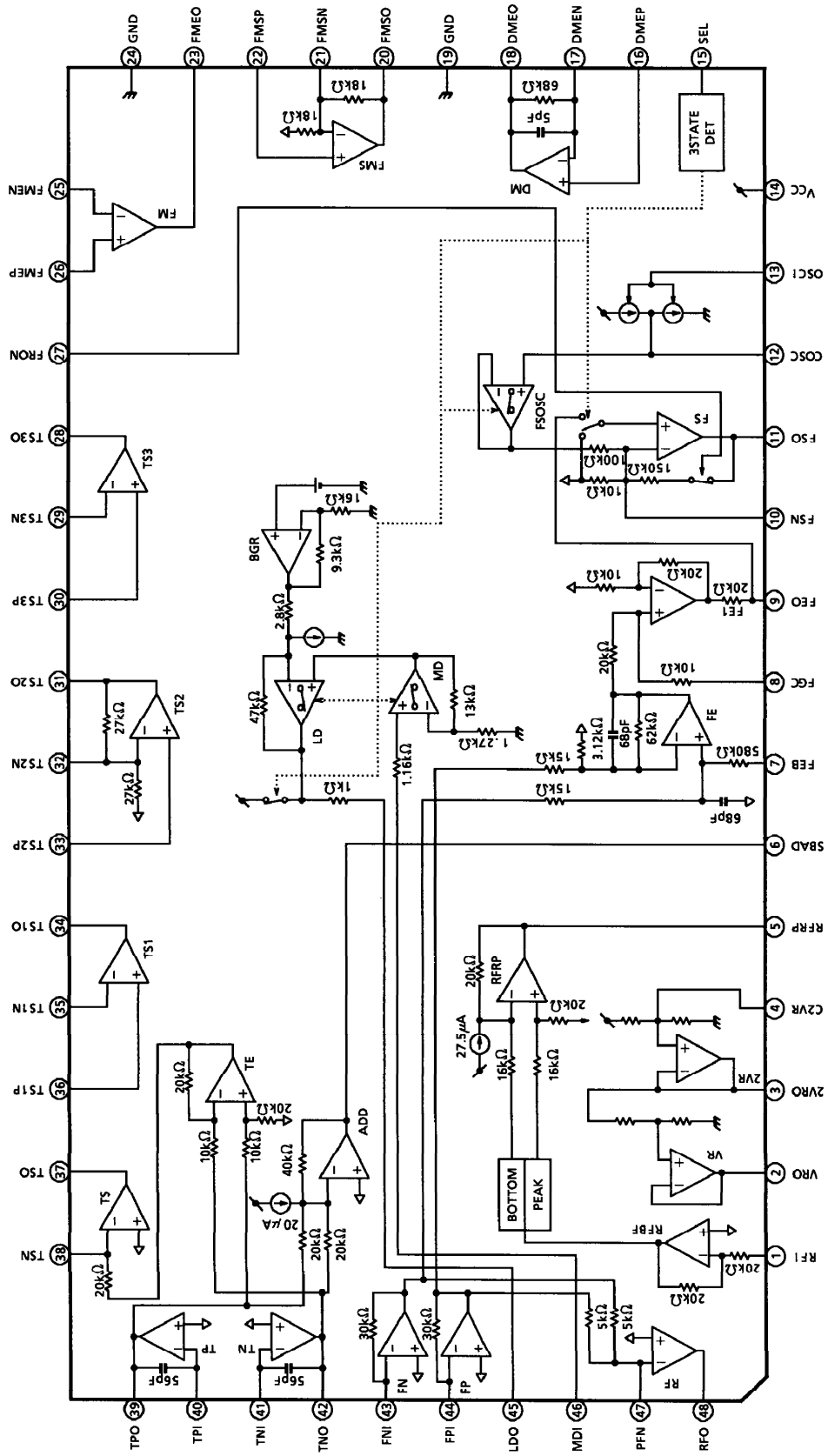


QFP48-P-1014-0.80

Weight : 0.83g (Typ.)

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)



BLOCK DIAGRAM

TA2035F – 2

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	FMSP	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.	—

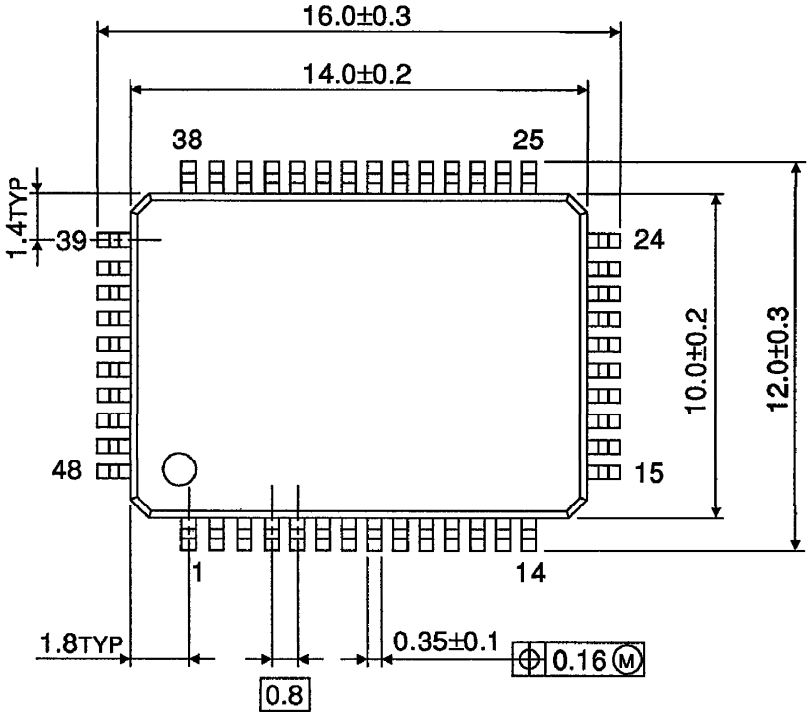
MAXIMUM RATINGS (Ta = 25°C)

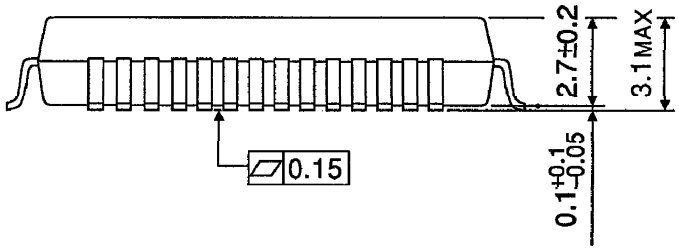
CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V_{CC}-V_{EE}	−0.3~12.0	V
Power Dissipation	P_D (Note)	890	mW
Operating Temperature	T_{opr}	−35~85	°C
Storage Temperature	T_{stg}	−55~150	°C

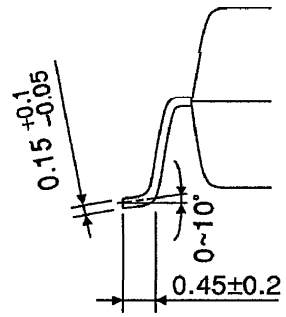
(Note) Derated above Ta = 25°C in the proportion of 7.1mW / °C.

PACKAGE DIMENSIONS

QFP48-P-1014-0.80 Unit : mm







Weight : 0.83g (Typ.)

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