

INTEGRATED CIRCUIT TECHNICAL DATA Vol. 1

PA**PD****PM**

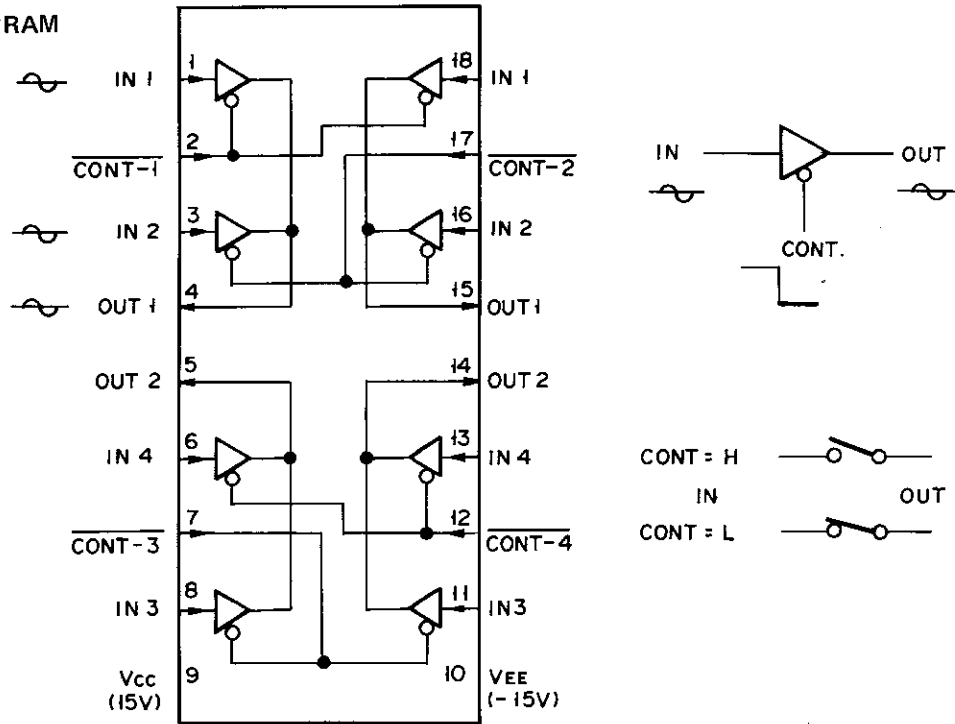
- This manual covers the following products.

| NAME | MODEL | NAME | MODEL | NAME | MODEL |
|---------|------------|----------|----------|---------|--------|
| PA 0001 | RX-70 | PD 0004 | RX-70 | PM 1001 | |
| PA 1001 | TX-9800 | PD 3001 | SA-730 | PM 3001 | CT-7R |
| PA 1002 | TX-9800 | PD 4005 | CT-A1 | PM 6001 | PL-630 |
| PA 2009 | CT-7R | PD 4009 | CT-F1050 | | |
| PA 2010 | CT-7R | PD 4010 | | | |
| PA 2012 | CT-720 | PD 4012 | CT-9R | | |
| PA 3002 | SA-5500 II | PD 6001A | PL-630 | | |
| PA 3004 | | PD 6003 | PL-9 | | |
| PA 3010 | CT-7R | PD 6005 | PL-L800 | | |
| PA 3012 | CT-4 | PD 6006 | CT-7R | | |
| PA 4001 | CT-F1000 | PD 6008 | CT-9R | | |
| PA 4002 | | PD 8001 | | | |
| PA 4004 | TX-8500 II | | | | |
| PA 5001 | F-9 | | | | |
| PA 5002 | F-9 | | | | |

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
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PIONEER ELECTRONIC [EUROPE] N.V. Keetbergplein 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

| | | | |
|-------------|-------------------|------|--------------------|
| APPLICATION | ELECTRONIC SWITCH | NAME | PA0001 |
| MODEL | RX-70 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM

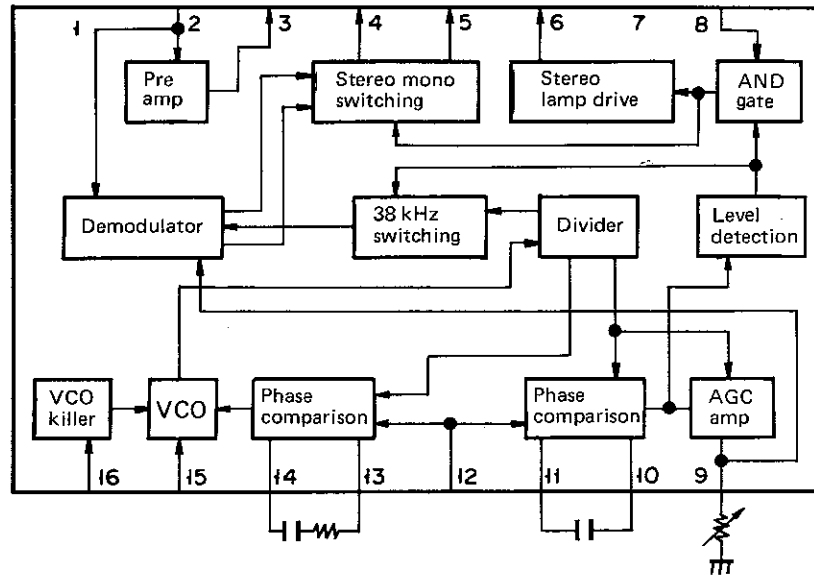


PIN FUNCTIONS

| Pin No. | Standard voltage (V) | Pin Name |
|---------|----------------------|----------|
| 1 | 0 | IN 1 |
| 2 | 5/3.1 | CONT 1 |
| 3 | 0 | IN 2 |
| 4 | 0 | OUT 1 |
| 5 | 0 | OUT 2 |
| 6 | 0 | IN 4 |
| 7 | 5/3.1 | CONT 3 |
| 8 | 0 | IN 3 |
| 9 | 15 | VCC |
| 10 | -15 | VEE |
| 11 | 0 | IN 3 |
| 12 | 5/3.1 | CONT 4 |
| 13 | 0 | IN 4 |
| 14 | 0 | OUT 2 |
| 15 | 0 | OUT 1 |
| 16 | 0 | IN 2 |
| 17 | 5/3.1 | CONT 2 |
| 18 | 0 | IN 1 |

| | | | |
|-------------|--------------------------------|------|--------------------|
| APPLICATION | PILOT CANCELLER MPX DECODER | NAME | PA1001 |
| MODEL | TX-9800 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|--------------|---|
| 1 | 13 | VCC | |
| 2 | 3.1 | PRE IN | Composite signal input |
| 3 | 4.9 | PRE OUT | Composite signal output |
| 4 | 8.85 | L OUT | Lch output |
| 5 | 8.85 | R OUT | Rch output |
| 6 | 13/1 | ST IND | Stereo indicator output 1V → lighted |
| 7 | 0 | GND | |
| 8 | 0/1.5 | ST AUTO IN | Auto/mono switching 1.5V → mono |
| 9 | 0.8 | PILOT CANCEL | Pilot canceller |
| 10 | 2.3 | PILOT LEVEL | Filter |
| 11 | 2.3 | PILOT LEVEL | |
| 12 | 2.38 | PLL IN | Composite signal input |
| 13 | 2.4 | PLL LPF | Filter |
| 14 | 2.4 | PLL LPF | |
| 15 | 3.4 | VCO | VCO 76 kHz |
| 16 | 0/more than 2V | VCO KILL | VCO KILLER IN (VCO stop → 2V in modes other than FM) |

No signal voltage

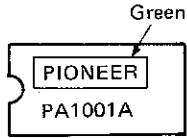
FAMILY

PA1001-A



PA1001 improved performance part

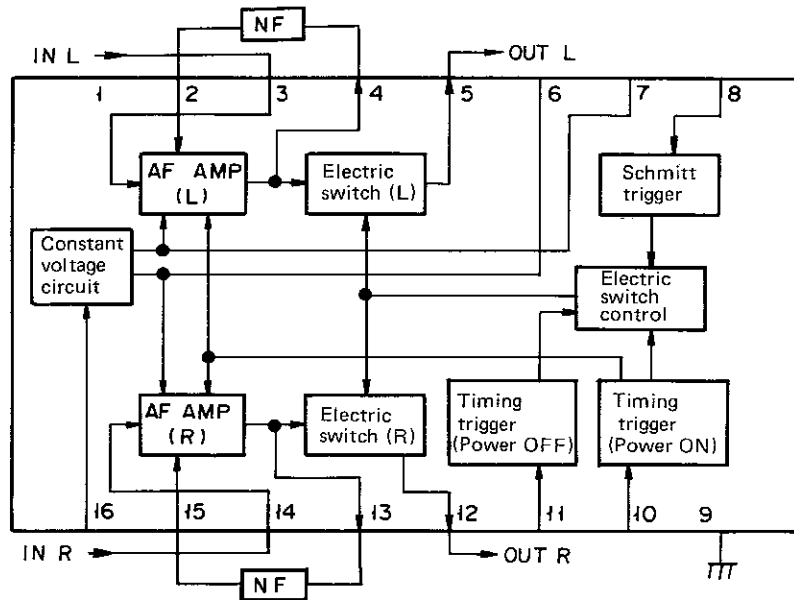
PA1001-AG



PA1001-A SN selected part

| | | | |
|-------------|----------------|------|--------|
| APPLICATION | AF AMP, MUTING | NAME | PA1002 |
| MODEL | TX-9800 | TYPE | C MOS |

BLOCK DIAGRAM

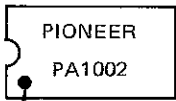
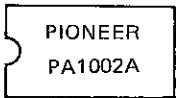
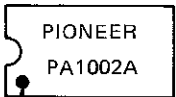
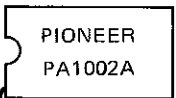


PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|-------------|--|
| 1 | 12.2 | BIAS | |
| 2 | 6.45 | NF IN L | NF loop input terminal |
| 3 | 6.45 | AUDIO IN L | Audio signal input. |
| 4 | 6.45 | NF OUT L | NF Loop input terminal |
| 5 | 6.45 | AUDIO OUT L | Audio signal output |
| 6 | 6.45 | V Ref R | Constant voltage output |
| 7 | 6.45 | V Ref L | |
| 8 | 0 | MUTE IN | Muting ON when 1.3 ~ 5V |
| 9 | 0 | GND | |
| 10 | 6.2 | ON C | Muting control at power ON, MUT on 4.6V or greater |
| 11 | 12.2 | OFF C | Muting control at power OFF |
| 12 | 6.45 | AUDIO OUT R | Audio signal output |
| 13 | 6.45 | NF OUT R | NF loop output terminal |
| 14 | 6.45 | AUDIO IN R | Audio signal input |
| 15 | 6.45 | NF IN R | NF loop input terminal |
| 16 | 13 | Vcc | |

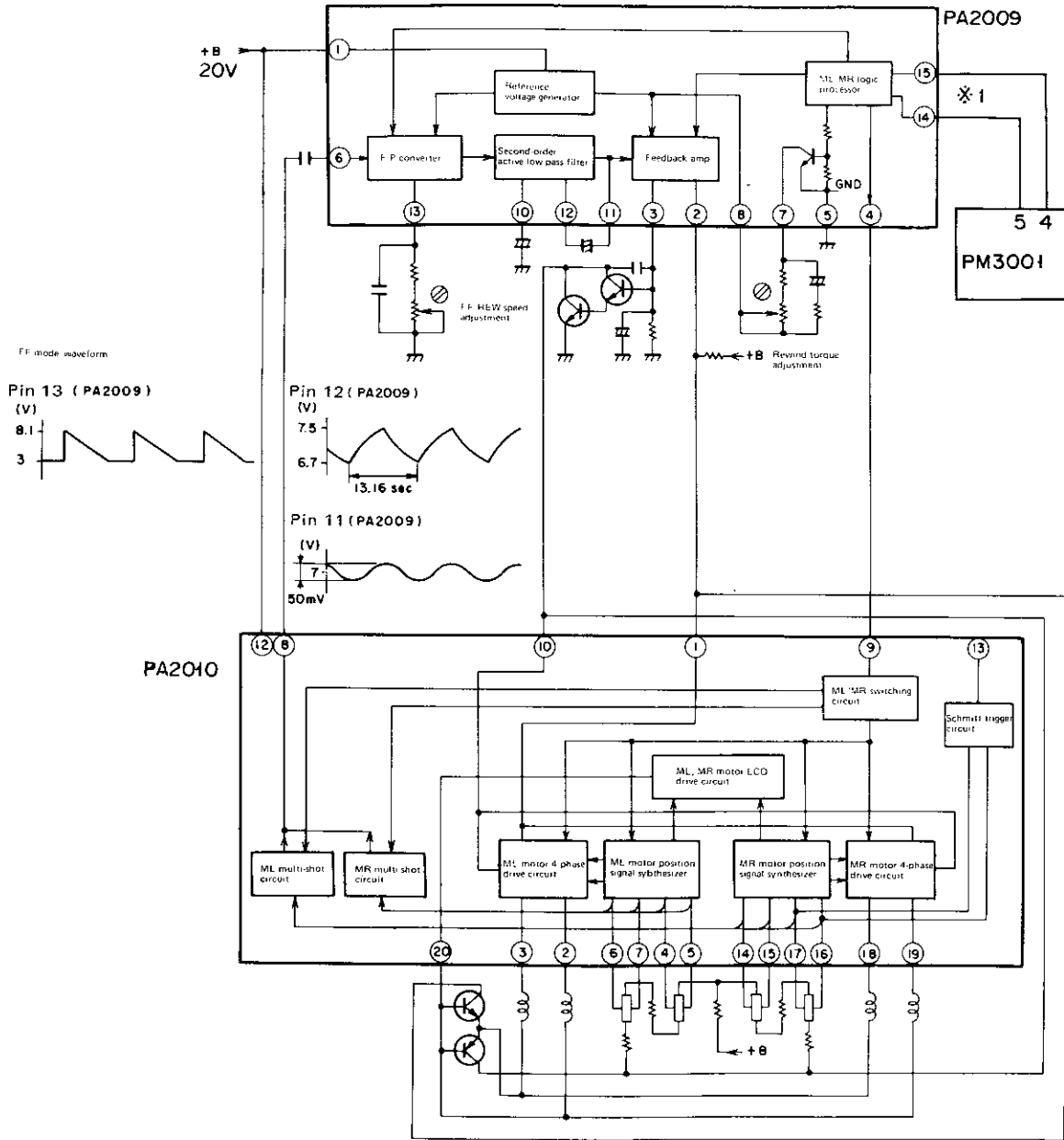
No signal voltage

FAMILY

| | | |
|-----------|---|--|
| PA1002Y |  <p>Yellow dot</p> | PA1002 SN selected part PA1002Y < PA1002 |
| PA1002-A |  | PA1002 distortion, oscillation margin improved part PA1002 < PA1002-A |
| PA1002-AY |  <p>Yellow dot</p> | PA1002-A SN selected part PA1002-AY < PA1002-A |
| PA1002-AG |  <p>Green mark</p> | PA1002-A distortion, SN selected part PA1002-A < PA1002-AG |

| | | | |
|-------------|---------------|------|---------|
| APPLICATION | MOTOR CONTROL | NAME | PA2009 |
| MODEL | CT-7R | TYPE | BIPOLAR |

CONNECTION DIAGRAM



*1 PM3001 Output status table by mode

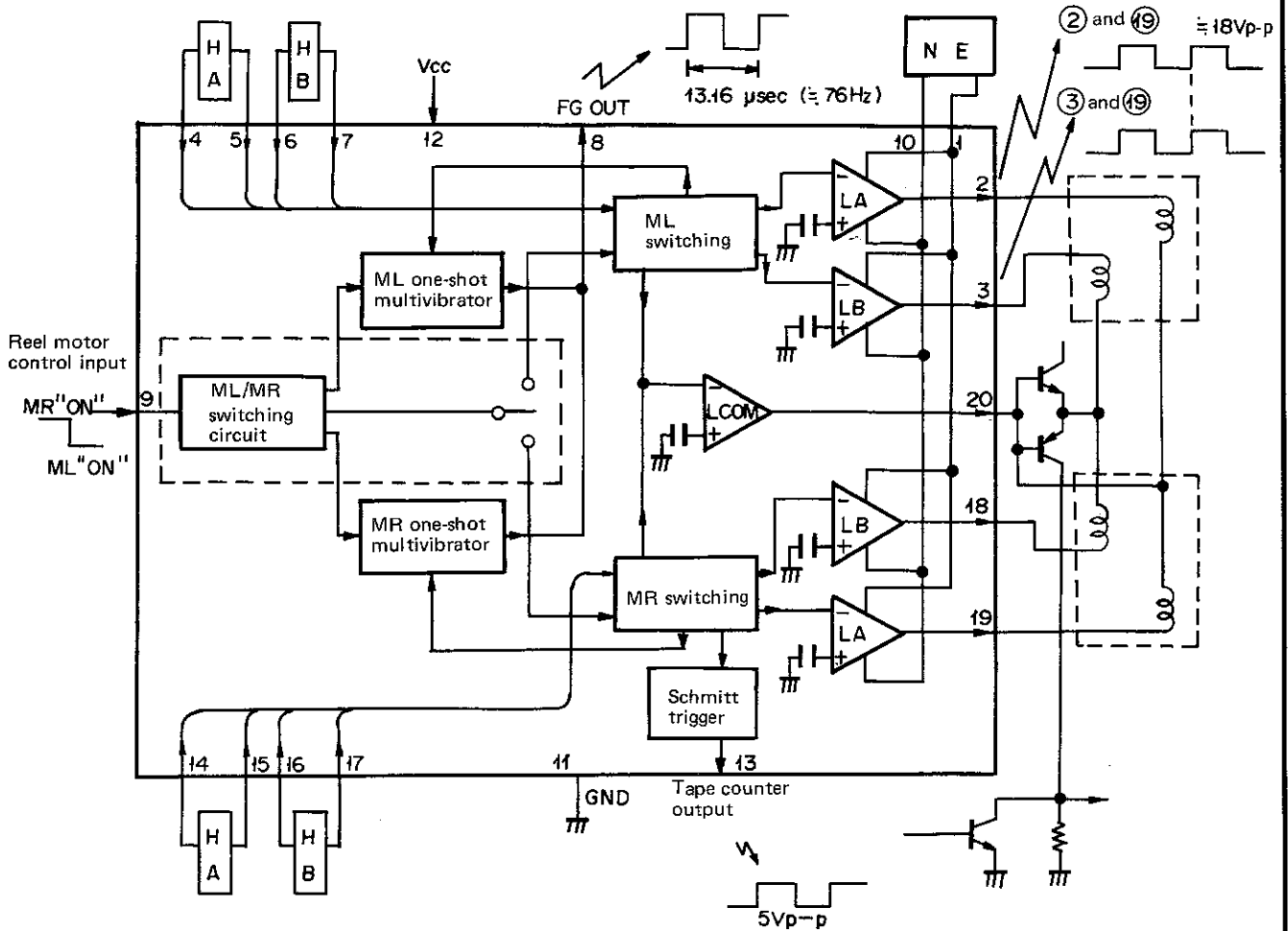
| Pin No. | STOP | | ▶▶ (FF) | | ◀◀ (REW) | | PLAY | | REC/PLAY | | STOP PAUSE | | PLAY PAUSE | | REC/PLAY PAUSE | |
|---------|------|-------|---------|-----|----------|-----|------|-----|----------|-----|------------|-----|------------|-----|----------------|-----|
| | FWD | REV | FWD | REV | FWD | REV | FWD | REV | FWD | REV | FWD | REV | FWD | REV | FWD | REV |
| 4 | L | (OFF) | L | | H | | L | M | L | M | L | | L | | L | |
| 5 | L | (OFF) | H | | L | | M | L | M | L | L | | L | | L | |

PIN FUNCTIONS

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|-----------------|--------|--|
| 1 | Vcc 1 | | +B supply |
| 2 | NF | | Coil current control feedback resistor connection terminal |
| 3 | CONT OUT | Output | Motor current control terminal |
| 4 | L/SW | Output | Reel motor control terminal PNP open collector output |
| 5 | GND | | |
| 6 | FG IN | Input | FG signal input terminal |
| 7 | TP ADJ | | PLAY torque adjustment VR connection terminal "L" → PLAY |
| 8 | REF | | Reference voltage (8.7 V at STOP, FF, REW) |
| 9 | Vcc 2 | Output | Internal constant voltage power supply (8 V) |
| 10 | C ₂ | | Active filter capacitor connection terminal |
| 11 | C' ₁ | | |
| 12 | C ₁ | | |
| 13 | CT | | F/V converter time constant capacitor connection terminal |
| 14 | MR | Input | Right reel motor control terminal |
| 15 | ML | Input | Left reel motor control terminal |
| 16 | NOP | Input | FF/REW speed switching terminal |

| | | | |
|-------------|-------------|------|---------|
| APPLICATION | MOTOR DRIVE | NAME | PA2010 |
| MODEL | CT-7R | TYPE | BIPOLAR |

BLOCK DIAGRAM



PIN FUNCTIONS

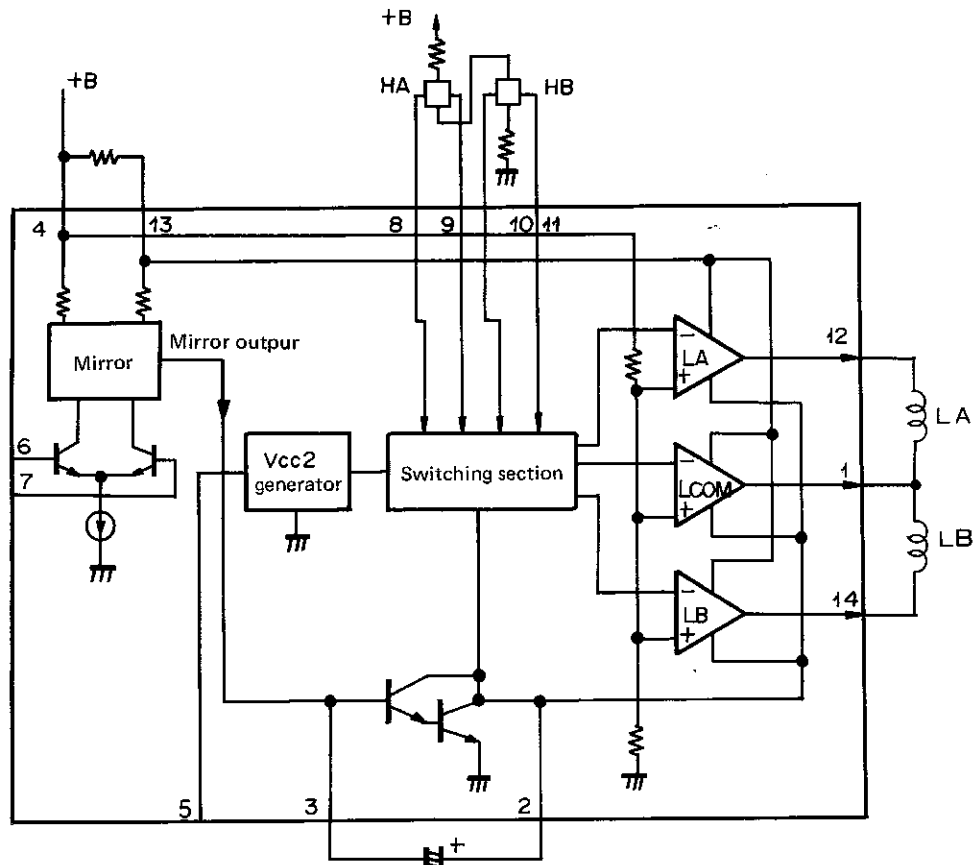
| PinNo. | Pin Name | I/O | Function and Operation |
|--------|--------------------|--------|---|
| 1 | NF | | Feedback resistor connection terminal |
| 2 | ML-LA ⁻ | Output | Drive coil connection terminal |
| 3 | ML-LB ⁻ | Output | |
| 4 | HA ⁺ | Input | Hall element connection terminal |
| 5 | HA ⁻ | Input | |
| 6 | HB ⁺ | Input | |
| 7 | HB ⁻ | Input | |
| 8 | FG OUT | Output | Square wave output as rotation detection signal at FF, REW. |

PA

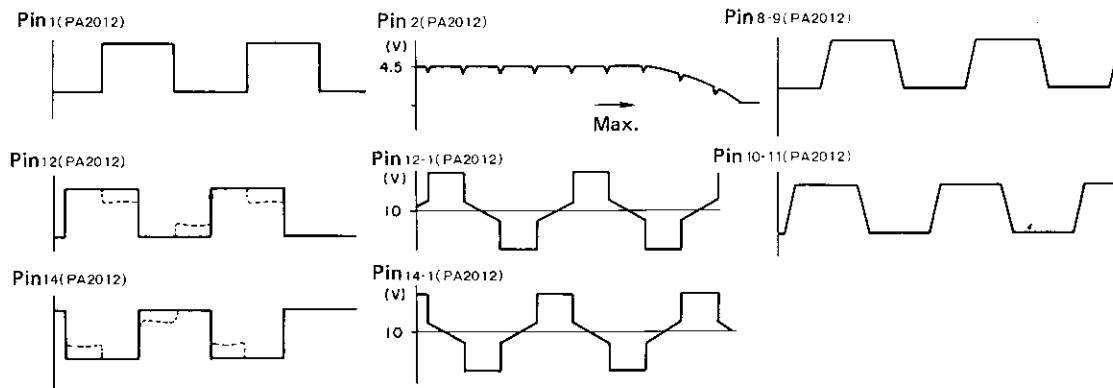
| Pin No. | Pin Name | I/O | Function and Operation |
|---------|--------------------|--------|--|
| 9 | L/R SW | Input | Reel motor (ML, MR) control input terminal |
| 10 | CG | | (Coil ground terminal) External transistor ground side terminal. |
| 11 | GND | | |
| 12 | Vcc | | +B |
| 13 | HB OUT | Output | Tape counter output terminal, end detection |
| 14 | HA ⁺ | Input | Hall element connection terminal |
| 15 | HA ⁻ | Input | |
| 16 | HB ⁻ | Input | |
| 17 | HB ⁺ | Input | |
| 18 | MR-LB ⁻ | Input | Drive coil connection terminal |
| 19 | MR-LA ⁻ | Input | |
| 20 | Lco | Input | |

| | | | |
|-------------|-------------|------|---------|
| APPLICATION | MOTOR DRIVE | NAME | PA2012 |
| MODEL | CT-720 | TYPE | Bipolar |

BLOCK DIAGRAM



WAVEFORM

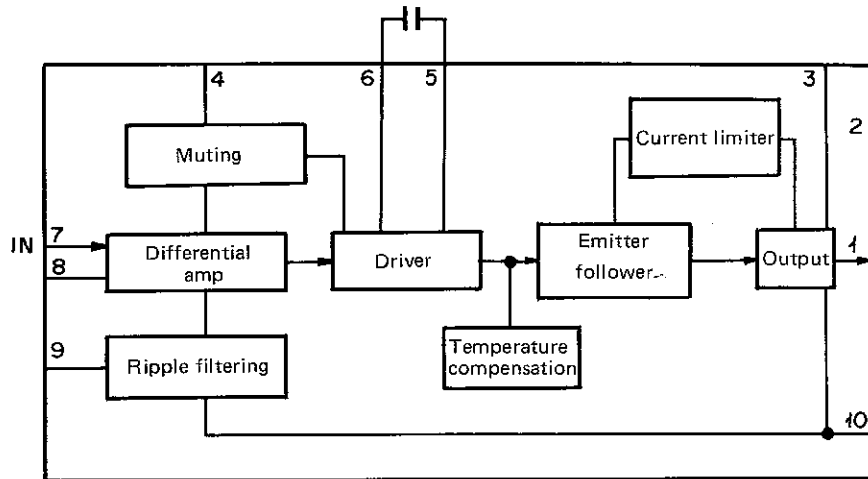


PIN FUNCTIONS

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|-------------------|--------|--|
| 1 | L COM | Output | Drive coil connection terminal. |
| 2 | CC _T | | Oscillation prevention capacitor connection terminal. |
| 3 | CC | | |
| 4 | V _{cc} 1 | | + B1 |
| 5 | V _{cc} 2 | | + B2 control IC power supply. |
| 6 | V REF | Input | Motor supply current is controlled by the input from PA2007 pins (11), (12). (Coil current increases as IN from V REF decreases.) |
| 7 | V IN | Input | |
| 8 | HA ⁻ | Input | Hall element connection terminal. (For current switching) |
| 9 | HA ⁺ | Input | |
| 10 | HB ⁻ | Input | |
| 11 | HB ⁺ | Input | |
| 12 | LA | Output | Drive coil connection terminal. |
| 13 | RF | | Feedback resistor connection terminal. |
| 14 | LB | Output | Drive coil connection terminal. |

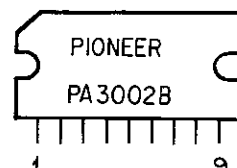
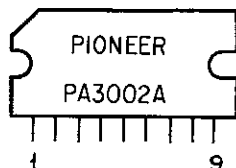
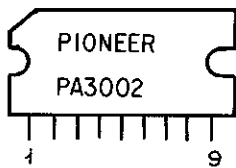
| | | | |
|-------------|-----------------|------|--------------------|
| APPLICATION | AUDIO POWER AMP | NAME | PA3002 |
| MODEL | SA-5500 II | TYPE | Silicon monolithic |

BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|--------------------|--|
| 1 | 0 | OUT | Output |
| 2 | | NC | |
| 3 | 2.5 | V _{CC} 1 | Output +B |
| 4 | 2.5 | V _{CC} 2 | Muting and predriver +B |
| 5 | 2.2 | C _{EXT} | Phase Compensation capacitor connection terminal |
| 6 | 2.4 | C _{EXT} | |
| 7 | 0 | V _{IN(+)} | Amp input |
| 8 | 0 | V _{IN(-)} | NFB input |
| 9 | | GND | |
| 10 | -2.5 | V _{EE} | Output, predriver -B |



PA3002 enhanced characteristics type

PA3002A enhanced characteristics type
4 Ω output load guaranteed

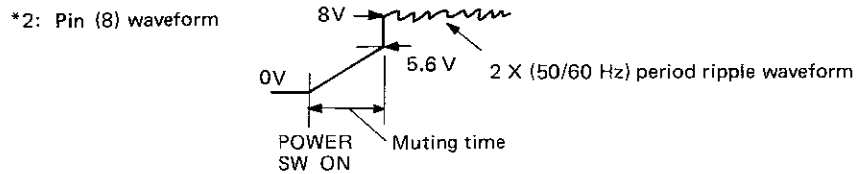
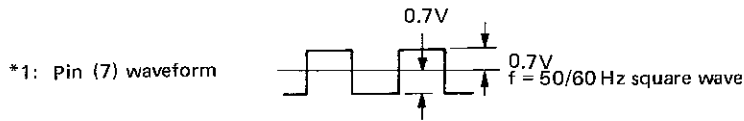
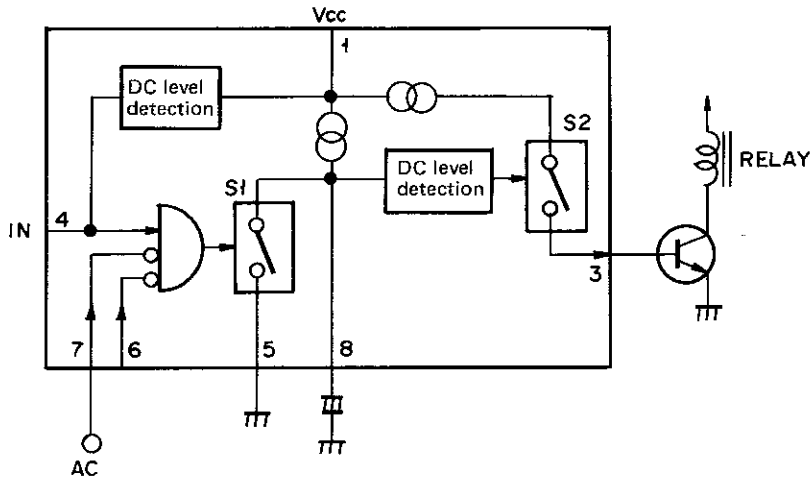
Interchangeability PA3002 = PA3002A

When 3002 and 3002A are interchanged, normal value change is necessary.

PA

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|-------------|----------------------------|------|--------------------|
| APPLICATION | SPEAKER AND AMP PROTECTION | NAME | PA3004 |
| MODEL | (EXCLUSIVE M10) | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM

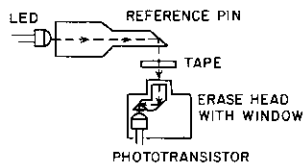
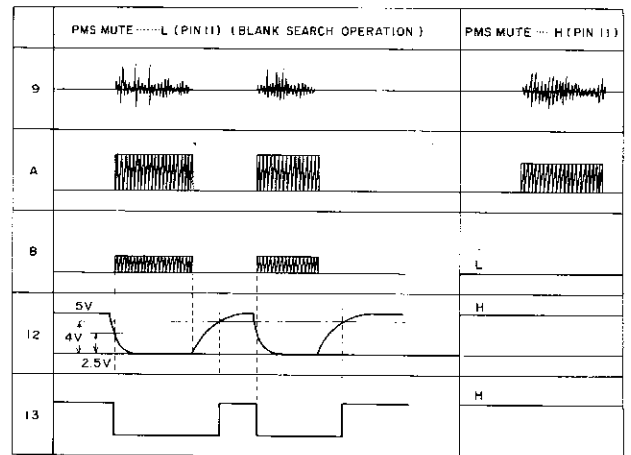
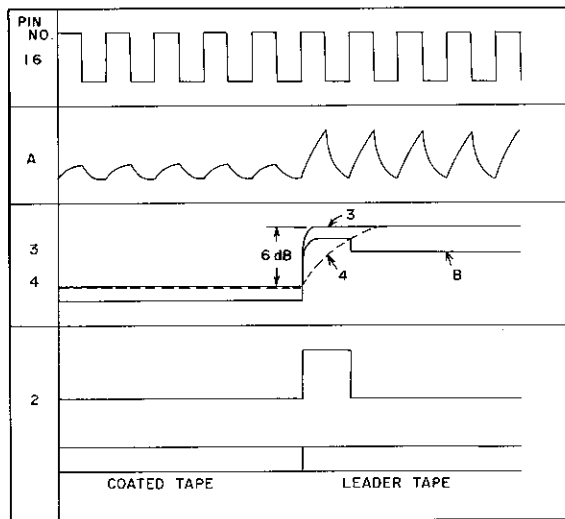
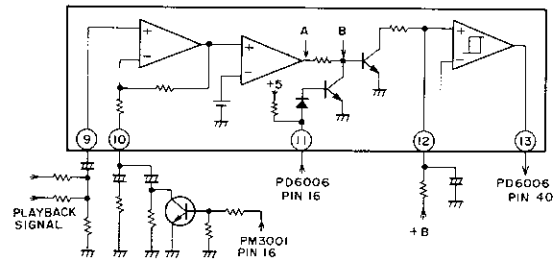
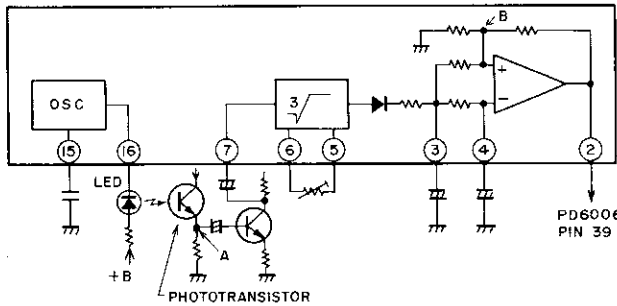


PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Function and Operation |
|---------|----------------------|---|
| 1 | 13 | Vcc and +B voltage detection input (8.5 ~ 12V) |
| 2 | | NC |
| 3 | 0.6/0 | Relay drive output (Relay ON/OFF) |
| 4 | 0 | IN center point voltage detection input (approx ±0.3 V) |
| 5 | 0 | GND |
| 6 | -7.3 | VEE and -B voltage detection input (-4 ~ -6.5 V) |
| 7 | ±0.7 (*1) | AC50/60 Hz MAX 0.1 mA (rms) |
| 8 | *2 | Timing capacitor connection |

| | | | |
|-------------|---|------|--------------------|
| APPLICATION | INTER-MUSIC GAP AND LEADER TAPE DETECTION | NAME | PA3010 |
| MODEL | CT-7R | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM

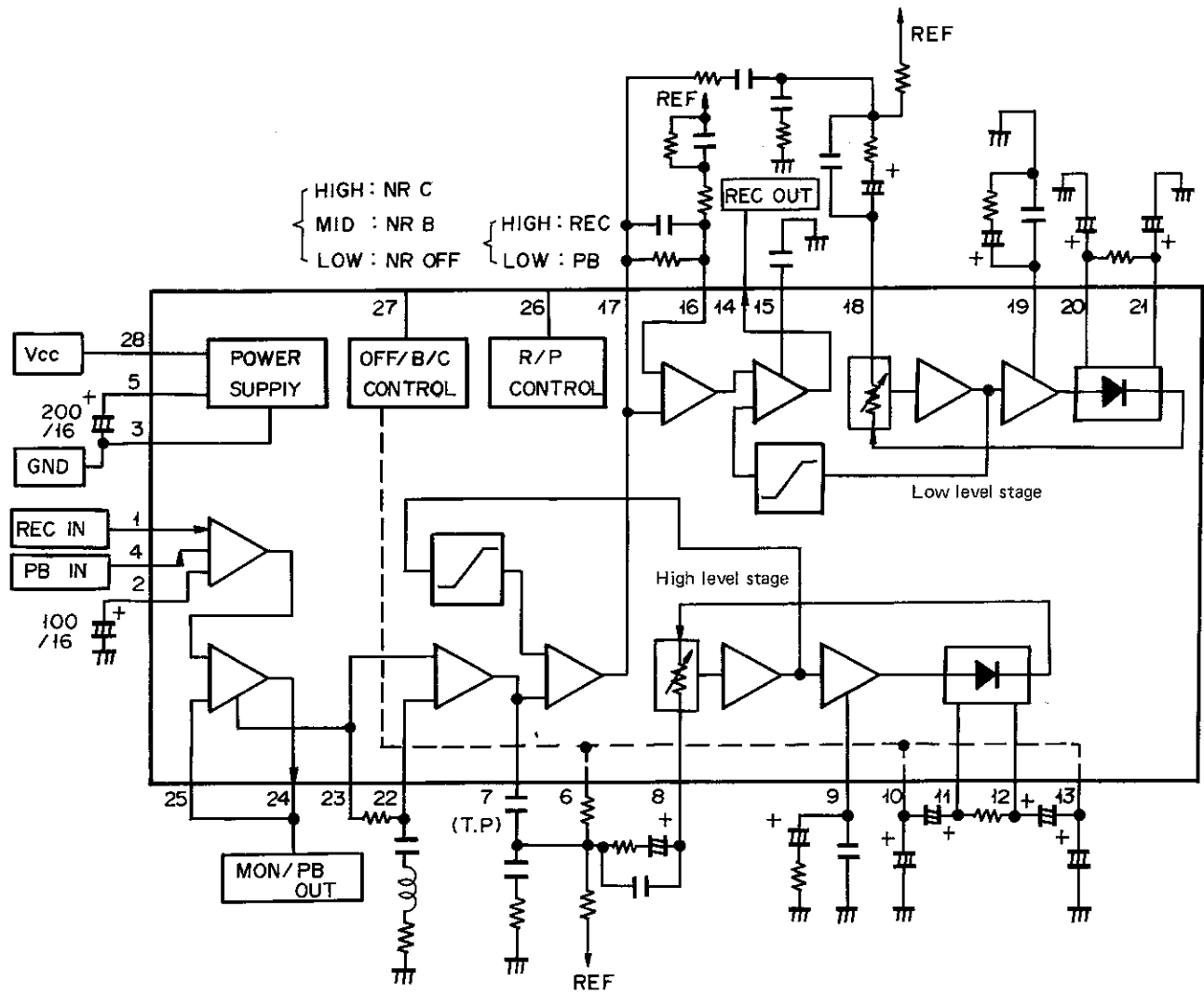


PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | I/O | Function and Operation |
|---------|----------------------|------------------------|--------|--|
| 1 | | GND | | |
| 2 | 0.2 | SENSING OUT | Output | "L" (0.5 VMAX) at tape magnetized parts, "H" (4.9 V) at leader tape |
| 3 | 1.9 | SENSING T ₂ | | Pulse output at (2) by difference between time constant of capacitors connected when amount of light received at the phototransistor suddenly increases. |
| 4 | 1.9 | SENSING T ₁ | | |
| 5 | 3.1 | VR2 | | Connects the variable resistor which determines the leader tape detection level. (For phototransistor input compensation) |
| 6 | 2 | VR1 | | |
| 7 | 5.3 | SENSING IN | Input | Input from phototransistor |
| 8 | 21 | Vcc 1 | | |
| 9 | 1.5 | MS IN | Input | Inter-music gap detection input and playback signal input above -73 dB is judged as music. |
| 10 | 1.5 | MS GAIN | | Determines the inter-music gap detection gain. |
| 11 | 9.7 | MS MUTE | Input | Inter-music gap not detected when muting input terminal is 1.6 V or greater. |
| 12 | 5 | MST | | Inter-music gap detection and music detection time is determined by an external capacitor. |
| 13 | 4.1 | MS OUT | Output | Inter-music gap detection output H → inter-music gap detection L → music stage |
| 14 | 5 | Vcc 2 | | |
| 15 | 2.1 | OSC C | | Frequency is determined by an external capacitor. |
| 16 | 2.6 | OSC OUT | Output | Output pin which drives the LED. 2 kHz pulse |

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|-------------|-------------------------------------|------|--------------------|
| APPLICATION | DOLBY B/C NOISE REDUCTION SYSTEM | NAME | PA3012 |
| MODEL | CT-4 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | I/O | Function and Operation |
|---------|----------------------|-----------|-------|-------------------------------|
| 1 | 6.2 | REC IN | Input | Recording system signal input |
| 2 | 6.2 | IA AC GND | | Input amp inversion input |
| 3 | | GND | | |
| 4 | 6.2 | PB IN | Input | Playback system signal input |
| 5 | 6.2 | REF | | Reference pin |

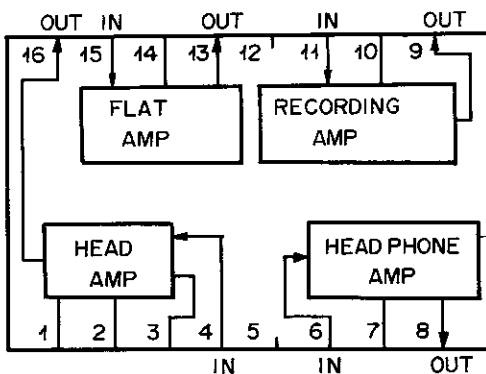
| Pin No. | Standard Voltage (V) | Pin Name | I/O | Function and Operation |
|---------|----------------------|-----------------|--------|--|
| 6 | 6.2 | S-1 | | High level stage side chain filter selector switch |
| 7 | 6.2 | SCF-1 | | High level stage side chain filter terminal |
| 8 | 6.2 | VCR-1 | | High level stage VCR terminal |
| 9 | 6.2 | HPA-1 | | High level stage high bias amp output |
| 10 | 0 | S-2 | | Time constant selector switch |
| 11 | 0.9 | T ₁₁ | | Time constant terminal |
| 12 | 0.9 | T ₁₂ | | |
| 13 | 0 | S-3 | | Time constant selector switch |
| 14 | 5.5 | REC OUT | Output | Encoder output |
| 15 | 6.7 | P.C | | Phase compensation capacitor |
| 16 | 6.2 | AS | | Antisaturation network |
| 17 | 6.2 | SCF-2 | | Low level stage side chain filter terminal |
| 18 | 6.2 | VCR-2 | | Low level stage VCR terminal |
| 19 | 6.2 | HPA-2 | Output | Low level stage high bias amp output |
| 20 | 0.9 | T ₂₁ | | Low level stage time constant terminal |
| 21 | 0.9 | T ₂₂ | | |
| 22 | 6.4 | SS-2 | | Spectrum skewing terminal |
| 23 | 6.4 | SS-1 | | |
| 24 | 6.5 | MON P.B OUT | Output | Motor & decoder output |
| 25 | 6.5 | OA AC GND | Input | Output amp invert input |
| 26 | | R/P | | Record/playback mode control "H" → REC |
| 27 | | OFF/BIG | | Dolby NR mode control |
| 28 | 1 2.4 | V _{cc} | | +B |

②⑥ Pin — REC 3.5 ~ 6V
— PLAY 0 ~ 1V

②⑦ Pin — DOLBY OFF V_{cc}/2 -1.5V
— DOLBY B V_{cc}/2 +0.5V
— DOLBY C V_{cc}/2 +2.3V

| | | | |
|-------------|----------------------------------|------|--------------------|
| APPLICATION | CASSETTE DECK PLAYBACK AMP IC | NAME | PA4001 |
| MODEL | CT-F1000 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM



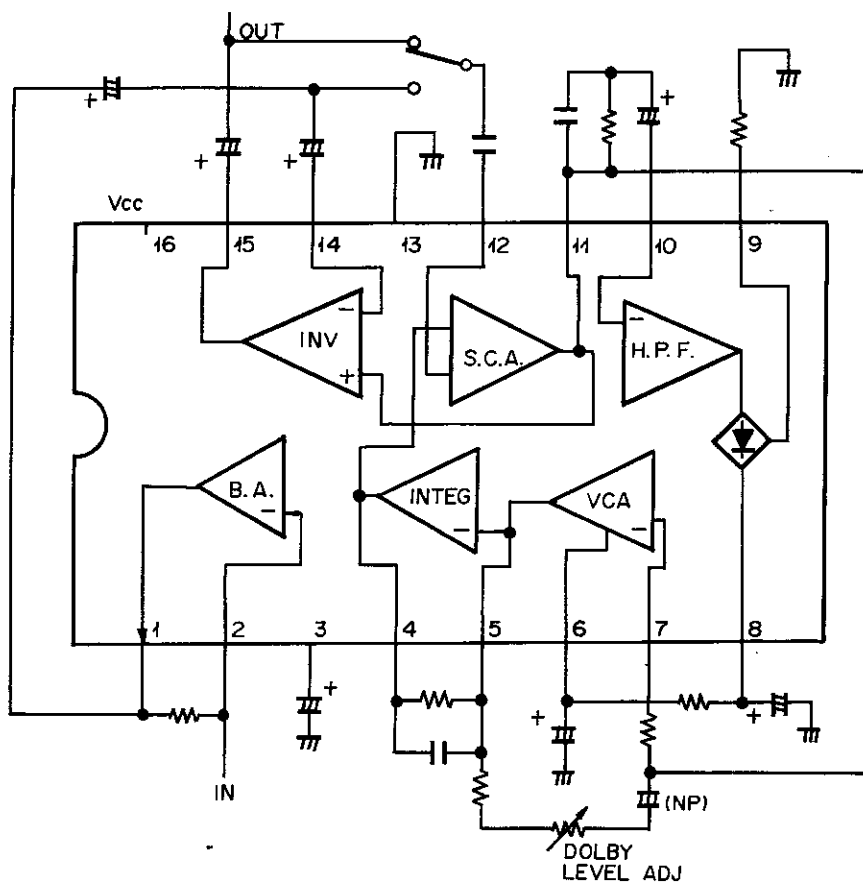
PIN FUNCTIONS

| PinNo. | Standard Voltage (V) | Pin name | I/O | Function and Operation |
|--------|----------------------|-----------------|--------|---|
| 1 | 2 2.6 | PHASE COM . 1 | | HEAD AMP phase compensating capacitor connection terminal |
| 2 | 1 2.2 | PHASE COM . 2 | | |
| 3 | 1 1.5 | HA IN \ominus | Input | HEAD AMP NFB input Input terminal |
| 4 | 1 1.5 | HA IN \oplus | Input | |
| 5 | 0 | GND | | |
| 6 | 1 1.3 | HPA IN | Input | HEAD PHONE AMP Input terminal Power supply terminal Output |
| 7 | 2 3.5 | Vcc 2 | | |
| 8 | 1 1.5 | HPA OUT | Output | |
| 9 | 1 1.5 | RA OUT | Output | REC AMP Output NFB input Input |
| 10 | 1 1.5 | RA IN \ominus | Input | |
| 11 | 1 0 | RA IN \oplus | Input | |
| 12 | 2 3.5 | Vcc 1 | | Power supply terminal (H. A, F. A, REC A) |
| 13 | 1 1.5 | FA OUT | Output | FLAT AMP Output NFB input Input |
| 14 | 1 1.5 | FA IN \ominus | Input | |
| 15 | 1 1.2 | FA IN \oplus | Input | |
| 16 | 1 1.5 | HA OUT | Output | HEAD AMP output |

PA

| | | | |
|-------------|------------------------------|------|-----------------------|
| APPLICATION | DOLBY B TYPE NOISE REDUCTION | NAME | PA4002 |
| MODEL | (T-3050) | TYPE | SILICON MONOLITHIC IC |

BLOCK DIAGRAM



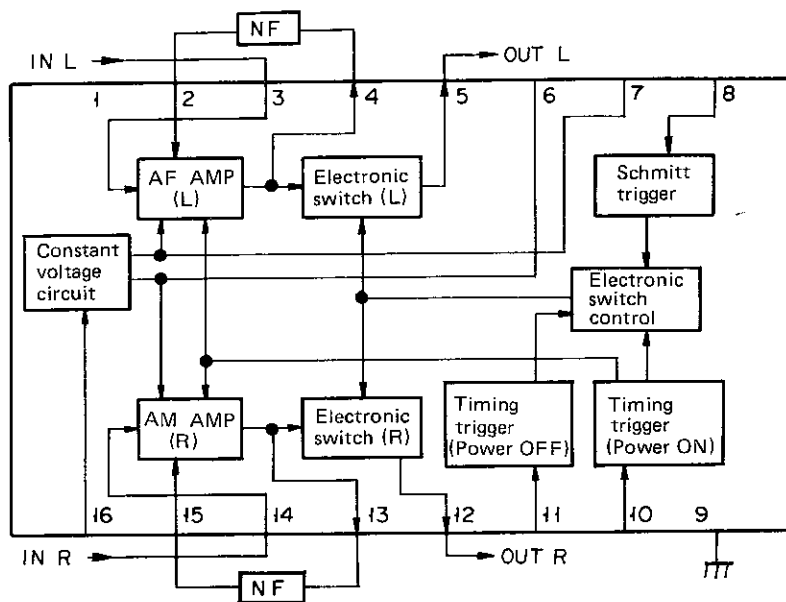
PIN FUNCTIONS

| PinNo. | Standard Voltage (V) | Pin Name | I/O | Function and Operation |
|--------|----------------------|----------|--------|--|
| 1 | 1 2.3 | OUT 1 | Output | Buffer amp output |
| 2 | 1 2.3 | IN 2 | Input | Buffer amp input |
| 3 | 1 2.3 | REF F | | Reference |
| 4 | 1 2.3 | C | Output | Integrator output (capacitor connection pin) |
| 5 | 1 2.3 | RC | Input | Integrator input (resistor, capacitor connection pin) |
| 6 | | VC | | Discriminator smoothing capacitor connection pin 2 (VCA control voltage) |
| 7 | 1 2.3 | R | Input | VCA input |
| 8 | | VD | | Discriminator smoothing capacitor connection pin 1 |

| PinNo. | Standard Voltage (V) | Pin Name | I/O | Function and Operation |
|--------|----------------------|----------|--------|--|
| 9 | | RD | | Discriminator gain setting resistor connection pin |
| 10 | 1 2.8 | ZL | Input | Bypass amp input |
| 11 | 1 2.3 | OUT 3 | Output | Side change amp output |
| 12 | 1 2.3 | IN3 | Input | Side chain amp input |
| 13 | 0 | GND | | |
| 14 | 1 2.3 | IN2 | Input | Inverter amp input |
| 15 | 1 2.3 | OUT2 | Output | Inverter amp output |
| 16 | 2 4 | Vcc | | |

| | | | |
|-------------|---------------|------|--------|
| APPLICATION | AF AMP MUTING | NAME | PA4004 |
| MODEL | TX-8500 II | TYPE | C MOS |

BLOCK DIAGRAM



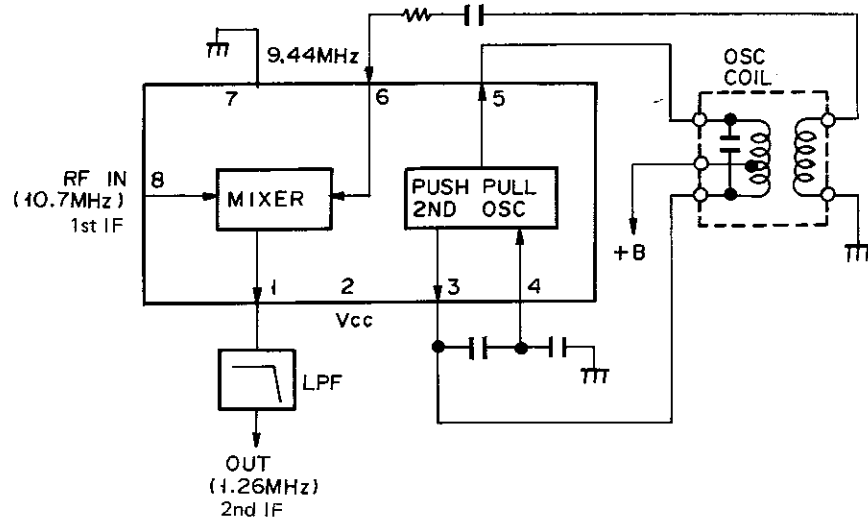
PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|-------------|--|
| 1 | 12.2 | BIAS | |
| 2 | 6.45 | NF IN L | NF loop input terminal |
| 3 | 6.45 | AUDIO IN L | Audio signal input |
| 4 | 6.45 | NF OUT L | NF loop output terminal |
| 5 | 6.45 | AUDIO OUT L | Audio signal output |
| 6 | 6.45 | V Ref R | Constant voltage output |
| 7 | 6.45 | V Ref L | |
| 8 | 0 | MUTE IN | MUTING ON at 1.3 ~ 5V |
| 9 | 0 | GND | |
| 10 | 6.2 | ON C | Muting control at power ON, MUT ON 4.6V or greater |
| 11 | 12.2 | OFF C | Muting control at power OFF |
| 12 | 6.45 | AUDIO OUT R | Audio signal output |
| 13 | 6.45 | NF OUT R | NF loop output terminal |
| 14 | 6.45 | AUDIO IN R | Audio signal output |
| 15 | 6.45 | NF IN R | NF loop input terminal |
| 16 | 13 | Vcc | |

No signal voltage

| | | | |
|-------------|------------|------|--------------------|
| APPLICATION | OSC, MIXER | NAME | PA5001 |
| MODEL | F-9 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM

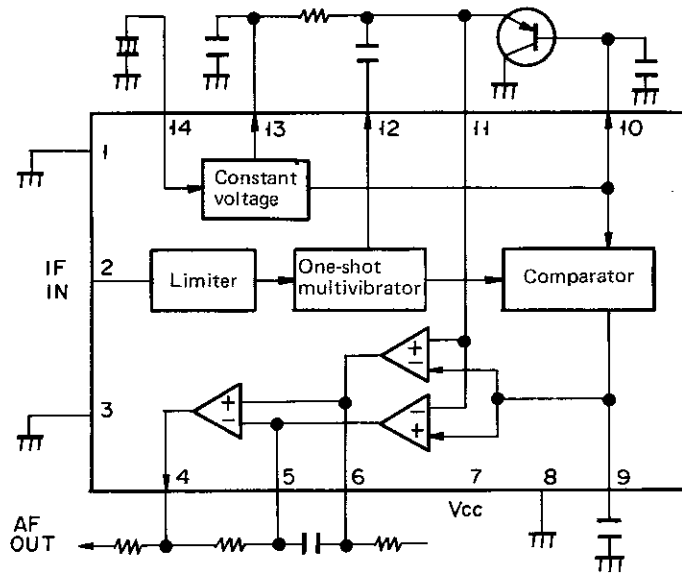


PIN FUNCTIONS

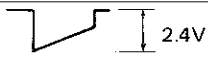
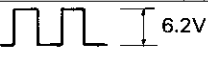
| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|--------------|--|
| 1 | 11.8 | MIX OUT | 10.7 MHz and 9.44 MHz differ |
| 2 | 13 | VCC | |
| 3 | 12.9 | OSC 1 OUT | By external terminal Oscillator (9.44 MHz) formation |
| 4 | 4.8 | FEED BACK IN | |
| 5 | 12.9 | OSC 2 OUT | |
| 6 | 4.8 | LOCAL IN | 9.44 MHz IN |
| 7 | 0 | GND | |
| 8 | 4.8 | RF IN | 10.7 MHz (1st IF) IN |

| | | | |
|-------------|--------------------------|------|--------|
| APPLICATION | FM PULSE COUNT DETECTION | NAME | PA5002 |
| MODEL | F-9 | TYPE | C MOS |

BLOCK DIAGRAM

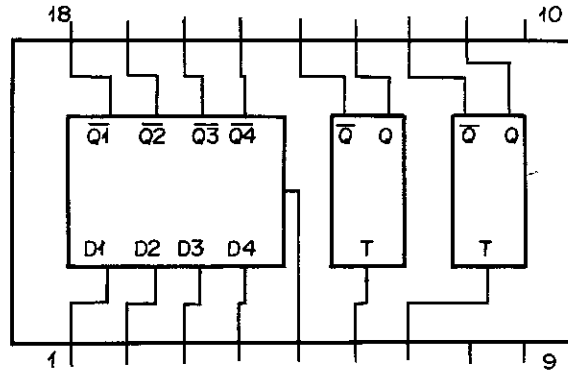


PIN FUNCTIONS

| Pin No. | Standard Voltage (V) | Pin Name | Function and Operation |
|---------|----------------------|--------------|--|
| 1 | 0 | GND | |
| 2 | 2.9 | IF-IN | |
| 3 | 0 | GND | |
| 4 | 6.9 | AF OUT | FM detection output |
| 5 | 7.1 | POST AMP (-) | |
| 6 | 7.1 | POST AMP (+) | |
| 7 | 13.7 | VCC | |
| 8 | 0 | GND | |
| 9 | 1.2 | V-Ref (1) | |
| 10 | 4.1 | TIMING CR | |
| 11 | | TIMING CR IN |  |
| 12 | | PULSE OUT |  |
| 13 | 8.5 | V-Ref (2) | |
| 14 | 7.6 | V-Ref (3) | |

| | | | |
|-------------|---------------------------|------|--------------------|
| APPLICATION | ELECTRONIC SWITCH DISPLAY | NAME | PD0004 |
| MODEL | RX-70 | TYPE | SILICON MONOLITHIC |

BLOCK DIAGRAM









PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation | |
|---------|------------------|--------|------------------------|-----------------------|
| 1 | D ₁ | Input | TAPE PLAY input | Active "H" |
| 2 | D ₂ | | PHONO input | |
| 3 | D ₃ | | TV/AUX input | |
| 4 | D ₄ | | TUNER | |
| 5 | EXTENSION | Input | | |
| 6 | T ₁ | Input | Not Used (GND) | |
| 7 | T ₂ | Input | | |
| 8 | V _{cc} | | +B | |
| 9 | BACK UP | | Not used (NC) | |
| 10 | GND | | | |
| 11 | Q ₂ | Output | Not used (NC) | |
| 12 | \overline{Q}_2 | | | |
| 13 | Q ₁ | | | |
| 14 | \overline{Q}_1 | | | |
| 15 | \overline{Q}_4 | Output | TUNER Output | Negative logic output |
| 16 | \overline{Q}_3 | | TV/AUX Output | |
| 17 | \overline{Q}_2 | | PHONO Output | |
| 18 | \overline{Q}_1 | | TAPE PLAY Output | |

*Pins (11) – (18) are open collector output.

TRUTH TABLE

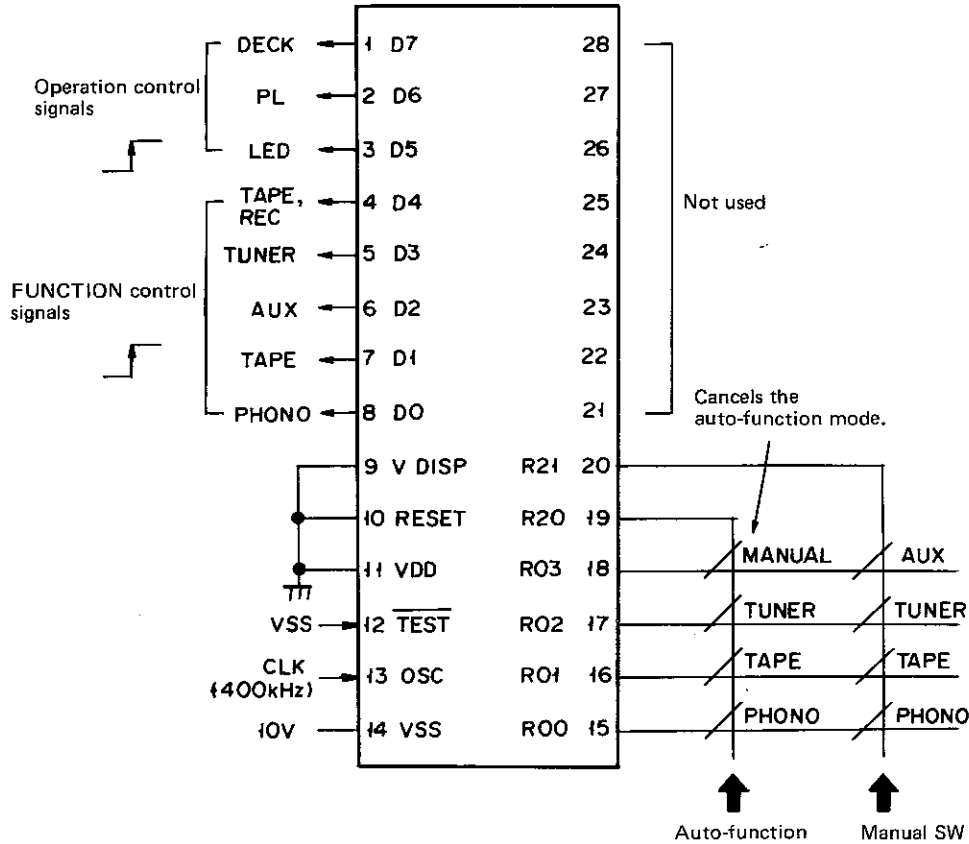
| INPUT | | | | OUTPUT | | | |
|---|---|---|---|------------------|------------------|------------------|------------------|
| D ₁ | D ₂ | D ₃ | D ₄ | $\overline{Q_1}$ | $\overline{Q_2}$ | $\overline{Q_3}$ | $\overline{Q_4}$ |
|  | L | L | L | L | H | H | H |
| L |  | L | L | H | L | H | H |
| L | L |  | L | H | H | L | H |
| L | L | L |  | H | H | H | L |

| INPUT | OUTPUT |
|---|------------------|
| T | $Q_n + 1$ |
|  | $\overline{Q_n}$ |
|  | Q_n |

$\overline{Q_n}$: Previous state is held.
 Q_n : Previous state is inverted.

| | | | |
|-------------|-----------------------|------|----------------------|
| APPLICATION | AMP FUNCTIONS CONTROL | NAME | PD3001 |
| MODEL | SA-730 | TYPE | P MOS 4 BIT COMPUTER |

BLOCK DIAGRAM



| FUNCTION | FUNCTION | D0 | D1 | D2 | D3 | D4 | D5 | D6 | D7 |
|-------------------------|--|----|----|----|----|------|----|----|----|
| POWER ON INITIALIZATION | FUNCTION → TUNER TAPE REC → ON | L | L | L | H | H | L | L | L |
| PHONO | FUNCTION → PHONO TAPE REC → ON PL CONT → ON | H | L | L | L | H | L | | L |
| TAPE | FUNCTION → TAPE TAPE REC → ON or OFF PL CONT → OFF DECK CONT → ON | L | H | L | L | *H/L | L | | H |
| AUX | FUNCTION → AUX TAPE REC → ON DECK CONT → OFF | L | L | H | L | H | L | L | L |
| TUNER | FUNCTION → TUNER TAPE REC → ON | L | L | L | H | H | L | L | L |

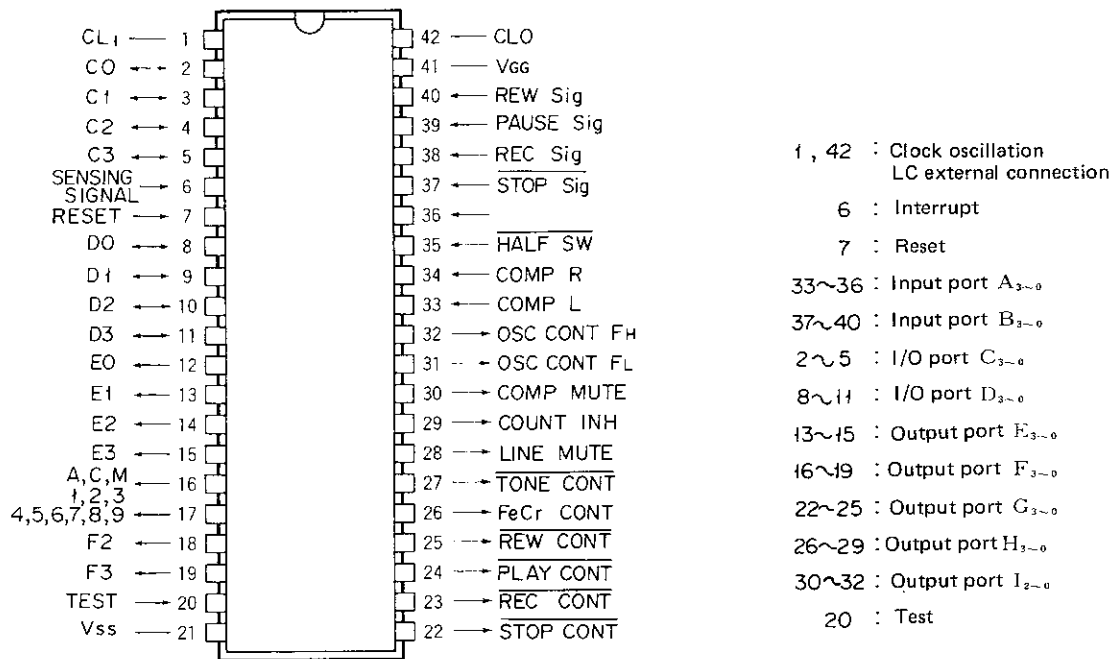
When the player is in the play state, a pulse is generated even if FUNCTION is switched from PHONO to another position.




* Tape deck PLAY → H, other than PLAY → L

| | | | |
|-------------|----------|------|----------------------------|
| APPLICATION | AUTO-BLE | NAME | PD4005 |
| MODEL | CT-A1 | TYPE | P MOS 4 BIT μ COMPUTER |

PIN ARRANGEMENT



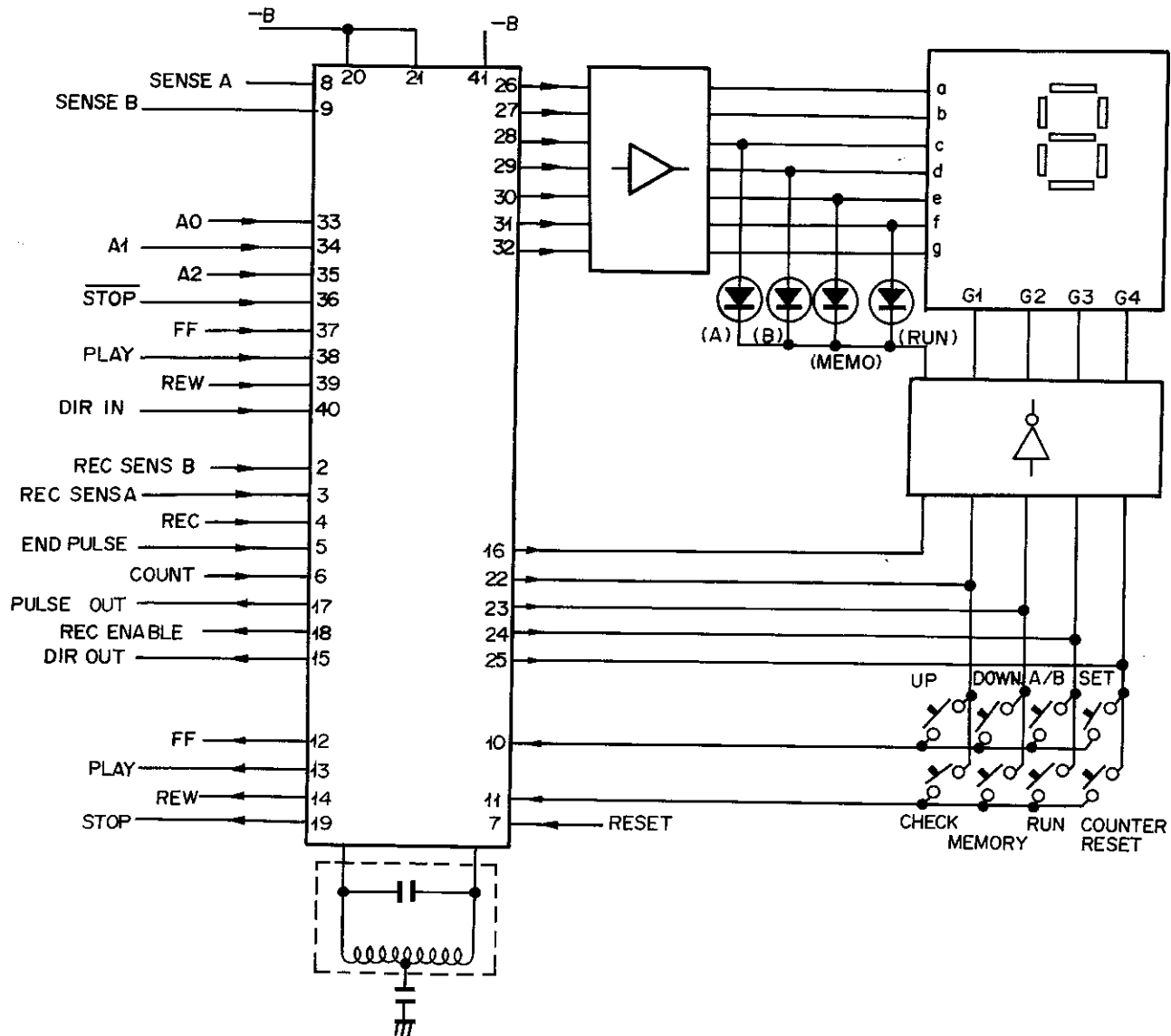
PIN FUNCTIONS

| PinNo. | Pin Name | I/O | Function and Operation | |
|--------|-----------------|---------------|--|---|
| 1 | CL ₁ | — | Internal clock oscillation LC external connection terminal. | |
| 2 | C0 | In and Output | DB (DATA BUS) 0 | BIAS data, LEVEL data, EQ data, display data, external RAM address data, external RAM READ or WRITE data, and other DATA BUS. |
| 3 | C1 | In and Output | DB 1 | |
| 4 | C2 | In and Output | DB 2 | |
| 5 | C3 | In and Output | DB 3 | |
| 6 | SENSING SIGNAL | Input | Sensing input terminal.  (waveform when tape running) | |
| 7 | RESET | Input | Reset input terminal. Reset when "H". | |
| 8 | D0 | In and Output | DB 4 | and EQSW detection input, KEY scan input. |
| 9 | D1 | In and Output | DB 5 | |
| 10 | D2 | In and Output | DB 6 | |
| 11 | D3 | In and Output | DB 7 | |



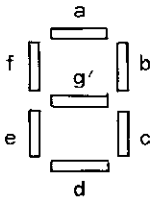
| Pin No. | Pin name | I/O | Function and Operation | |
|---------|-------------------------|--------|--|---|
| 12 | E 0 | Output | LA (LATCH ADDRESS) 0 | BIAS data, LEVEL data, EQ data, display data latch address data output. |
| 13 | E 1 | Output | LA 1 | |
| 14 | E 2 | Output | LA 2 | |
| 15 | E 3 | Output | LA 3 | |
| 16 | A, C, M, 1, 2, 3 | Output | AUTO, CALL, MEMORY, 1, 2, 3 KEY key scan output. | |
| 17 | 4, 5, 6, 7, 8, 9 | Output | 4, 5, 6, 7, 8, 9 key signal output terminal. | |
| 18 | F 2 | Output | External RAM write, read signal output terminal. | |
| 19 | F 3 | Output | | |
| 20 | TEST | | CPU test terminal. Fixed at +5 V. | |
| 21 | V _{SS} | | +5 V supply | |
| 22 | STOP CONT | Output | STOP signal output. "L" output for 5ms at end of AUTO Operation rewind and error. Otherwise "H". | |
| 23 | REC CONT | Output | REC signal output | "L" output for 5ms at AUTO operation start. |
| 24 | PLAY CONT | Output | PLAY signal output. | |
| 25 | REW CONT | Output | REW signal output. "L" for 5ms at start of AUTO operation rewind. | |
| 26 | Fe-Cr CONT | Output | Fe-Cr signal output. "H" when Fe-Cr tape. | |
| 27 | TONE CONT | Output | TONE signal output. BIAS manual variable enable signal. Enable when "L". | |
| 28 | LINE MUTE | Output | AUTO Operation LINE MUTE signal. | |
| 29 | COUNT INH | Output | COUNT INH signal output. Auto stop operation by tape counter inhibit signal. "H" when AUTO. Otherwise Z. | |
| 30 | COMP MUTE | Output | A/D conversion comparator input signal MUTE signal output. | |
| 31 | OSC CONT F _L | Output | Signal that turns on the F _L signal. | |
| 32 | OSC CONT F _H | Output | Signal that turns on the F _H signal. | |
| 33 | COMP L | Input | A/D conversion comparator output sense input. | Lch |
| 34 | COMP R | Input | | Rch |
| 35 | HALFSW | Input | Half SW signal input terminal. "L" when half. | |
| 36 | — | | Not used. | |
| 37 | STOP Sig | Input | STOP signal input terminal. "L" when STOP. | |
| 38 | REC Sig | Input | REC signal input terminal. "H" when REC. | |
| 39 | PAUSE Sig | Input | PAUSE signal input terminal. "H" when PAUSE. | |
| 40 | REW Sig | Input | REW signal input terminal. "H" when REW. | |
| 41 | V _{GG} | | -5 V supply. | |
| 42 | CL 0 | | Internal clock oscillation LC external connection terminal. | |

| | | | |
|-------------|------------------------|------|----------------------------|
| APPLICATION | RANDOM MUSIC SELECTION | NAME | PD4009 |
| MODEL | CT-F1050 | TYPE | P MOS 4 BIT μ COMPUTER |

BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation | | |
|---------|------------|--------|--|----------------------------------|---|
| 1 | CL0 | Input | Clock input | | |
| 2 | REC B | Input | REC detection | "L" → FWD direction REC possible | |
| 3 | REC A | Input | | "L" → REV direction REC possible | |
| 4 | REC | Input | Memo card detection signal | | |
| 5 | END PULSE | Input | TAPE END detection  | | |
| 6 | COUNT | Input | Tape counter pulse input 1 count 2 pulses | | |
| 7 | RES | Input | Reset terminal | | |
| 8 | SENSE A | | Inter-music gap detection signal judgement "L" → Music "H" → Unmagnetized part | FWD direction | |
| 9 | SENSE B | | | REW direction | |
| 10 | D2 | Input | Key input terminal | | |
| 11 | D3 | Input | | | |
| 12 | FF | Output | Mechanism control output "H" Active | | |
| 13 | PLAY | Output | | | |
| 14 | REW | Output | | | |
| 15 | DIR OUT | Output | Direction output  | "H" → REV | |
| 16 | F0 | | LED drive output | | |
| 17 | PULSE OUT | Output | *1 | | |
| 18 | REC ENABLE | Output | REC ENABLE signal "H" → REC enable | | |
| 19 | STOP | Output | Mechanism control output "H" Active | | |
| 20 | TEST | | Connects to +B | | |
| 21 | Vss | | | | |
| 22 | G0 | Output | Key output terminal | | |
| 23 | G1 | Output | | | |
| 24 | G2 | Output | | | |
| 25 | G3 | Output | | | |
| 26 | H0 | Output | Segment output | a |  |
| 27 | H1 | Output | | b | |
| 28 | H2 | Output | | c | |
| 29 | H3 | Output | | d | |
| 30 | I0 | Output | | e | |
| 31 | I1 | Output | | f | |
| 32 | I2 | Output | | g' | |
| 33 | A0 | Input | SELECTOR switch input | | |
| 34 | A1 | Input | | | |
| 35 | A2 | Input | | | |

| Pin No. | Pin Name | I/O | Function and Operation | |
|---------|-----------------|-------|----------------------------------|------------|
| 36 | STOP | Input | Mechanism detection signal input | "L" Active |
| 37 | FF | Input | | "H" Active |
| 38 | PLAY | Input | | "H" Active |
| 39 | REW | Input | | "H" Active |
| 40 | DIR IN | Input | Direction switch input terminal | |
| 41 | VGG | | Connects to -B | |
| 42 | CL ₁ | Input | Clock input | |

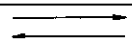
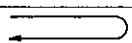
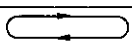
*1 A pulse is output at the following state:

- When changed to tape running Example FF → REW
- When REW operation performed and counter reaches "0000" when tape running in FWD direction.
- When FF operation performed and counter reaches "0000" when tape running in REW direction.

Initial operation at POWER ON

- Program contents are cleared.
- Tape counter is reset to "0000".
- STOP signal is output for about 3.5 seconds.
- Tape direction is set to FWD.

TRUTH TABLE

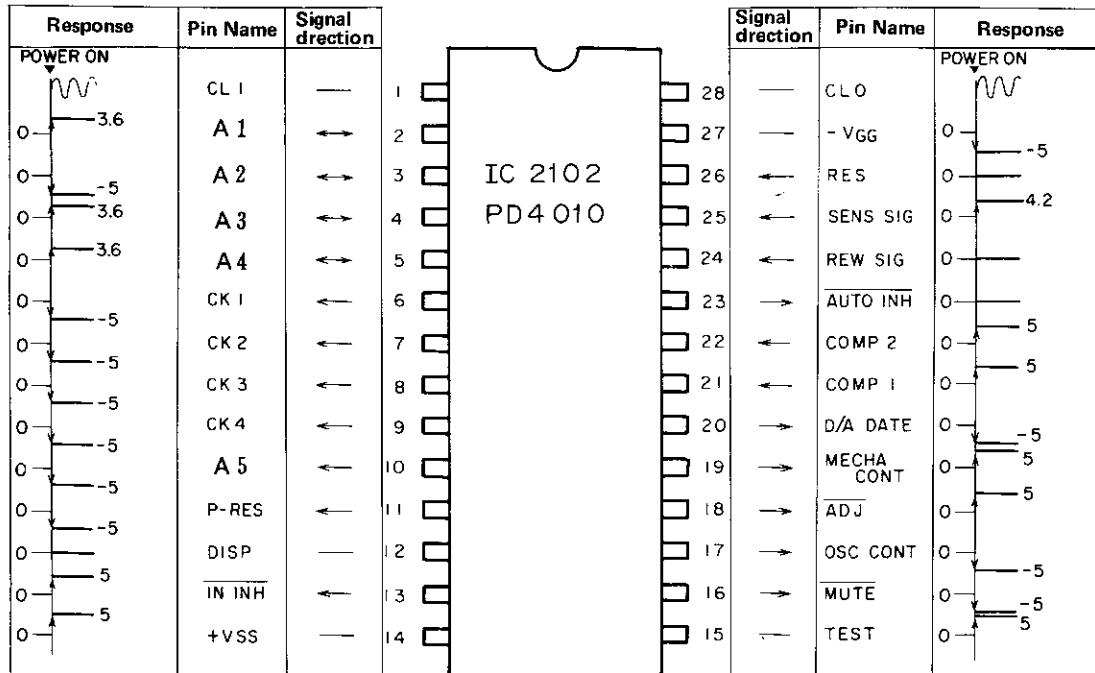
| Mode | Pin No. | 33 | 34 | 35 | Remarks |
|---|---------|----|----|----|---|
|  | | H | H | L | Stopped by end detection. |
|  | | H | L | H | Reversed by end detection during FWD PLAY. |
|  | | H | L | L | Reversal contents repeated for one selection. |
| REPEAT OFF | | L | H | L | Programmed contents repeated for one selection. |
| REPEAT ON | | L | L | H | Programmed contents selected repeatedly. |
| PMS | | L | H | H | Program heading. |

PINS VS MODE STATUS

| Mode Pin No. | STOP | FF | REW | PLAY | REC/PLAY | REW | STOP | PLAY | PLAY PAUSE | REC PAUSE |
|--------------|------|----|-----|------|----------|-----|------|------|------------|-----------|
| 4 | L | L | L | L | H | L | L | L | L | H |
| 36 | L | H | H | L | L | L | H | L | L | H |
| 37 | L | H | L | L | L | L | L | L | L | L |
| 38 | L | L | L | H | H | L | L | L | H | H |
| 39 | L | L | H | L | L | H | L | L | L | L |

| | | | |
|-------------|-------------------------|------|----------------------------|
| APPLICATION | AUTO BLE μ COMPUTER | NAME | PD4010 |
| MODEL | (CT-970) | TYPE | P MOS 4 BIT μ COMPUTER |

PIN ARRANGEMENT



Note: Voltage value are approximate.

PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|--------|--|
| 1 | CL 1 | | Clock input |
| 2 | A/D 1 | Output | AD conversion output LSB ↓ |
| 3 | A/D 2 | Output | |
| 4 | A/D 3 | Output | |
| 5 | A/D 4 | Output | |
| 6 | CK 1 | Output | BIAS clock output |
| 7 | CK 2 | Output | LEVEL clock output |
| 8 | CK 3 | Output | EQ Lch clock output |
| 9 | CK 4 | Output | EQ Rch clock output |
| 10 | A/D 5 | Output | A/D conversion output MBS |
| 11 | P-RES | Output | A/D conversion peak hold reset pulse output. "H" → Reset |

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|-----------------|--------|--|
| 12 | DISP | | Display output ※ 1 |
| 13 | IN INH | | Enables AUTO, TEST Operation input using A/D1 ~ A/D4. ※ 2 |
| 14 | V _{SS} | | +B |
| 15 | TEST | | CPU test pin. Usually connects to V _{SS} . |
| 16 | MUTE | Output | Oscillation frequency control output ※ 3 |
| 17 | OSC CONT | Output | |
| 18 | ADJ | Output | Shift register reset output "L" → AUTO operation, "H" → REW, AUTO cancel |
| 19 | MECHA CONT | | Combined with D/A DATA output to set input to REW or STOP mode ※ 4 |
| 20 | D/A DATA | | |
| 21 | COMPL | Input | A/D conversion comparator input (Lch) (Rch) |
| 22 | COMPR | Input | |
| 23 | AUTO INH | Input | AUTO operation ON/OFF control input "H" → AUTO BLE ON |
| 24 | REW SIG | Input | REW control input "H" → REW |
| 25 | SEN SIG | Input | Sensing pulse input |
| 26 | RES | | Reset. "H" → Reset, "L" → Start |
| 27 | V _{GG} | | -B |
| 28 | CL0 | | Clock input |

※ 1 Display output pins

| 12 Pin | Contents |
|--------|---|
| L | When data set at BLE and reference value. |
| H | BLE data is value set by AUTO. |
| L ↔ H | Auto operation. |

※ 2 Operation specification pins

| 2 | 3 | 4 | 5 | 13 | Contents |
|---|---|---|---|----|--------------------|
| H | L | H | H | H | Normal input check |
| L | L | H | H | H | AUTO Operation |
| H | L | L | H | H | TEST A |
| H | L | H | L | H | TEST B |
| X | H | X | X | H | TEST C |

X H or L

TEST A Reference value (DC voltage corresponding to playback output 0 dB) is output at the A/D pin and the internal oscillator is made f_L .

The RAM inside the CPU is checked, and if normal, the display is turned off.

TEST B Internal oscillator is made f_H . Others are the same as TEST A.

TEST C If in the recording mode, sweep is performed from minimum to maximum in BIAS, LEVEL, EQ order. Moreover, sweep can be stopped at any position by resetting the recording mode.

If in a mode other than the recording mode, the mechanism is set to the REC mode.

When 256 sensing pulses are output, the STOP mode is set.

TEST Mode setting

TEST A

PM9001 TEST A pin (No. 36) is grounded.

TEST B

PM9001 TEST B pin (No. 35) is grounded.

TEST C

PM9001 TEST C pin (No. 34) is grounded.

TEST mode resetting

Power is turned off.

※ 3 Oscillation frequency output control

| 16 | 17 | Contents |
|----|----|--|
| H | H | At AUTO, TEST A operation, f_L (Frequ. L) is selected. |
| H | L | At AUTO, TEST B operation, f_H (Frequ. R) is selected. |

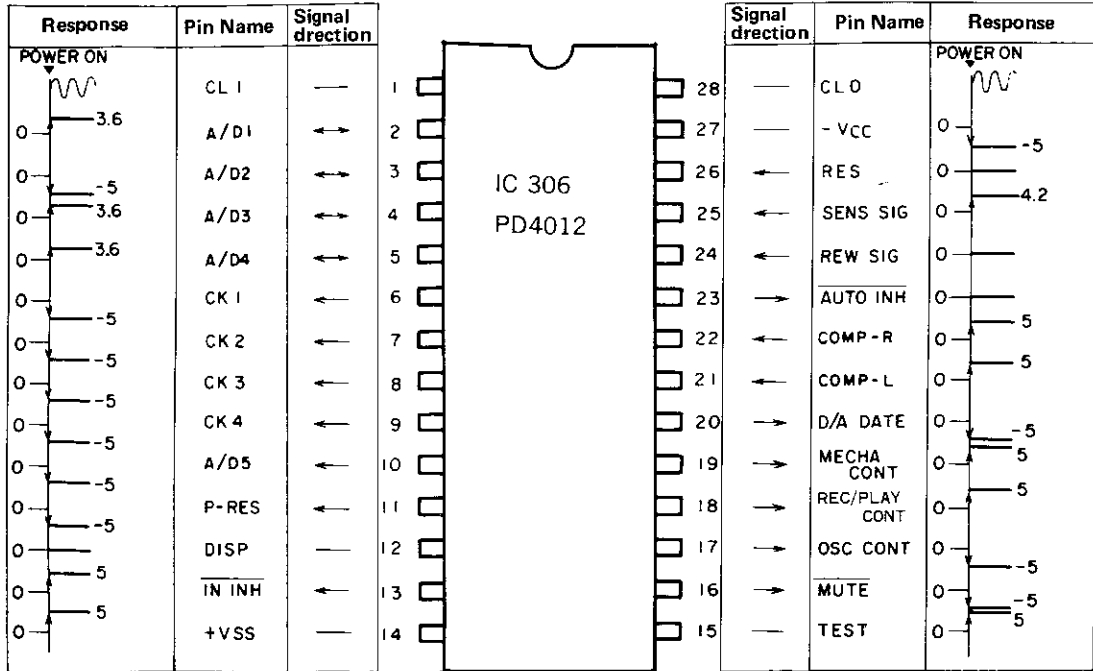
Pin 16 is "H" only at AUTO (ADJ mode) and TEST A, B.

※ 4 Mechanism control output

| 19 | 20 | Contents |
|----|----|--------------------|
| L | H | REW signal output |
| L | L | STOP signal output |

| | | | |
|-------------|----------|------|----------------------------|
| APPLICATION | AUTO BLE | NAME | PD4012 |
| MODEL | CT-9R | TYPE | P MOS 4 BIT μ COMPUTER |


PIN ARRANGEMENT



Note: Voltage value are approximate.

PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|--------|--|
| 1 | CL 1 | | Clock input |
| 2 | A/D 1 | Output | A/D conversion output LSB |
| 3 | A/D 2 | Output | |
| 4 | A/D 3 | Output | |
| 5 | A/D 4 | Output | |
| 6 | CK 1 | Output | BIAS clock output |
| 7 | CK 2 | Output | LEVEL clock output |
| 8 | CK 3 | Output | EQ Lch clock output |
| 9 | CK 4 | Output | EQ Rch clock output |
| 10 | A/D 5 | Output | A/D conversion output MSB |
| 11 | P. RES | Output | A/D conversion peak hold reset pulse output "H" → Reset |

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|-----------------|--------|--|
| 12 | DISP | Output | Display output ※ 1 |
| 13 | IN INH | | Enables AUTO, TEST operation input using A/D1–A/D4. ※ 2 |
| 14 | V _{SS} | | +B |
| 15 | TEST | | CPU test pin. Normally connects to V _{SS} . |
| 16 | MUTE | Output | Oscillation frequency control output. ※ 3 Outputs a pulse when AUTO operation started. |
| 17 | OSC CONT | Output | |
| 18 | REC/PLAY | Output | Outputs a pulse at the end of AUTO BLE during TIMER BLE operation.  |
| 19 | MECHA CONT | | Combined with D/A DATA output to set the input to the REW or STOP mode. ※ 4 |
| 20 | D/A DATA | | |
| 21 | COMPL | Input | A/D conversion comparator input (Lch) (Rch) |
| 22 | COMPR | Input | |
| 23 | AUTO INH | Input | AUTO operation ON/OFF control input. "H" → AUTO BLE ON |
| 24 | REW SIG | Input | REW control input. "H" → REW |
| 25 | SEN SIG | Input | Sensing pulse input. |
| 26 | RES | | Reset pin. "H" → Reset "L" → Start |
| 27 | V _{GG} | | -B |
| 28 | CL0 | | Clock input. |

※ 1 Display output pins

| 12 Pin | Contents |
|--------|--|
| L | When data and reference value set at BLE |
| H | BLE data is the value set by AUTO |
| L ↔ H | AUTO operation |

※ 2 Operation specification input pins

| 2 | 3 | 4 | 5 | 13 | Contents |
|---|---|---|---|----|---------------------|
| L | X | X | X | H | AUTO operation |
| H | L | L | H | H | TEST mode |
| H | H | H | L | H | Timer BLE operation |
| H | L | H | X | H | Normal input check |
| X | X | X | X | L | TEST, BLE operation |

X H or L

TEST A The reference value (DC voltage corresponding to playback output 0 dB) is output at the A/D pin and the internal oscillator is made f_L.

TEST B Internal oscillator is made f_H. Others are the same as TEST A.

TEST C BIAS is in the record state.

TEST Mode setting

TEST A PM9001 TEST A pin (No. 36) is grounded.

TEST B TEST A mode performed, then REWIND key pressed, .

TEST C TEST B mode performed, REC/PLAY key pressed, then REW key pressed,
and REC/PLAY key pressed again.

TEST mode resetting

Power set to OFF.

※ 3 Oscillation frequency control output

| 16 | 17 | Contents |
|----|----|--|
| H | H | f_L (Frequ. L) selected during AUTO, TEST A operation. |
| H | L | f_H (Frequ. R) selected during AUTO, TEST B operation. |

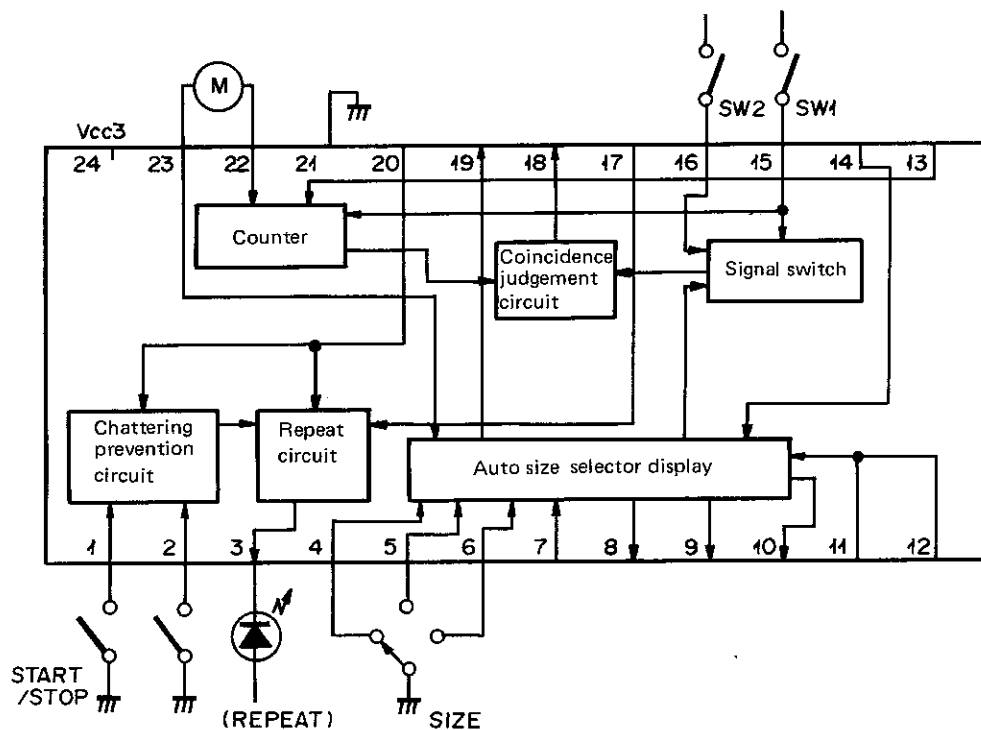
Pin 16 is "H" only at AUTO (ADJ mode) and TEST A, B.

※ 4 Mechanism control output

| 19 | 20 | Contents |
|----|----|--------------------|
| L | H | REW signal output |
| L | L | STOP signal output |

| | | | |
|-------------|------------------------------|------|--------------------------|
| APPLICATION | NUMBER OF SELECTIONS CONTROL | NAME | PD6001A |
| MODEL | PL-630 | TYPE | BIPOLAR I ² L |

BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|-----------------|--------|---|
| 1 | I ₁₁ | Input | Start-stop switch input |
| 2 | I ₁₂ | Input | Repeat switch input |
| 3 | O ₅ | Output | Repeat display output Lighted |
| 4 | I ₂ | Input | 30 cm size select input |
| 5 | I ₃ | Input | 25 cm size select input |
| 6 | I ₄ | Input | 17 cm size select input |
| 7 | | | Not used |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | C ₁ | Input | Operation mode select input |
| 12 | C ₂ | Input | Operation mode select input |
| 13 | I ₁ | Input | Lowering position sensor input (During read-in only) |

PD

| PinNo. | Pin Name | I/O | Function and Operation | |
|--------|-----------------|--------|------------------------|------------------------------|
| 14 | | | Not used | |
| 15 | I ₉ | Input | SW1 input | Mechanism position detection |
| 16 | I ₁₀ | Input | SW2 input | |
| 17 | I ₁₃ | Input | Rest sensor input | |
| 18 | O ₄ | Output | Down position output | |
| 19 | O ₆ | Output | No record output | |
| 20 | RESET | | Power ON initial reset | |
| 21 | GND | | | |
| 22 | I ₈ | Input | CW input | "H" → 22, "L" → 23 |
| 23 | I ₇ | Input | CCW input | "H" → 23, "L" → 22 |
| 24 | Vcc 3 | | | |

PINS VS MODE STATUS

| Mode PinNo. | POWER ON | ARM UP | LEAD IN | ARM DOWN | PLAY | END ZOOM | ARM UP | RETURN | ARM DOWN |
|----------------|----------|--------|---------|----------|------|----------|--------|--------|----------|
| 13 | H | H | H | | H | H | H | H | H |
| 17 | L | L | | H | H | H | H | H | |
| 18 | H | H | H | | H | H | H | H | H |

DOWN POSITION

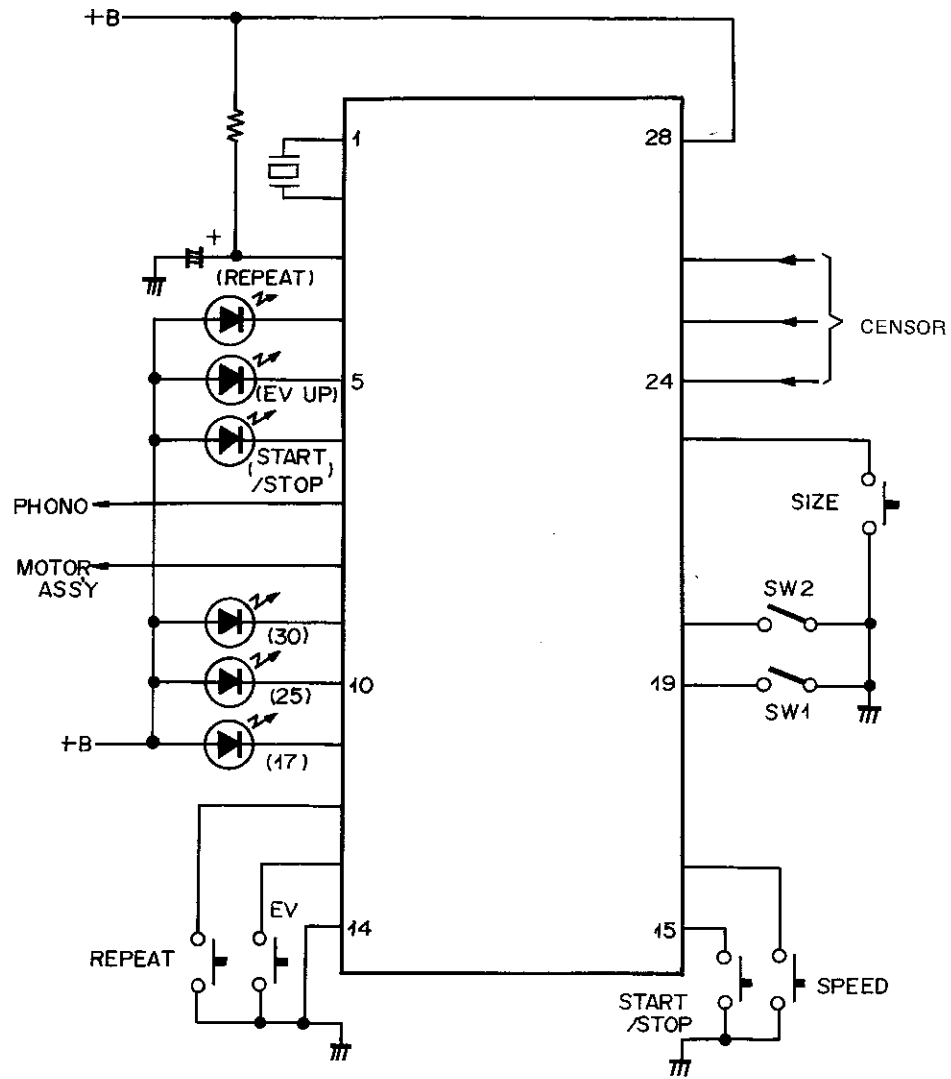
| | 30cm | 25cm | 17cm |
|---|------|------|------|
| 4 | L | H | H |
| 5 | H | L | H |
| 6 | H | H | L |

AUTO/MANUAL SWITCHING















| Mode PinNo. | AUTO | MANUAL |
|----------------|------|--------|
| 11 | H | L |
| 12 | H | L |

| | | | |
|-------------|--------------------------|------|--------|
| APPLICATION | FULL AUTO PLAYER CONTROL | NAME | PD6003 |
| MODEL | PL-9 | TYPE | N MOS |

CONNECTION DIAGRAM



PIN FUNCTIONS

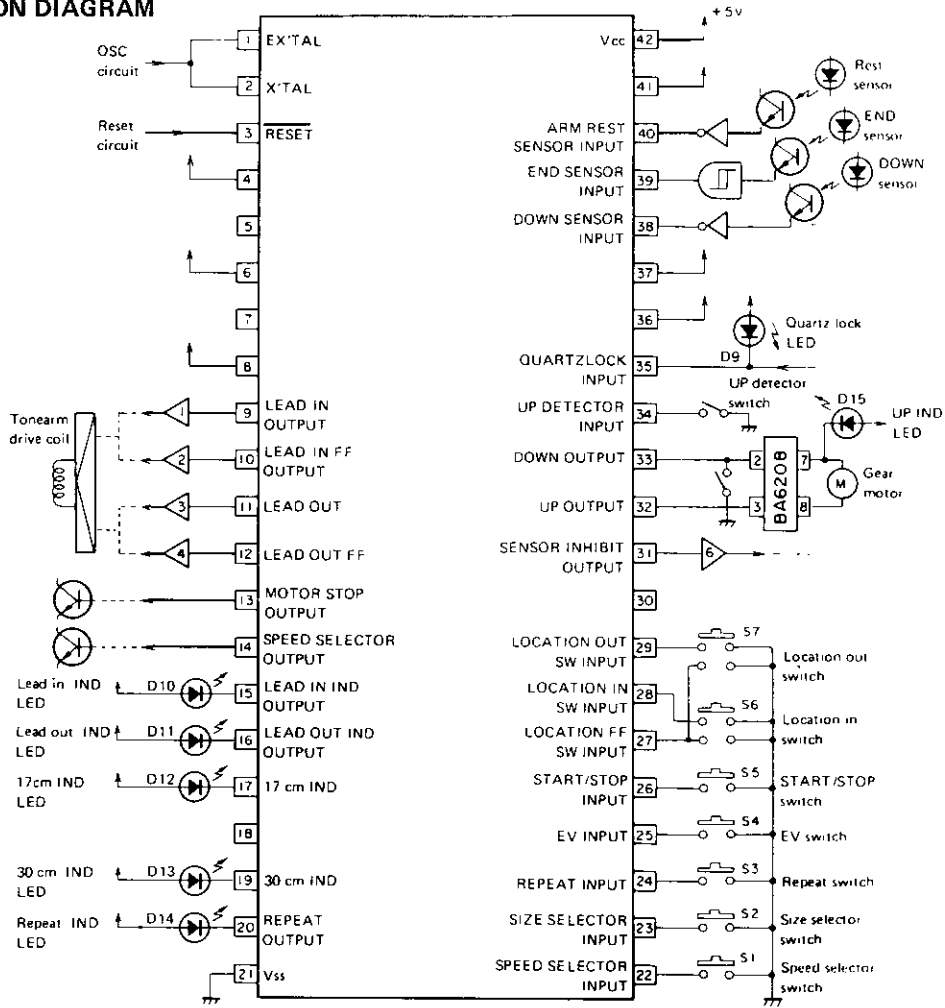
| Pin No. | Pin Name | I/O | Function and Operation |
|---------|-----------------|--------|---|
| 1 | EXTAL | | External oscillator 3 MHz |
| 2 | XTAL | | |
| 3 | RESET | | Power ON initial reset |
| 4 | O ₀ | Output | Repeat indication output  |
| 5 | O ₁ | Output | Elevator UP display output  |
| 6 | O ₂ | Output | Start-stop display output  |
| 7 | O ₃ | Output | Speed switching output "H" → 33 rpm, "L" → 45 rpm |
| 8 | O ₄ | Output | Phono motor stop output "H" → STOP, "L" → START |
| 9 | O ₅ | Output | 30 cm display output  |
| 10 | O ₆ | Output | 25 cm display output  |
| 11 | O ₇ | Output | 17 cm display output  |
| 12 | R ₀ | Input | Repeat switch input  |
| 13 | R ₁ | Input | Elevation switch input  |
| 14 | V _{SS} | | GND |
| 15 | R ₂ | Input | Start-stop switch input  |
| 16 | R ₃ | Input | Speed selector switch input  |
| 17 | R ₄ | Output | CCW output  |
| 18 | R ₅ | Output | CW output  |
| 19 | R ₆ | Input | SW 1 input } mechanism position detection (See the timing chart.) |
| 20 | R ₇ | Input | |
| 21 | R ₈ | | Not used. |
| 22 | R ₉ | | |
| 23 | R ₁₀ | Input | Size selector switch input  |
| 24 | K ₀ | Input | End B sensor input |
| 25 | K ₁ | Input | End A sensor input |
| 26 | K ₂ | Input | Down position sensor input  |
| 27 | K ₃ | | Auto/manual switching "H" → MANUAL, "L" → AUTO |
| 28 | V _{CC} | | |

PINS VS MODE STATUS

| Mode PinNo. | Power On | Arm Up | Lead In | Arm Down | Play | End Zoon | Arm Up | Auto Return | Arm Down |
|----------------|-------------|-----------|------------|-------------|------|-------------|-----------|----------------|-------------|
| 3 | | H | H | H | H | H | H | H | H |
| 5 | H | L | L | H | H | H | L | L | H |
| 6 | H | L | L | L | H | H | H | H | H |
| 8 | H | | L | L | L | L | L | L | |
| 12 | | H | H | H | H | H | H | | H |
| 15 | H | | H | H | H | H | H | H | H |
| 17 | H | H | L | H | H | H | H | H | |
| 18 | H | H | H | L | H | H | | L | |
| 19 | L | L | H | | L | L | H | H | |
| 20 | L | H | H | H | L | L | L | L | L |
| 24 | L | L | | H | H | | H | | L |
| 25 | L | L | | H | H | | H | | L |
| 26 | L | L | | L | H | H | H | | H |





















| | | | |
|-------------|--------------------------|------|--------|
| APPLICATION | FULL AUTO PLAYER CONTROL | NAME | PD6005 |
| MODEL | PL-L800 | TYPE | N MOS |

CONNECTION DIAGRAM



PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|-----|-----------------------------|
| 1 | EXTAL | | External oscillator (3 MHz) |
| 2 | XTAL | | |
| 3 | RESET | | Power ON initial reset |
| 4 | | | Not used. |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |

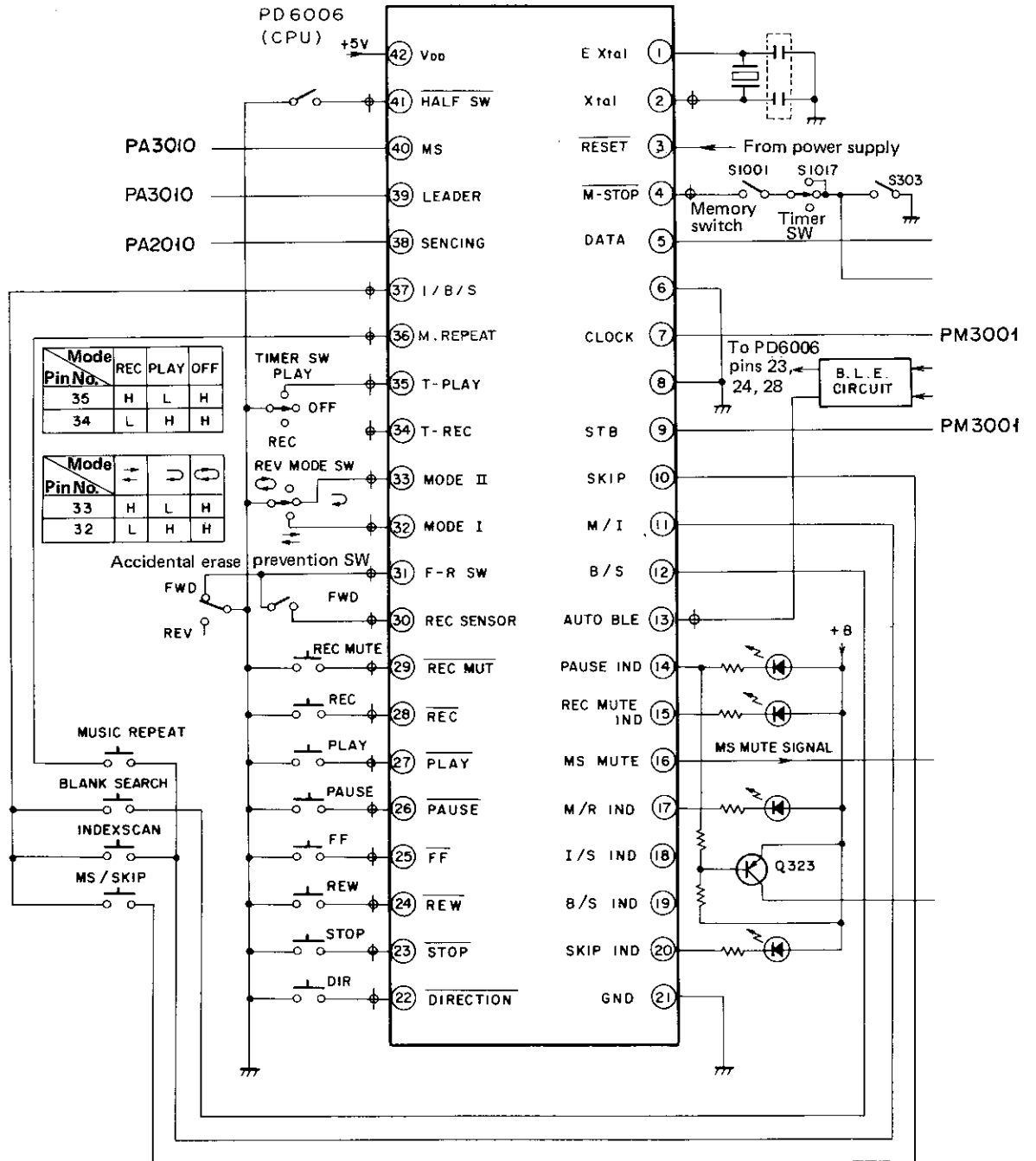
| PinNo. | Pin Name | I/O | Function and Operation |
|--------|-----------------|--------|---|
| 9 | P ₀ | Output | Read in  |
| 10 | P ₁ | Output | Read in FF  |
| 11 | P ₂ | Output | Read out  |
| 12 | P ₃ | Output | Read out FF  |
| 13 | O ₀ | Output | Phono motor STOP H → STOP, L → START |
| 14 | O ₁ | Output | Speed switching H → 33 rpm, L → 45 rpm |
| 15 | O ₂ | Output | Read in display  |
| 16 | O ₃ | Output | Read out display  |
| 17 | O ₄ | Output | 17 cm display  |
| 18 | | | Not used. |
| 19 | C ₆ | Output | 30 cm display  |
| 20 | O ₇ | Output | Repeat display  |
| 21 | V _{SS} | | GND |
| 22 | R ₀ | Input | Speed selector switch  |
| 23 | R ₁ | Input | Size selector switch  |
| 24 | R ₂ | Input | Repeat switch  |
| 25 | R ₃ | Input | Elevation switch  |
| 26 | R ₄ | Input | Start-stop switch  |
| 27 | R ₅ | Input | Locate FF switch  |
| 28 | R ₆ | Input | Locate in switch  |
| 29 | R ₇ | Input | Locate out switch  |
| 30 | | | Not used. |
| 31 | R ₉ | Output | Tracking sensor inhibit |
| 32 | R ₁₀ | Output | Up output |
| 33 | R ₁₁ | Output | Down output |
| 34 | R ₁₂ | Input | Up detection switch  |
| 35 | R ₁₃ | Input | Quartz lock input  |
| 36 | | | Not used. |
| 37 | | | Not used. |
| 38 | K ₀ | Input | 30 cm down position sensor  |
| 39 | K ₁ | Input | End sensor |
| 40 | K ₂ | Input | Reset sensor H → Rest, L → Not rest |
| 41 | K ₃ | | 2/3 size switching H → 2, L → 3 |
| 42 | V _{CC} | | +B supply |

PINS VS MODE STATUS

| Mode PinNo. | Power On | Lead In | Arm Down | Play | End Zoon | Arm Up | Auto Return |
|----------------|-------------|------------|-------------|------|-------------|-----------|----------------|
| 9 | H | | H | H | H | H | H |
| 10 | H | | H | H | H | H | H |
| 11 | H | H | H | H | H | | |
| 12 | H | H | H | H | H | | |
| 13 | H | L | L | L | L | L | |
| 15 | H | L | H | H | H | H | H |
| 16 | H | H | H | H | H | L | |
| 31 | H | | H | H | H | H | |
| 32 | H | H | H | L | L | H | H |
| 33 | H | H | H | L | L | L | H |
| 34 | L | L | H | H | H | H | L |
| 35 | H | | L | L | L | L | |
| 38 | L | | | | L | L | |
| 39 | H | | L | L | | L | |
| 40 | H | | L | L | L | L | |


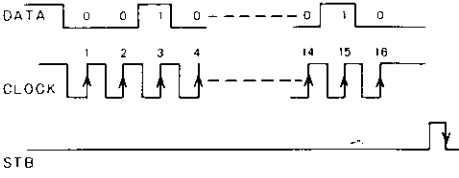
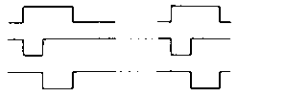
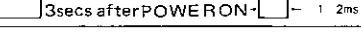


| | | | |
|-------------|--|------|----------------------------|
| APPLICATION | 3DD MECHANISM CONTROL MULTI-FUNCTION μ COMPUTER | NAME | PD6006 |
| MODEL | CT-7R | TYPE | N MOS 4 BIT μ COMPUTER |

CONNECTION DIAGRAM



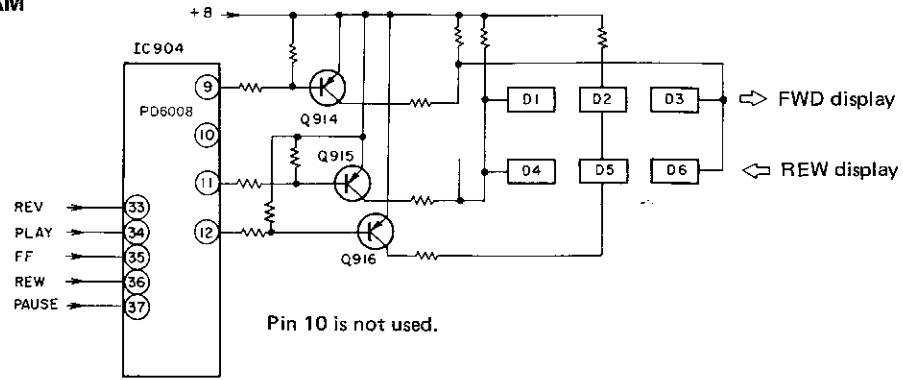
PD

PIN FUNCTIONS

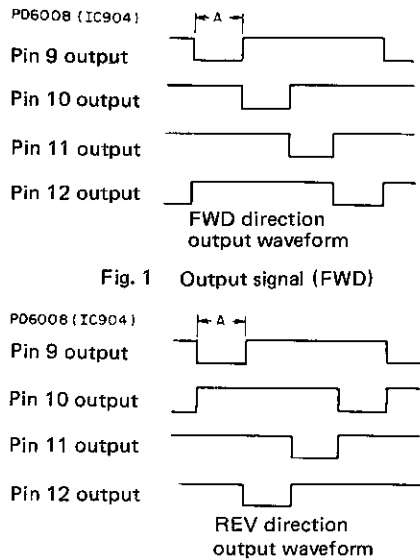
| PinNo. | Pin Name | I/O | Function and Operation | | |
|--------|---------------|--------|--|--|--------------------------|
| 1 | Extal | | Internal clock oscillator external circuit terminal f=3.58MHz  Pin 2-GND waveform | | |
| 2 | Xtal | | | | |
| 3 | RESET | Input | CPU reset input. Reset at L level, Normally H. | | |
| 4 | M-STOP | Input | Memory STOP input. Memory stop operation at L level. | | |
| 5 | DATA | Output | Data output to PM3001. |  | Serial output to PM3001. |
| 6 | | | Not used. | | |
| 7 | CLOCK | Output | CLOCK output to PM3001. | | |
| 8 | | | Not used. | | |
| 9 | STB | Output | STB output to PM3001. | | |
| 10 | SKIP | Output | SKIP key scan output |  | KEY SCAN output |
| 11 | M/I | Output | MUSIC REPEAT INDEX SCAN key scan output | | |
| 12 | B/S | Output | BLANK SEARCH key scan output | | |
| 13 | AUTO BLE | Output | AUTO BLE start output |  | |
| 14 | PAUSE IND | Output | PAUSE display output. L level at PAUSE. | | Display output |
| 15 | REC MUTE IND | Output | REC MUTE display output. L level at REC MUTE. | | |
| 16 | MS MUTE | Output | MS MUTE output. PA3010 MS signal MUTE output. L level when reel motor turning during inter-music gap detection function operation. | | |
| 17 | M/R IND | Output | MUSIC REPEAT display output. L level at MUSIC REPEAT operation. | | Display output |
| 18 | I/S IND | Output | INDEX SCAN display output. L level at INDEX SCAN operation. | | |
| 19 | B/S IND | Output | BLANK SEARCH display output. L level at BLANK SEARCH operation. | | |
| 20 | SKIP IND | Output | SKIP display output. L level at SKIP operation. | | |
| 21 | GND | | GND | | |
| 22 | DIRECTION | Input | DIR (direction) KEY input | | Operation key input |
| 23 | STOP | Input | STOP key input | | |
| 24 | REW | Input | REW key input | | |
| 25 | FF | Input | FF key input | | |
| 26 | PAUSE | Input | PAUSE key input | | |
| 27 | PLAY | Input | PLAY key input | | |
| 28 | REC | Input | REC/PLAY key input | | |
| 29 | REC MUT | Input | REC MUTE key input | | |
| 30 | REC detection | Input | REC detection switch input. REC enable when L level. REC not enable when H level. | | Mechanism SW input |
| 31 | F-R SW | Input | FWD/REV detection switch input. FWD when L level. REV when H level. | | |
| 32 | MODE I | Input | Mode selector switch input | | Mode selector SW input |
| 33 | MODE II | Input | | | |
| 34 | T-REC | Input | Timer REC switch input | | Timer mode SW input |
| 35 | T-PLAY | Input | Timer PLAY switch input | | |
| 36 | M REPEAT | Input | MUSIC REPEAT key input | | Key matrix input |
| 37 | I/B/S | Input | INDEX SCAN, BLANK SEARCH, SKIP key input | | |
| 38 | SENCING | Input | Sensing pulse input. Input from PA2010 pin.  : When reel base rotating. | | |
| 39 | LEADER | Input | Leader tape detection pulse input. Input from PA3010 pin 2.  : When leader tape detected. | | |
| 40 | MS | Input | Inter-music signal input. H level when between music at PLAY, FF, REW while between music function operating. | | |
| 41 | HALF SW | Input | Cassette half switch input. Half when L level. No half when H level. | | |
| 42 | VDD | | +5 V power supply. | | |

| | | | |
|-------------|------------------|------|----------------------------|
| APPLICATION | REALTIME COUNTER | NAME | PD6008 |
| MODEL | CT-9R | TYPE | N MOS 4 BIT μ COMPUTER |

BLOCK DIAGRAM




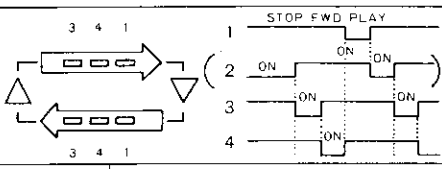

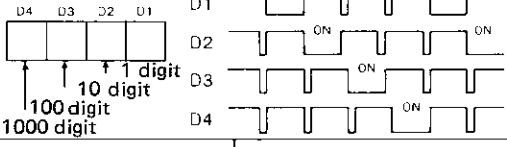
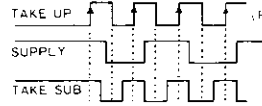
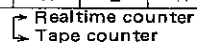
TIMING CHART



TRUTH TABLE

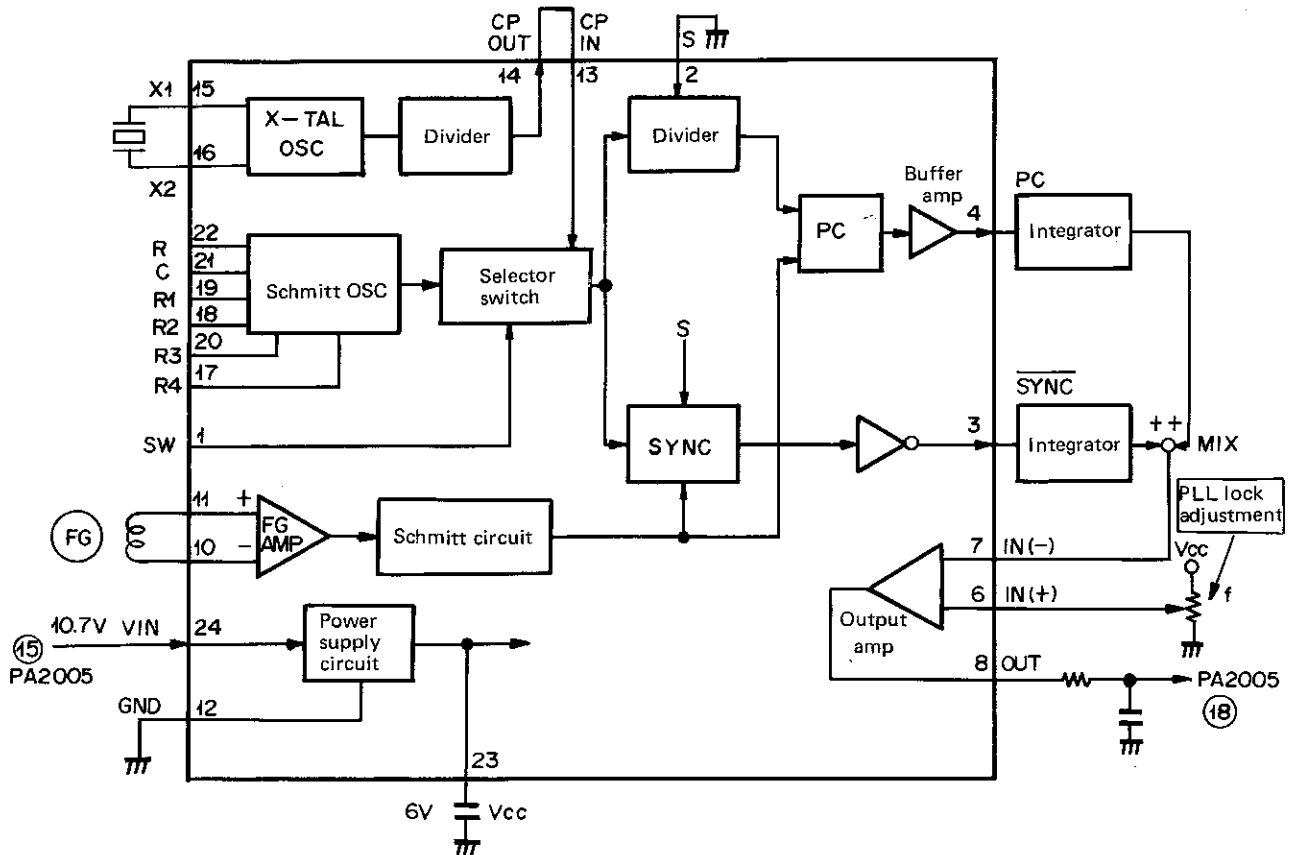
| Input mode | PD6008 PIN No. | | | | | | Output pin | | |
|------------|----------------|----|----|----|----|---|----------------|----|---|
| | 33 | 34 | 35 | 36 | 37 | 9 | 11 | 12 | |
| FWD | STOP | L | H | H | H | H | H | H | H |
| | FF (FF) | L | H | L | H | H | Fig. 1 A=60mS | | |
| | REW (REW) | L | H | H | L | H | Fig. 2 A=60mS | | |
| | PLAY | L | L | H | H | H | Fig. 1 A=500mS | | |
| | REC | L | L | H | H | H | | | |
| | PLAY PAUSE | L | L | H | H | L | H | H | H |
| | REC PAUSE | L | L | H | H | L | H | H | H |
| REV | STOP | H | H | H | H | H | H | H | H |
| | FF (FF) | H | H | L | H | H | Fig. 1 A=60mS | | |
| | REW (REW) | H | H | H | L | H | Fig. 2 A=60mS | | |
| | PLAY | H | L | H | H | H | Fig. 2 A=500mS | | |
| | PLAY PAUSE | H | L | H | H | L | H | H | H |
| | PAUSE | H | H | H | H | L | H | H | H |

PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation | | | | | | | | | | | | | | | | | |
|---------|----------------------|--------|--|---|---------------------------------------|-------|------|------|------|--------|---|---|---|---|--------|---|---|---|---|-------------------|
| 1 | Extal | | Internal clock oscillator external circuit terminal f=3.5 MHz  Pin 2 - GND waveform | | | | | | | | | | | | | | | | | |
| 2 | Xtal | | | | | | | | | | | | | | | | | | | |
| 3 | RESET | Input | CPU reset input. Reset at L level. Normally H. | | | | | | | | | | | | | | | | | |
| 4 | IRQ | | Not used. | | | | | | | | | | | | | | | | | |
| 5 | S0 | | | | | | | | | | | | | | | | | | | |
| 6 | S1 | | | | | | | | | | | | | | | | | | | |
| 7 | SC/TO | | | | | | | | | | | | | | | | | | | |
| 8 | TC | | | | | | | | | | | | | | | | | | | |
| 9 | TAPE RUN OUT 1 | Output | Tape running display1, Lighted when L |  | Tape running direction display output | | | | | | | | | | | | | | | |
| 10 | TAPE RUN OUT 2 | Output | Tape running display2, Lighted when L | | | | | | | | | | | | | | | | | |
| 11 | TAPE RUN OUT 3 | Output | Tape running display3, Lighted when L | | | | | | | | | | | | | | | | | |
| 12 | TAPE RUN OUT 4 | Output | Tape running display4, Lighted when L | | | | | | | | | | | | | | | | | |
| 13 | SEGMENT DATA a | Output | Segment data output a, ON when H. |  | Segment data output | | | | | | | | | | | | | | | |
| 14 | SEGMENT DATA b | Output | Segment data output b, ON when H. | | | | | | | | | | | | | | | | | |
| 15 | SEGMENT DATA c | Output | Segment data output c, ON when H. | | | | | | | | | | | | | | | | | |
| 16 | SEGMENT DATA d | Output | Segment data output d, ON when H. | | | | | | | | | | | | | | | | | |
| 17 | SEGMENT DATA e | Output | Segment data output e, ON when H. | | | | | | | | | | | | | | | | | |
| 18 | SEGMENT DATA f | Output | Segment data output f, ON when H. | | | | | | | | | | | | | | | | | |
| 19 | SEGMENT DATA g | Output | Segment data output g, ON when H. | | | | | | | | | | | | | | | | | |
| 20 | SEGMENT DATA DOT | Output | Segment data output DOT, ON when H. | | | | | | | | | | | | | | | | | |
| 21 | GND | | GND | | | | | | | | | | | | | | | | | |
| 22 | Ra | | Not used. | | | | | | | | | | | | | | | | | |
| 23 | Ri | Input | CPU test program input. Fixed at H. | | | | | | | | | | | | | | | | | |
| 24 | TAPE RUN SELECT | Input | Tape running display speed switching. H: Low speed, L: High speed Fixed at H. | | | | | | | | | | | | | | | | | |
| 25 | TAPE COUNTER Q-PULSE | Output | L output when tape counter 0000. Normally H. Output regardless of the display mode. (Realtime, tape counter) | | | | | | | | | | | | | | | | | |
| 26 | DIGIT 1 | Output | Digit output 1 |  | Digit output | | | | | | | | | | | | | | | |
| 27 | DIGIT 2 | Output | Digit output 2 | | | | | | | | | | | | | | | | | |
| 28 | DIGIT 3 | Output | Digit output 3 | | | | | | | | | | | | | | | | | |
| 29 | DIGIT 4 | Output | Digit output 4 | | | | | | | | | | | | | | | | | |
| 30 | TAKE UP | Input | Reel motor R HA Hall element input |  | Hall element input | | | | | | | | | | | | | | | |
| 31 | SUPPLY | Input | Reel motor L HA Hall element input | | | | | | | | | | | | | | | | | |
| 32 | TAKE SUB | Input | Reel motor R HB Hall element input | | | | | | | | | | | | | | | | | |
| 33 | REV | Input | H when mechanism mode is REV. L when mechanism mode is FWD. | Mechanism mode input | | | | | | | | | | | | | | | | |
| 34 | PLAY | Input | L when mechanism mode is PLAY, REC, PLAY/PAUSE, REC PAUSE. | | | | | | | | | | | | | | | | | |
| 35 | FF | Input | L when mechanism mode is FF. | | | | | | | | | | | | | | | | | |
| 36 | REW | Input | L when mechanism mode is REW. | | | | | | | | | | | | | | | | | |
| 37 | PAUSE | Input | L when mechanism mode is PLAY PAUSE, REC/PAUSE. | | | | | | | | | | | | | | | | | |
| 38 | TAPE SELECTOR 1 | Input | Tape time selector SW input 1 | <table border="1"> <tr> <td></td> <td>C-46L</td> <td>C-46</td> <td>C-60</td> <td>C-90</td> </tr> <tr> <td>Pin 38</td> <td>L</td> <td>L</td> <td>H</td> <td>H</td> </tr> <tr> <td>Pin 39</td> <td>L</td> <td>H</td> <td>L</td> <td>H</td> </tr> </table> | | C-46L | C-46 | C-60 | C-90 | Pin 38 | L | L | H | H | Pin 39 | L | H | L | H | Selector SW input |
| | C-46L | C-46 | C-60 | | C-90 | | | | | | | | | | | | | | | |
| Pin 38 | L | L | H | | H | | | | | | | | | | | | | | | |
| Pin 39 | L | H | L | H | | | | | | | | | | | | | | | | |
| 39 | TAPE SELECTOR 2 | Input | Tape time selector SW input 2 | | | | | | | | | | | | | | | | | |
| 40 | DISPLAY MODE | Input | Counter display mode selector SW input. "L" at SW ON. R  | | | | | | | | | | | | | | | | | |
| 41 | COUNTER RESET | Input | Tape counter reset SW input. "L" at SW ON. | | | | | | | | | | | | | | | | | |
| 42 | Vcc | | +5 V power supply. | | | | | | | | | | | | | | | | | |

| | | | |
|-------------|---------------|------|------------------|
| APPLICATION | MOTOR CONTROL | NAME | PD8001 |
| MODEL | (CT-970) | TYPE | I ² L |

BLOCK DIAGRAM



PIN FUNCTIONS

| PinNo. | Voltage (V) | Pin Name | I/O | Function and Operation |
|--------|-------------|--------------------|--------|----------------------------------|
| 1 | (2.3) | SW | Input | X-Tal OSC and CR OSC selector SW |
| 2 | 1 | S | Input | Divider selector SW |
| 3 | | SYNC | Output | F/V converter output |
| 4 | | PC | Output | Phase comparator output |
| 5 | (0) | NC | — | Not used. |
| 6 | 3.5 | OP IN ⁺ | Input | SYNC, PC, mixing, integration |
| 7 | 3.5 5 | OP IN ⁻ | Input | OUTPUT AMP INPUT |
| 8 | 4 | OPOUT | Output | Output amp input |
| 9 | (0) | NC | — | Not used. |

| Pin No. | Voltage (V) | Pin Name | I/O | Function and Operation |
|---------|-------------|-----------------|--------|---|
| 10 | | FG ⁻ | Input | FG (frequency generator) input |
| 11 | 0 | FG ⁺ | Input | |
| 12 | 0 | GND | — | |
| 13 | | CP IN | Input | |
| 14 | | CPOUT | Output | |
| 15 | 0.5 | X1 | Input | X-Tal OSC input |
| 16 | 0.4 | X2 | Input | |
| 17 | (0) | R4 | — | CROSC external terminal for pitch control |
| 18 | (0) | R2 | — | |
| 19 | (0) | R1 | — | |
| 20 | (0) | R3 | — | |
| 21 | (0) | C | — | |
| 22 | (0) | R | — | |
| 23 | 6 | V _{cc} | Output | Internal constant voltage output |
| 24 | 1 0.5 | V IN | Input | Power supply input |















PIN FUNCTIONS

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|--------------|--------|---|
| 1 | -Vcc | | - 9V |
| 2 | Vcc | | + 9V |
| 3 | GND | | 0V |
| 4 | RM DIA | Output | Reel motor drive D/A voltage output |
| 5 | GM DIA | Output | Gear motor drive D/A voltage output |
| 6 | INH IN | | Inhibits pin (4) output while gear motor is moving. *1 |
| 7 | REEL SIG | Input | Reel base rotation detection pulse is input. |
| 8 | AUTO REW | | When "L", automatically reversed when auto operation stopped by tape end. |
| 9 | MM CR2 | | AUTO STOP time constant setting terminal |
| 10 | PB MUTE | Output | 3 head muting output |
| 11 | LINE MUTE | Output | 2 head muting output |
| 12 | REC MUTE | Output | 2, 3 head recording muting output |
| 13 | MM CR3 | | MUTE TIMING time constant setting terminal |
| 14 | FF/CUE IND | Output | Mode display outputs |
| 15 | REW/REV IND | Output | |
| 16 | PLAY IND | Output | |
| 17 | CUE/REV IND | Output | |
| 18 | REC IND | Output | |
| 19 | PAUSE IND | Output | |
| 20 | GND | | |
| 21 | MM CR1 | | Inter-mode delay time constant setting constant |
| 22 | REC | Input | Operation button input terminals |
| 23 | PLAY | Input | |
| 24 | STOP | Input | |
| 25 | PAUSE | Input | |
| 26 | HALF | | Cassette half switch connection terminal "H" → No cassette half |
| 27 | RST | | Reset input terminal "L" → Reset |
| 28 | REC PIN | | Accidental erase prevention switch connection terminal "H" → Tab |
| 29 | FF | Input | Operation button input terminals |
| 30 | RWD | Input | |
| 31 | PMS | | PMS terminal. PMS performed by FF, REW. |
| 32 | CUE/REV CONT | | Not used. |
| 33 | REPEAT | | One selection repeat at PMS. |
| 34 | PMS DETC | | PMS detection time setting terminal |
| 35 | PMS DELAY | | PMS operating time delay terminal |

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|------------|-----|----------------------------------|
| 36 | GAIN ADJ | | PMS sensitivity setting terminal |
| 37 | SIG IN | | PMS input terminal |
| 38 | TIMER PLAY | | Timer play terminal |
| 39 | TIMER REC | | Timer record terminal |
| 40 | EJECT | | Operation button input terminal |

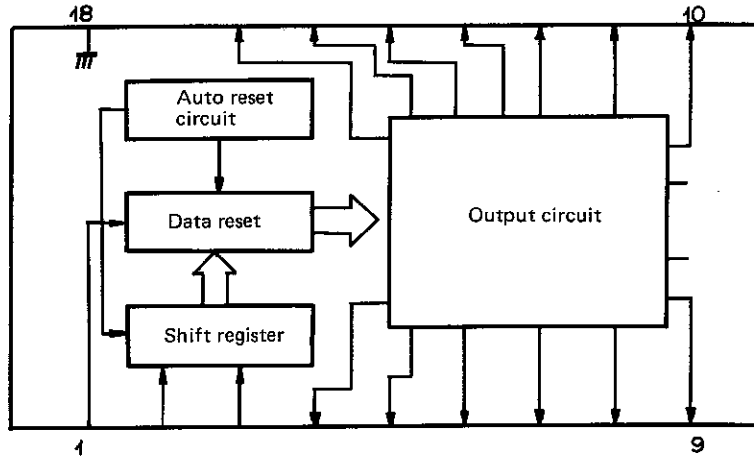
※ 1 When pin (6) exceeds ± 3.4 V, pin (4) \rightarrow 0 V.

PINS VS MODE STATUS

| Mode PinNo. | STOP | PLAY | PLAY PAUSE | STOP | FF | REW | PLAY | STOP | EJECT | REC PLAY | REC PAUSE |
|----------------|------|---|---------------|------|---|-----|--|------|---|---|---|
| 7 | L |  | L | L |  | H |  | L | L |  | L |
| 10 | H |  | H | H | H | H |  | H | H |  | L |
| 11 | H |  | L | H | H | H |  | H | H |  |  |
| 12 | H | L | L | H | H | H | L | H | H |  | L |
| 18 | L | L | L | L | L | L | L | L | L |  | H |
| 23 | H | L | H | H | H | H | L | H | H | L | H |
| 25 | H | H | L | H | H | H | H | H | H | H | L |
| 29 | H | H | H | H | L | H | H | H | H | H | H |
| 30 | H | H | H | H | H | L | H | H | H | H | H |
| 40 | L | L | L | L | L | L | L | L |  | L | L |

| | | | |
|-------------|--|------|-------------------------------------|
| APPLICATION | 3DD MECHANISM μ COMPUTER OUTPUT EXPANSION | NAME | PM3001 |
| MODEL | CT-7R | TYPE | SILICON MONOLITHIC I ² L |

















BLOCK DIAGRAM



PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|-----------|--------|--|
| 1 | STB | Input | Serial data strobe input |
| 2 | CLOCK | Input | Clock input |
| 3 | DATA | Input | Serial data input |
| 4 | ML | Output | L reel motor control output |
| 5 | MR | Output | R reel motor control output |
| 6 | HEAD | Output | 2 head use head switching relay drive output. |
| 7 | SOL - L | Output | Solenoid L drive output. |
| 8 | SOL - R | Output | Solenoid R drive output. |
| 9 | P.B MUTE | Output | 3 head PLAY BACK MUTE control output. |
| 10 | LINE MUTE | Output | 2 head LINE MUTE control output. |
| 11 | REC MUTE | Output | REC MUTE control output. |
| 12 | BIAS | Output | Bias oscillation control output. |
| 13 | REC | Output | 2 head REC/PB switching output and REC LED drive output. |
| 14 | REW | Output | REW running display output. |
| 15 | FF | Output | FF running display output. |
| 16 | PLAY | Output | PLAY running display output. |
| 17 | Vcc | | Power supply |
| 18 | GND | | |

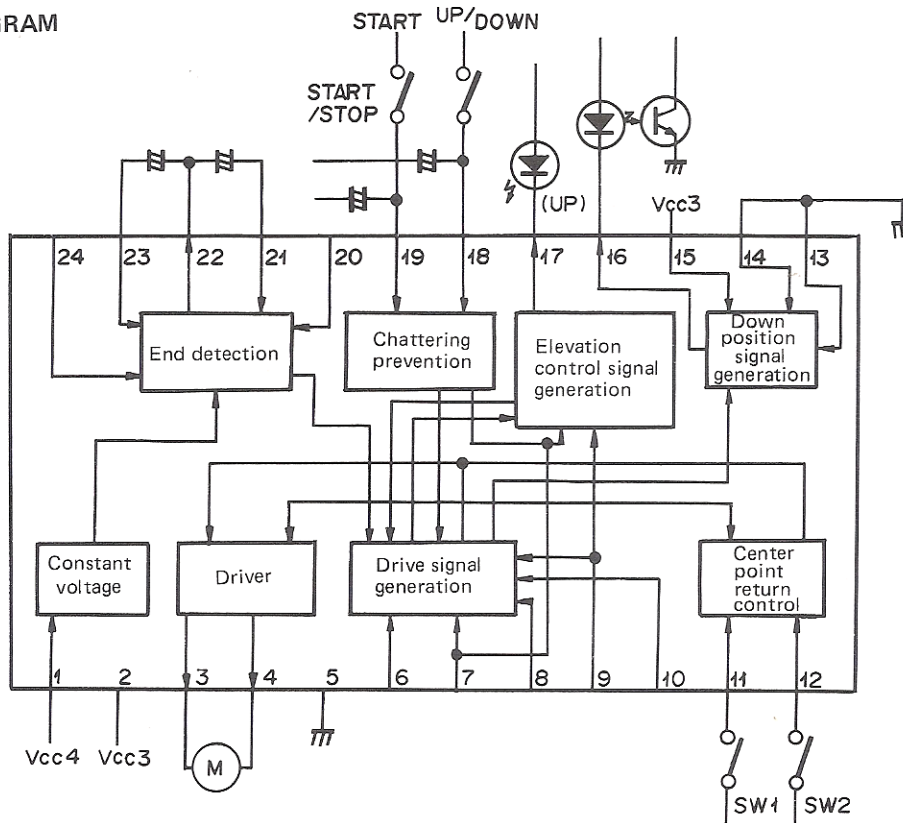
PINS VS MODE STATUS

| MODE PIN No. | STOP | FF | STOP | REW | STOP | PLAY | STOP | PLAY PAUSE | STOP | REC PLAY | REC PAUSE |
|--------------------|------|---|------|---|------|--|------|---------------|------|--|---|
| 4 | L | L | L |  | L | L | L | L | L | L | L |
| 5 | L |  | L | L | L | ^M  | L | L | L | ^M  | M |
| 6 | L | L | L | L | L | L | L | L | L |  | H |
| 7 | H | H | H | H | H |  | H | H | H |  | H |
| 8 | H | L | H | L | H | L | H | L | H | L | L |
| 9 | H | H | H | H | H |  | H | H | H |  | H |
| 10 | H | H | H | H | H |  | H | H | H |  |  |
| 11 | H | H | H | H | H | H | H | H | H |  | H |
| 12 | L | L | L | L | L | L | L | L | L | H |  |
| 13 | L | L | L | L | L | L | L | L | L |  |  |

M: 2.5V

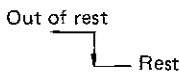
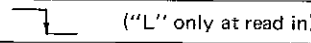
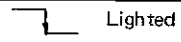


| | | | |
|-------------|------------------------------------|------|--------------------------|
| APPLICATION | RECORD PLAYER ELECTRONIC RETURN | NAME | PM6001 |
| MODEL | PL-630 | TYPE | Bipolar I ² L |

BLOCK DIAGRAM










PIN FUNCTIONS

| Pin No. | Pin Name | I/O | Function and Operation | |
|---------|-------------------|--------|-----------------------------|---------------------|
| 1 | V _{cc} 4 | | | |
| 2 | V _{cc} 3 | | | |
| 3 | O ₃ | Output | CCW output | "H" → 3, "L" → 4 |
| 4 | O ₂ | Output | CW output | "H" → 4, "L" → 3 |
| 5 | GND | | | |
| 6 | C ₁ | Input | Auto/manual switching input | "H" auto "L" MANUAL |
| 7 | RESET | | Power ON initial reset | |
| 8 | I ₈ | Input | No record input | Yes No |
| 9 | I ₄ | Input | Down position input | |

| PinNo. | Pin Name | I/O | Function and Operation |
|--------|------------------|--------|---|
| 10 | I ₃ | Input | Rest sensor input  |
| 11 | I ₂ | Input | SW 1 input } mechanism position detection |
| 12 | I ₁ | Input | |
| 13 | | | Not used. |
| 14 | | | |
| 15 | F-I ₁ | | Vcc 3 pull-up |
| 16 | F-O ₁ | Output | Down sensor output  |
| 17 | O ₄ | Output | Arm UP display output  |
| 18 | I ₇ | Input | UP/DOWN switch input  |
| 19 | I ₆ | Input | Start-stop switch input  |
| 20 | TIMING SIG IN | Input | Phono motor FG signal input |
| 21 | CAP 2 | | End detection (voltage hold) capacitor terminal |
| 22 | COM | | COM terminal |
| 23 | CAP 1 | | Same as CAP 2. |
| 24 | SIG IN | | End detection signal input (4 ~ 6 V) |

PINS VS MODE STATUS

| MODE PinNo. | POWER ON | ARM UP | LEAD IN | ARM DOWN | PLAY | END ZOOM | ARM UP | RETURN | ARM DOWN |
|----------------|----------|---|---|---|------|--|---|--------|---|
| 9 | H | H | H |  | H | H | H | H | H |
| 10 | L | L |  | H | H | H | H | H |  |
| 16 | H |  | L |  | H | H | H | H | H |
| 24 | L | L | L | L | L |  |  | L | L |