

TOSHIBA

TA2122AFN

UNDER DEVELOPMENT

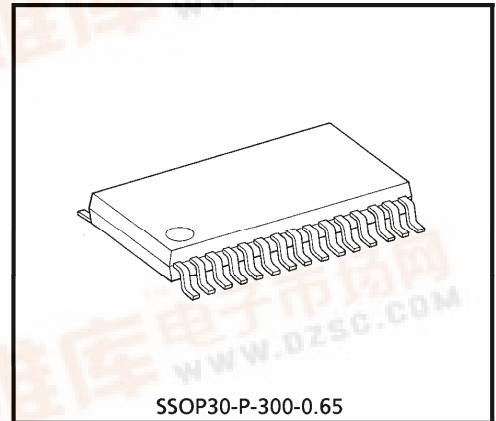
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT
SILICON MONOLITHIC

TA2122AFN

RF AMPLIFIER FOR DIGITAL SERVO CD SYSTEM

TA2122AFN is a 3-beam type PUH and 1-beam type PUH compatible RF Amplifier for Digital Servo to be used in the CD system.

In combination with a CMOS single chip processor TC9432AF, TC9462F and TC9495F, a CD system can be composed very simply.



Weight : 0.17 g (Typ.)

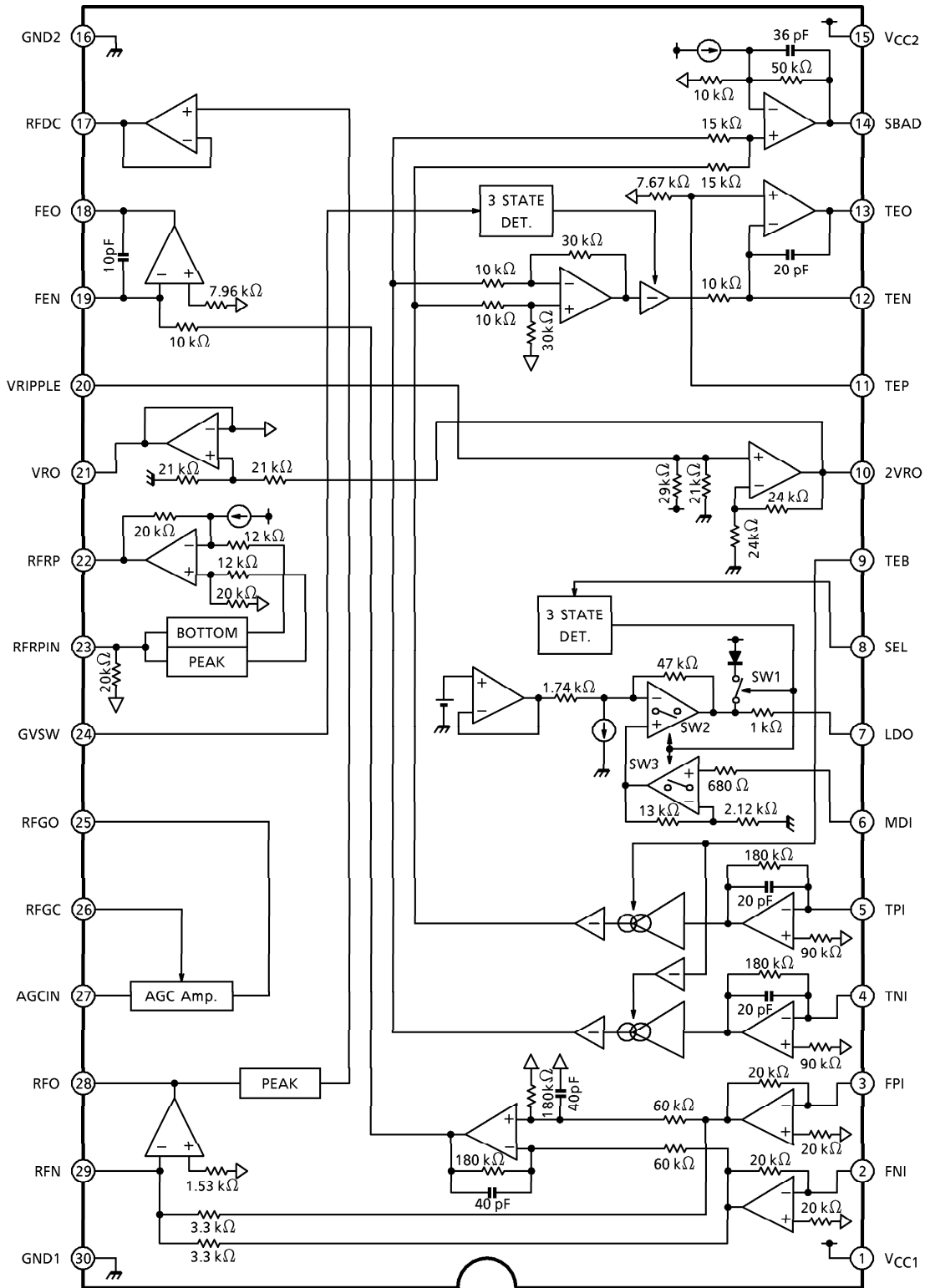
FEATURES

- Built in amplifier for reference (V_{REF} , $2V_{REF}$) supply.
- Built in Auto Laser Power Control circuit.
- Built in RF amplifier.
- Built in focus error amp and tracking error amp.
- Built in sub-beam adder signal amplifier.
- Capable of tracking balance control with TC9432AF, TC9462F and TC9495F.
- Capable of RF gain adjustment circuit with TC9432AF, TC9462F and TC9495F.
- Built in signal amplifier for track counter.
- Capable of 4 times speed operation.
- 30 pin mini flat package.

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BLOCK DIAGRAM



| SEL | LDC | | |
|-----|-----|-----|-----|
| | SW1 | SW2 | SW3 |
| GND | ON | OFF | OFF |
| Hiz | OFF | ON | ON |
| VCC | OFF | ON | ON |

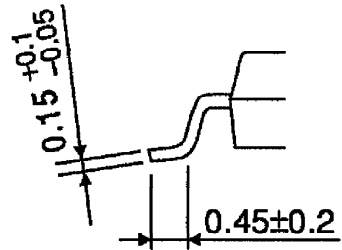
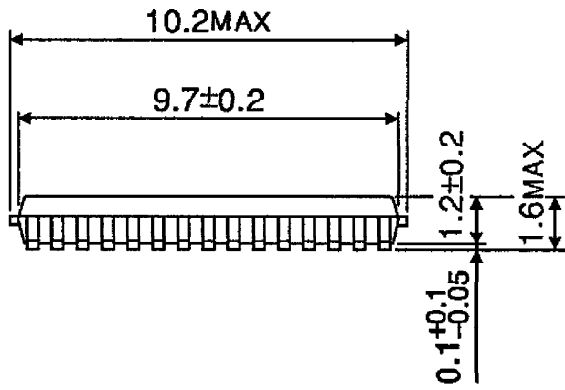
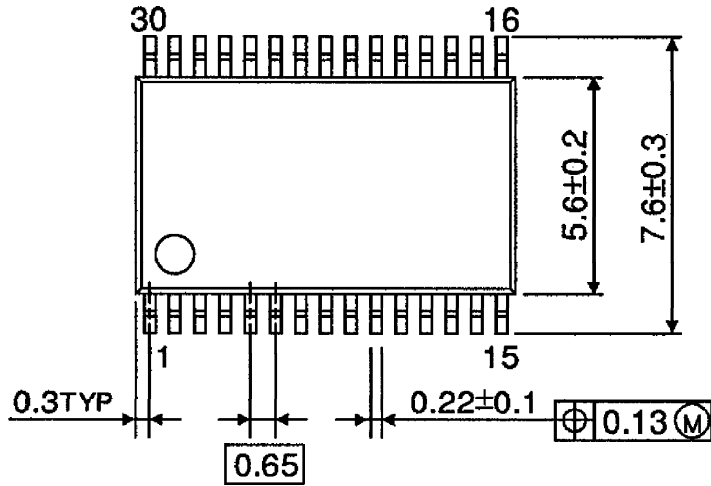
| GVSW | TE GAIN |
|------|---------|
| GND | -3 dB |
| Hiz | 0 dB |
| VCC | +3 dB |

PIN FUNCTION

| PIN No. | SYMBOL | I/O | FUNCTIONAL DESCRIPTION | REMARK |
|---------|------------------|-----|--|---|
| 1 | V _{CC1} | — | Power supply input terminal | — |
| 2 | FNI | I | Main beam I-V amp input terminal | Connected to pin diode A, C |
| 3 | FPI | I | Main beam I-V amp input terminal | Connected to pin diode B, D |
| 4 | TNI | I | Sub beam I-V amp input terminal | Connected to pin diode E |
| 5 | TPI | I | Sub beam I-V amp input terminal | Connected to pin diode F |
| 6 | MDI | I | Monitor photo diode amp input terminal | Connected to monitor photo diode |
| 7 | LDO | O | Laser diode amp output terminal | Connected to laser control circuit |
| 8 | SEL | I | Laser diode control signal input terminal and APC circuit ON/OFF control signal input terminal | 3 signal input (V _{CC} , Hiz, GND) |
| 9 | TEB | I | Tracking error balance adjustment signal input terminal Controlled by 3 PWM signal (PWM carrier = 88.2 kHz) | 3 signal input (2VR, VR, GND) |
| 10 | 2VRO | O | Reference voltage (2VR) output terminal 2VR = 4.2 V when V _{CC} = 5 V | — |
| 11 | TEP | I | TE amp positive input terminal | — |
| 12 | TEN | I | TE amp negative input terminal | Connected to TEO through feedback register |
| 13 | TEO | O | TE error signal output terminal | — |
| 14 | SBAD | O | Sub beam adder signal output terminal | — |
| 15 | V _{CC2} | — | Power supply input terminal | — |
| 16 | GND2 | — | Ground terminal | — |
| 17 | RFDC | O | RF signal peak detect output terminal | — |
| 18 | FEO | O | Focus error signal output terminal | — |
| 19 | FEN | I | FE amp negative input terminal | Connected to FEO through feedback register |
| 20 | VRIPPLE | O | Reference voltage (2VR) filter capacitor connecting terminal | — |
| 21 | VRO | O | Reference voltage (VR) output terminal VR = 2.1 V when V _{CC} = 5 V | — |
| 22 | RFRP | O | Track count signal output terminal | — |
| 23 | RFIS | I | RFRP detect circuit input terminal | Connected to RFO through condenser |
| 24 | GVSW | I | TE amp gain control signal input terminal | 3 signal input (V _{CC} , Hiz, GND) |
| 25 | RFGO | O | RF gain signal output terminal | — |
| 26 | RFGC | I | RF amplitude adjustment control signal input terminal Controlled by 3 PWM signal (PWM carrier = 88.2 kHz) | Input range : VR ± 2.1 V |
| 27 | AGCI | I | RF signal amplitude adjustment amp input terminal | Connected to RFO through condenser |
| 28 | RFO | O | RF signal output terminal | — |
| 29 | RFN | I | RF amp negative input terminal | — |
| 30 | GND1 | — | Ground terminal | — |

PACKAGE DIMENSIONS
SSOP30-P-300-0.65

Unit : mm



Weight : 0.17 g (Typ.)