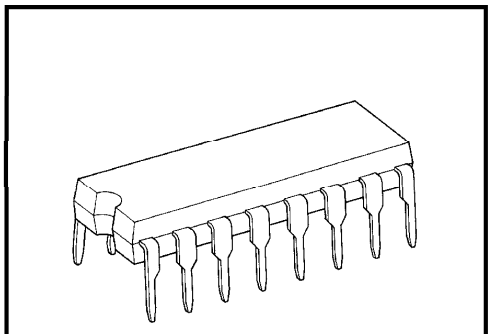
TENTATIVE TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA8859CP

## TV BIAS DISTORTION COMPENSATION IC

The TA8859CP is an IC for TV deflection stage to compensate various horizontal, vertical distortion, with a package of 16 pin DIP, controlled via $I^2C$ bus.



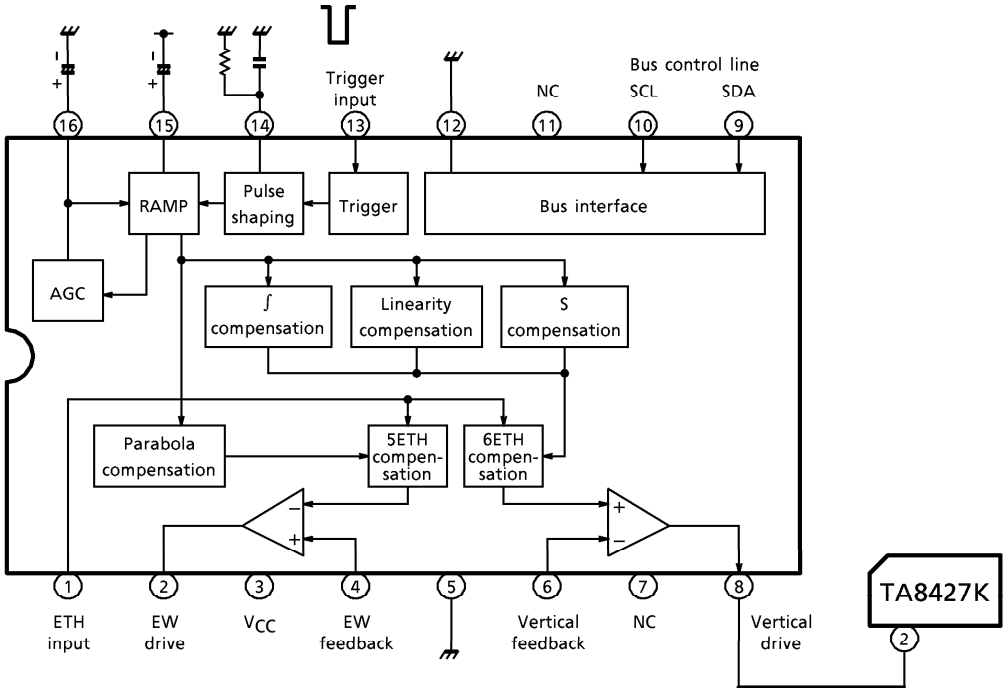
DIP16-P-300-2.54B

Weight : 1.11g (Typ.)

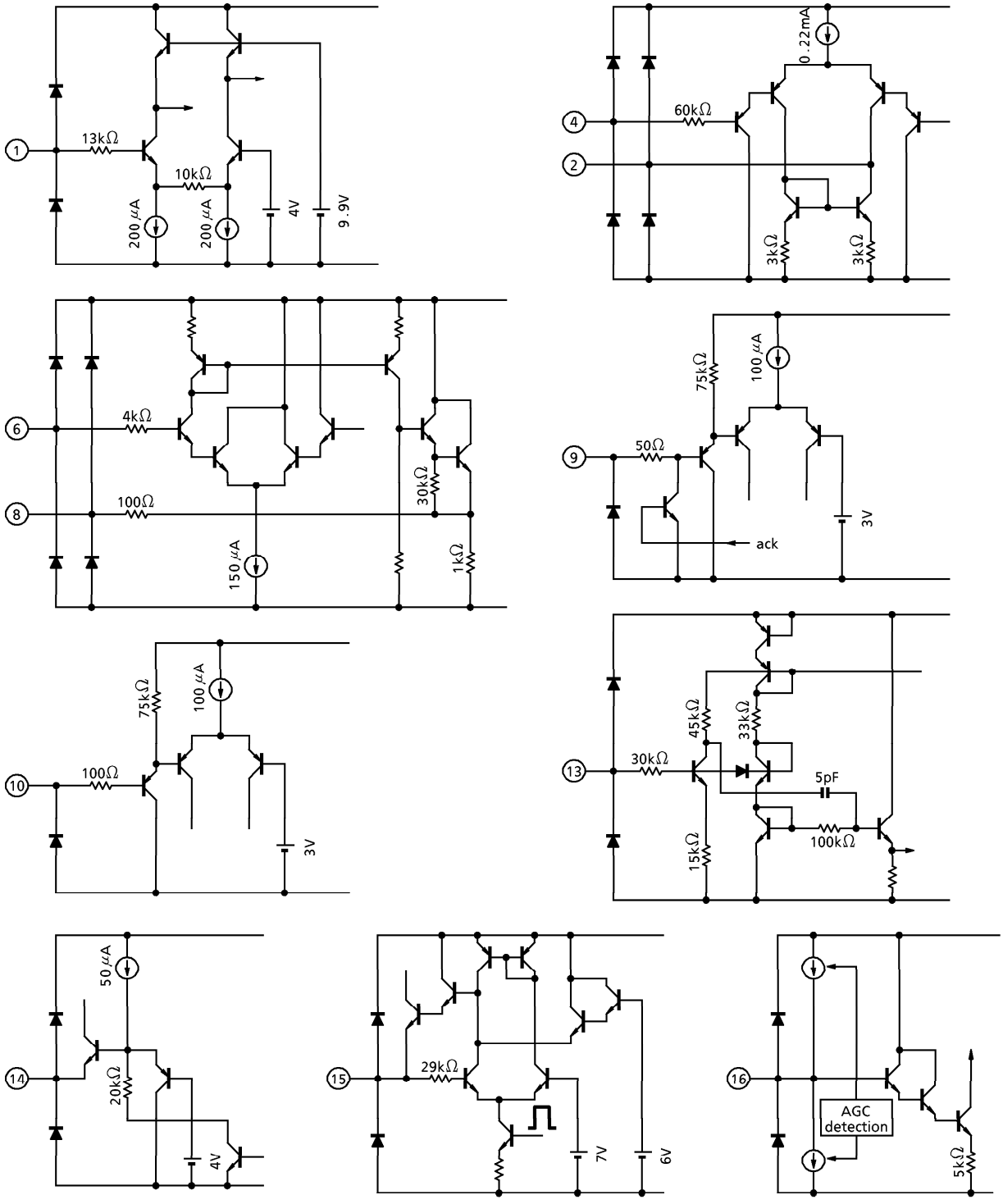
### FEATURES

- Vertical linearity correction
- Vertical S correction
- E-W parabola
- E-W corner
- Trapezium distortion compensation

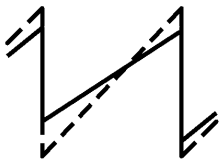
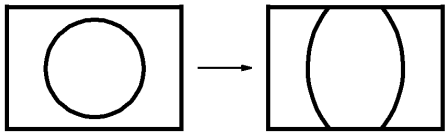
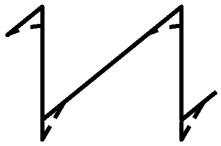
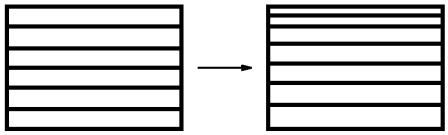
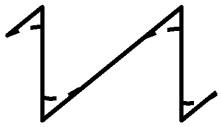
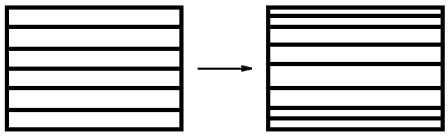
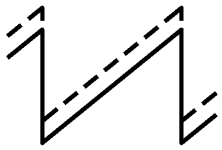
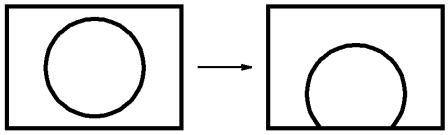
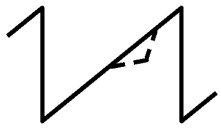
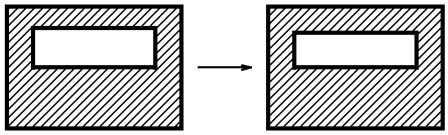
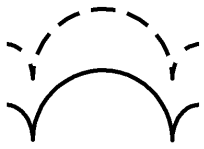
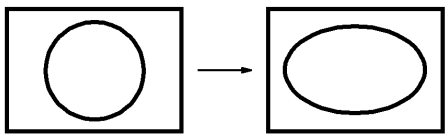
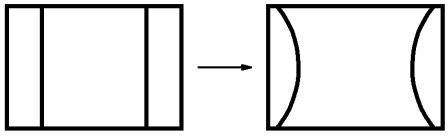
### BLOCK DIAGRAM

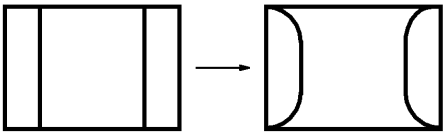
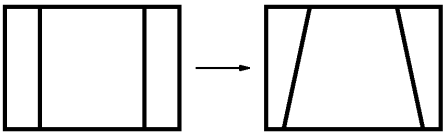
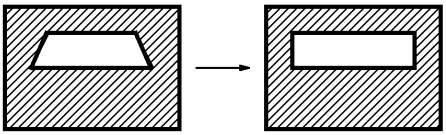
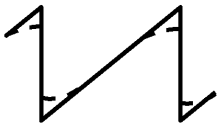
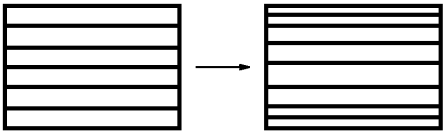


**TERMINAL INTERFACE**



**OUTLINE OF FUNCTIONS**

| FUNCTION | SUB ADDRESS | BIT | OUTPUT WAVEFORM | PICTURE |
|---|---|---|---|---|
| Picture Height Adjustment | 0010 | 6 |  |  |
| Vertical Linearity correction | 0011 | 5 |  |  Lower expansion upper contraction |
| Vertical "S" Correction ($X^3$) | 0100 | 5 |  |  |
| Vertical Shift | 0101 | 3 |  |  Upper and lower contraction |
| Vertical Compensation | 0110 | — |  |  Correction of distortion caused by high-voltage fluctuations |
| Picture Width Adjustment | 0111 | 6 |  |  |
| E-W Parabola | 1000 | 6 | |  |

| FUNCTION | SUB ADDRESS | BIT | OUTPUT WAVEFORM | PICTURE |
|---|---|---|---|---|
| E-W Corner Correction | 1001 | 4 | |  Corner maximum |
| Trapezium Distortion Compensation | 1010 | 6 | |  |
| Horizontal Compensation | 1011 | — | |  Correction of distortion caused by high-voltage fluctuations |
| Vertical $\int$ Correction ($X^5$) | 1110 | 4 |  |  Upper and lower contraction |

## I²C BUS CONTROL FUNCTIONS

| FUNCTION | SUB ADDRESS | DATA | PRESET | RANGE |
|---|---|---|---|---|
| Picture Height | 00000010 | ×-×-7bit | 01000000 | −48~48% |
| V-linearity | 00000011 | ×-×-×-5bit | 00010000 | −13~13% |
| V-S Correction | 00000100 | ×-×-×-5bit | 00000000 | 0~22% |
| V-shift | 00000101 | ×-×-×-AGC-3bit-× | 00001000 | −800~800mV |
| V-compensation | 00000110 | ×-×-×-×-4bit | 00000000 | 0~9% |
| Picture Width | 00000111 | ×-×-6bit | 00100000 | 1.6~7.3V |
| E-W Parabola | 00001000 | ×-×-6bit | 00100000 | 0~5.6V |
| E-W Corner | 00001001 | ×-×-×-×-4bit | 00000000 | 0~3.2V |
| Trapezium | 00001010 | ×-×-6bit | 00100000 | 0~1.2V |
| H-compensation | 00001011 | ×-×-×-×-4bit | 00000000 | 0~9% |
| V-∫ Correction | 00001100 | ×-×-×-×-4bit | 00000000 | 0~4% |

(Note 1) Vertical Height is controlled by Sub Address 02 (H), so no external control is required.

(Note 2) AGC bit determines vertical AGC responce speed.
0 : High speed for Channel / Mode change
1 : Low speed (1 / 5 × High speed). for Normal reception / Text Mode.

(Note 3) All registers are cleared into the preset value under the condition of $V_{CC} \leqq 3V$.

## I²C BUS CONTROL FORMAT OUTLINE

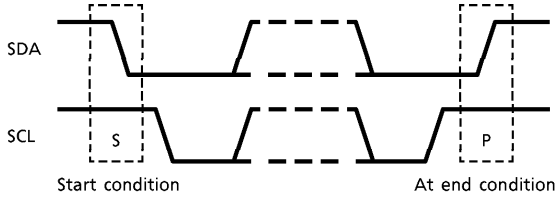
Bus controlled format of TA8859CP is based on I²C Bus Control format of PHILIPS.

Data transmission format

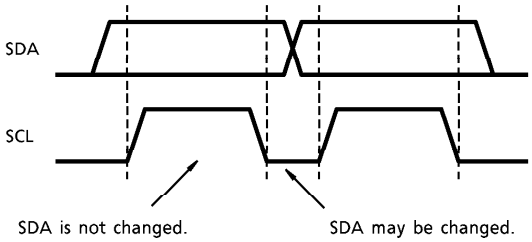
MSB 7bit MSB 8bit MSB 8bit

S : Start Condition
P : Stop Condition
A : Response Confirmation

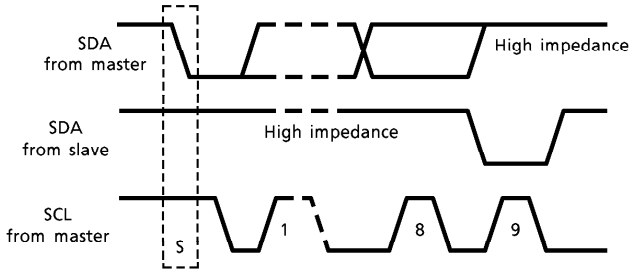
(1) Start condition, at end condition




(2) Bit transmission



(3) Verification response




(4) Slave address

| A6 | A5 | A4 | A3 | A2 | A1 | A0 | R / $\overline{W}$ |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

Purchase of TOSHIBA $I^2C$ components conveys a license under the Philips $I^2C$ Patent Rights to use these components in an $I^2C$ system, provided that the system conforms to the $I^2C$ Standard Specification as defined by Philips.

**MAXIMUM RATINGS** (Ta = 25°C, $V_{CC}$ = 12V)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 15 | V |
| Power Dissipation | $P_{D\ max}$ | 1.4 (Note) | W |
| Input Signal Voltage | $e_{in}$ | 5 | $V_{p-p}$ |
| Operating Temperature | $T_{opr}$ | − 20~65 | °C |
| Storage Temperature | $T_{stg}$ | − 55~150 | °C |

(Note) Derated above Ta = 25°C, in the proportion of 11.2mW / °C.

**RECOMMENDED POWER SUPPLY VOLTAGE**

| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 10.8 | 12 | 13.2 | V |

**ELECTRICAL CHARACTERISTICS**

(Unless otherwise specified, $V_{CC}$ = 12V, Ta = 25°C)

Power supply current

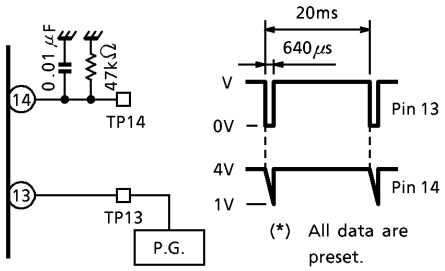
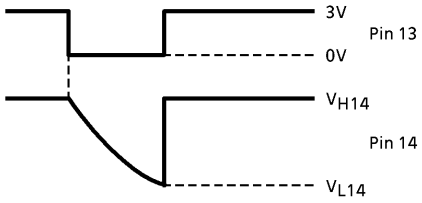
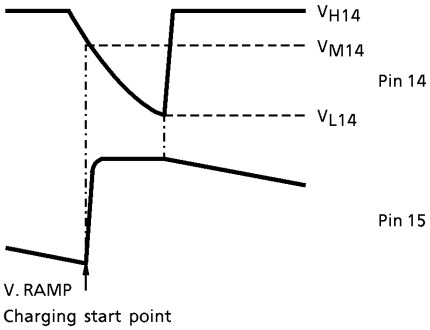
| CHARACTERISTIC | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| Supply Current | $I_{CC}$ | 20 | 30 | 45 | mA |

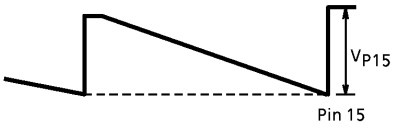
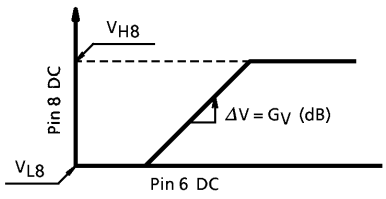
Terminal voltage

| No. | ITEM | SYMBOL | MIN. | TYP. | MAX. | UNIT | NOTE |
|---|---|---|---|---|---|---|---|
| 1 | ΔEHT | $V_1$ | 7.5 | 8.0 | 8.5 | V | — |
| 2 | EW-OUT | $V_2$ | 5.8 | 6.1 | 6.4 | | — |
| 3 | $V_{CC}$ (12V) | $V_3$ | — | 12.0 | — | | Terminal = $V_{CC}$ (12.0V) |
| 4 | EW-FB | $V_4$ | — | 12.0 | — | | Terminal = $V_{CC}$ (12.0V) |
| 5 | GND | $V_5$ | — | 0.0 | — | | Terminal = GND |
| 6 | V.FB | $V_6$ | 2.0 | 2.4 | 2.8 | | — |
| 7 | N.C. | $V_7$ | — | 0.0 | — | | Terminal = GND |
| 8 | V.OUT | $V_8$ | 2.8 | 3.5 | 4.3 | | — |
| 9 | SDA | $V_9$ | 4.8 | 5.1 | 5.4 | | — |
| 10 | SCL | $V_{10}$ | 4.8 | 5.1 | 5.4 | | — |
| 11 | N.C. | $V_{11}$ | — | 0.0 | — | | Terminal = GND |
| 12 | $I^2L$ GND | $V_{12}$ | — | 0.0 | — | | Terminal = GND |
| 13 | V.IN | $V_{13}$ | — | 0.0 | — | | Terminal = GND |
| 14 | T.C. | $V_{14}$ | 3.7 | 4.0 | 4.3 | | — |
| 15 | V.RAMP | $V_{15}$ | 3.7 | 4.0 | 4.3 | | — |
| 16 | V.AGC | $V_{16}$ | — | 0.0 | — | | Terminal = GND |

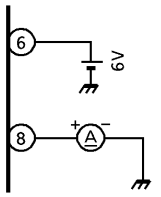
(Note) Data : Preset

AC CHARACTERISTICS

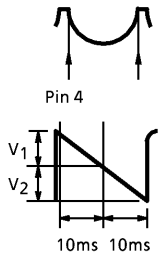
| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vertical Trigger Input Threshold Voltage | $V_{TH13}$ | 02 | 03 | 04 | 05 | • Change the height of trigger pulse given to TP13, and measure the time pulse height when a timing pulse is output.   (*) All data are preset. | 0.7 | 1.0 | 1.4 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |
| 2 | Clamp Voltage At TP14 | $V_{H14}$ | 02 | 03 | 04 | 05 | • Give the trigger pulse to TP13. (Pulse width : 640μs, cycle : 20ms, Low level : 0V, High level : 3V). • Observe the wave shape at TP14.   | 3.7 | 4.0 | 4.2 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |
| 3 | Threshold Voltage I At TP14 | $V_{M14}$ | 02 | 03 | 04 | 05 | • Same as No.2. • Observe the wave shape at TP14 and TP15.   | 2.8 | 3.0 | 3.2 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |

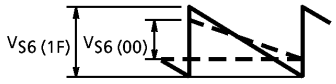
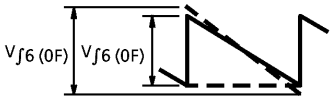
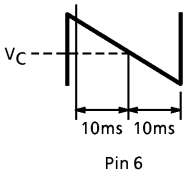
| No. | ITEM | SYM-BOL | BUS CONTROL DATA | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| 4 | Threshold Voltage II At TP14 | $V_{L14}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 20 00 00<br>0A 0B 0C<br>20 00 00 | • Same as No.3. | 0.9 | 1.0 | 1.1 | V |
| 5 | Vertical Ramp Pulse Amplitude | $V_{P15}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 20 00 00<br>0A 0B 0C<br>20 00 00 | • Measure the vertical ramp pulse amplitude at TP15.<br>  <br>(*) All data are preset. | 1.9 | 2.0 | 2.1 | $V_{p-p}$ |
| 6 | Vertical Amplifier Gain | $G_V$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 20 00 00<br>0A 0B 0C<br>20 00 00 | • Give no pulse to TP13.<br>• Connect an external power supply to TP6.<br>• Measure the voltage of TP8 when the voltage of TP6 is changed from 0V to 6V.<br>  | 22 | 26 | 30 | dB |

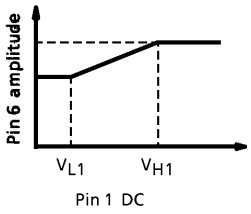
| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Vertical Amplifier Max. Output Voltage | $V_{H8}$ | 02 | 03 | 04 | 05 | • Same as No.6.<br>(*) All data are preset. | 2.9 | 3.6 | 4.5 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |
| 8 | Vertical Amplifier Min. Output Voltage | $V_{L8}$ | 02 | 03 | 04 | 05 | • Same as No.6. | 0 | 0 | 0.3 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | 00 | | | | | |
| 9 | Vertical Amplifier Max. Output Current | $I_{max8}$ | 02 | 03 | 04 | 05 | • Same as No.6.<br>• Measure the current between TP8 and GND when the voltage of TP6 is 6V. | 20 | 40 | — | mA |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |



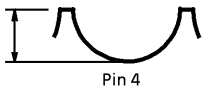
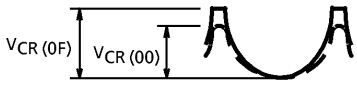
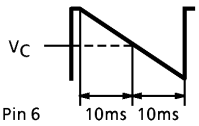

(*) All data are preset.

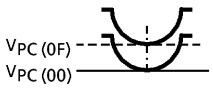
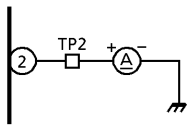
| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Vertical Saw Wave Amplitude | $V_{P6}$ | 02 | 03 | 04 | 05 | • Same as No.2.<br>• Measure the amplitude of saw wave at TP6.<br>(*) All data are preset. | 1.7 | 1.9 | 2.2 | $V_{p-p}$ |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |
| 11 | Vertical Amplitude Variable Range | $V_{PH}$ | 02 | 03 | 04 | 05 | • Same as No.10.<br>• Measure the amplitude $V_{P6\,(00)}$ at TP6 when the data of sub address (02) is turned to (00).<br>• Measure the amplitude $V_{P6\,(3F)}$ at TP6 when the data of sub address (02) is turned to (00).<br>$V_{PH} = \pm \frac{V_{P6\,(3F)} - V_{P6\,(00)}}{V_{P6\,(3F)} + V_{P6\,(00)}} \times 100\%$ | +45<br>−45 | +48<br>−48 | +51<br>−51 | % |
| | | | 7F ↓ 00 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |
| 12 | Vertical Linearlity Max. Correction | $V_\ell$ | 02 | 03 | 04 | 05 | • Turn it to (3F) the data of sub address (08) and adjust the data of sub address (0A) for making the shape of parabolic wave of TP4 symmetrical.<br>• Turn it to (00) the data of sub address (08).<br>• Measure $V_{1\,(10)}$ and $V_{2\,(10)}$ at TP6 when the data of sub address (03) is (10).<br>• Similarly measure $V_{1\,(00)}$, $V_{2\,(CC)}$, $V_{1\,(1F)}$ and $V_{2\,(1F)}$. (00) and (1F) are the data of sub address (08).<br>  <br>$V_\ell = \pm 100 \times \frac{V_{1\,(00)} - V_{1\,(1F)} + V_{2\,(1F)} - V_{2\,(00)}}{2 \times (V_{1\,(10)} + V_{2\,(10)})}$ | +10.0<br>−10.0 | +12.5<br>−12.5 | +15.0<br>−15.0 | % |
| | | | 40 | 1F 10 00 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |

| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | Max. Of Vertical S Correction | $V_S$ | 02 | 03 | 04 | 05 | • Same as No.12.<br>• Measure the amplitude $V_{S6\,(00)}$ at TP6 when the data of sub address (04) is (00).<br>• Measure the amplitude $V_{S6\,(1F)}$ at TP6 when the data of sub address (04) is (00).<br>  <br><br>$V_S = \frac{V_{S6\,(00)} - V_{S6\,(1F)}}{V_{S6\,(00)}} \times 100\ (\%)$ | 20 | 24 | 28 | % |
| | | | 40 | 10 | 1F<br>00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |
| 14 | Max. Of Vertical ∫ Correction | $V_\int$ | 02 | 03 | 04 | 05 | • Same as No.13.<br>• Measure the amplitude $V_{\int 6\,(00)}$ at TP6 when the data of sub address (0C) is (00).<br>• Measure the amplitude $V_{\int 6\,(0F)}$ at TP6 when the data of sub address (0C) is (0F).<br>  <br><br>$V_\int = \frac{V_{\int 6\,(0F)} - V_{\int 6\,(00)}}{V_{\int 6\,(00)}} \times 100\ (\%)$ | 3 | — | — | % |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 0F<br>00 | | | | | | |
| 15 | Vertical NF Center Voltage | $V_C$ | 02 | 03 | 04 | 05 | • Same as No.12.<br>• Observe the wave shape at TP6.<br>  <br><br>Pin 6 | 3.8 | 4.1 | 4.4 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |

| No. | ITEM | SYM-BOL | BUS CONTROL DATA | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| 16 | Vertical NF DC Variation | $V_{DC}$ | 02 03 04 05<br>40 10 00 0F / 00<br>06 07 08 09<br>00 20 00 00<br>0A 0B 0C<br>Adjust 00 00 | • Same as No.15.<br>• Measure the vertical NF center voltage $V_{C\,(00)}$ when the data of sub address (05) is (00).<br>• Measure the vertical NF center voltage $V_{C\,(0F)}$ when the data of sub address (05) is (00).<br>$V_{DC} = \pm \frac{V_{C\,(0F)} - V_{C\,(00)}}{2}$ (V) | ±720 | ±800 | ±880 | mV |
| 17 | Vertical Amplitude EHT Correction | $V_{EHT}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>0F / 00 20 00 00<br>0A 0B 0C<br>Adjust 00 00 | • Same as No.12.<br>• Connect an external power supply to TP1 and turn its voltage to 0V.<br>• Measure the amplitude $V_{EHT\,(00)}$ at TP6 when the data of sub address (06) is (00).<br>• Measure the amplitude $V_{EHT\,(0F)}$ at TP6 when the data of sub address (06) is (0F).<br>$V_{EHT} = \frac{V_{EHT\,(00)} - V_{EHT\,(0F)}}{V_{EHT\,(00)}} \times 100$ (%) | 8 | 9 | 10 | V |
| 18 | EHT Input Dynamic Range I | $V_{H1}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>0F 20 00 00<br>0A 0B 0C<br>Adjust 00 00 | • Same as No.17.<br>• Change it from 1V to 7V the voltage of the external power supply connected with TP1.<br>• At this time, measure the variation of amplitude at TP6.<br>  | 6.0 | 6.5 | 7.0 | V |

| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | EHT Input Dynamic Range II | $V_{L1}$ | 02 | 03 | 04 | 05 | • Same as No.18. | 1.3 | 1.8 | 2.3 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 0F | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |
| 20 | E-W NF Max. DC (Picture Width) | — | 02 | 03 | 04 | 05 | • Same as No.12.<br>• Measure the voltage at TP4. | 6.8 | 7.4 | 8.0 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 00 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |
| 21 | E-W NF Min. DC (Picture Width) | $V_{L4}$ | 02 | 03 | 04 | 05 | • Measure the voltage at TP4. | 1.4 | 1.5 | 1.7 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 3F | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |

| No. | ITEM | SYM-BOL | BUS CONTROL DATA | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|
| 22 | E-W NF Max. Parabolic Correction (Parabola) | $V_{PB}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 3F 3F 00<br>0A 0B 0C<br>Adjust 00 00 | • Give 7V to TP1.<br>• Measure the parabolic amplitude at TP4.<br>  <br> | 4.8 | 5.6 | 6.6 | $V_{p-p}$ |
| 23 | E-W NF Corner Correction (Corner) | $V_{CR}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 3F 3F 0F / 00<br>0A 0B 0C<br>Adjust 00 00 | • Give 7V to TP1.<br>• Measure the parabolic amplitude at TP4.<br>• Measure the amplitude $V_{CR\,(00)}$ when the data of sub address (09) is (00).<br>• Measure the amplitude $V_{CR\,(0F)}$ when data of sub address (09) is (0F).<br>  <br><br>$V_{CR} = V_{CR\,(00)} - V_{CR\,(0F)}$ | 2.5 | 3.2 | 4.1 | $V_{p-p}$ |
| 24 | Parabolic Symmetry Correction | $V_{TR}$ | 02 03 04 05<br>40 10 00 08<br>06 07 08 09<br>00 20 00 00<br>0A 0B 0C<br>3F / 00 00 00 | • Same as No.10.<br>• Measure the vertical scan center voltage $V_{C\,(00)}$ at TP6 when the data of sub address (0A) is (00).<br>• Measure the vertical scan center voltage $V_{C\,(3F)}$ at TP6 when the data of sub address (0A) is (3F).<br>$V_{TR} = \pm \frac{V_{C\,(00)} - V_{C\,(3F)}}{2 \times V_{P6}} \times 100\ (\%)$<br>  <br> | ±3 | ±4.5 | ±6 | % |

| No. | ITEM | SYM-BOL | BUS CONTROL DATA | | | | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | E-W Parabolic EHT Correction | $V_{EH1}$ | 02 | 03 | 04 | 05 | • Same as No.22.<br>• Connect an external power supply to TP1.<br>• Measure the parabolic amplitude $V_{EH\,(7)}$ at TP4 when the voltage of TP1 is 7V.<br>• Measure the amplitude $V_{EH\,(1)}$ when the voltage of TP1 is 1V.<br>$V_{EH1} = \frac{V_{EH\,(7)} - V_{EH\,(1)}}{V_{EH\,(7)}} \times 100\ (\%)$ | — | 4.7 | — | % |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 00 | 3F | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 | 00 | | | | | | |
| 26 | E-W DC EHT Correction | $V_{EH2}$ | 02 | 03 | 04 | 05 | • Give 1V to TP1.<br>• Measure the parabolic phase center voltage $V_{PC\,(00)}$ at TP4 when the data of sub address (0B) is (00).<br>• Measure the voltage $V_{PC\,(0F)}$ when the data is (0F).<br>  <br><br>$V_{EH2} = V_{PC\,(0F)} - V_{PC\,(00)}$ | 1.0 | 1.4 | 1.8 | V |
| | | | 40 | 10 | 00 | 08 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 3F | 3F | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | Adjust | 00 ↕ 0F | 00 | | | | | | |
| 27 | Max. Of E-W Amplifier Output Current | $I_{max2}$ | 02 | 03 | 04 | 05 | • Connect an ampere meter between TP2 and GND.<br>• Measure the current.<br>  <br> | 0.14 | 0.2 | 0.27 | mA |
| | | | 40 | 10 | 00 | 10 | | | | | |
| | | | 06 | 07 | 08 | 09 | | | | | |
| | | | 00 | 20 | 00 | 00 | | | | | |
| | | | 0A | 0B | 0C | | | | | | |
| | | | 20 | 00 | 00 | | | | | | |

(Note) Concerning fall time

When used in actual applications, if the fall time for input pulse becomes greater output may not be generated in some cases, so please take care.

| CHARACTERISTIC | TEST METHOD | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|
| Trigger Input Fall Time | As below | — | 1.0 | 7.6 | μs |

While monitoring the input waveform of Pin 13 oscilloscope, please measure fall time from 10% to 90%.

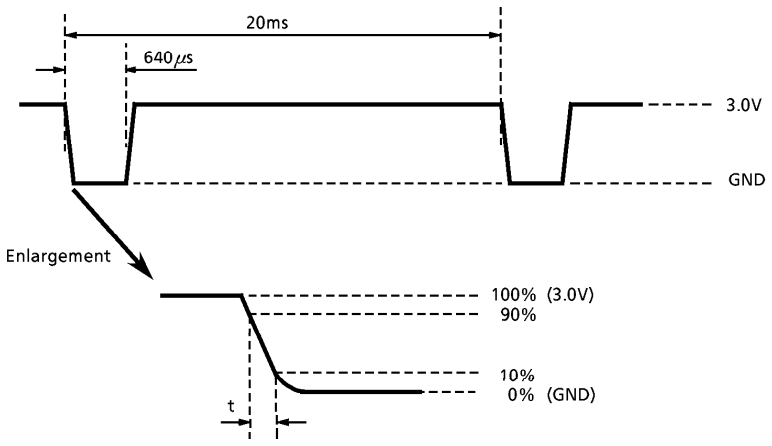
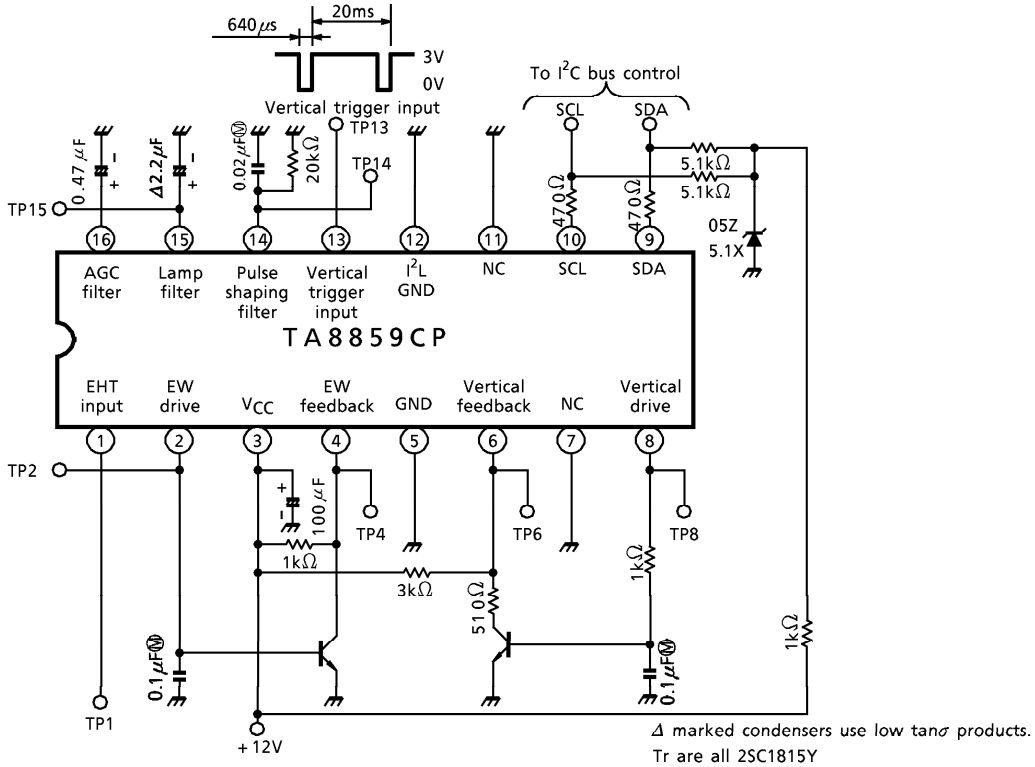


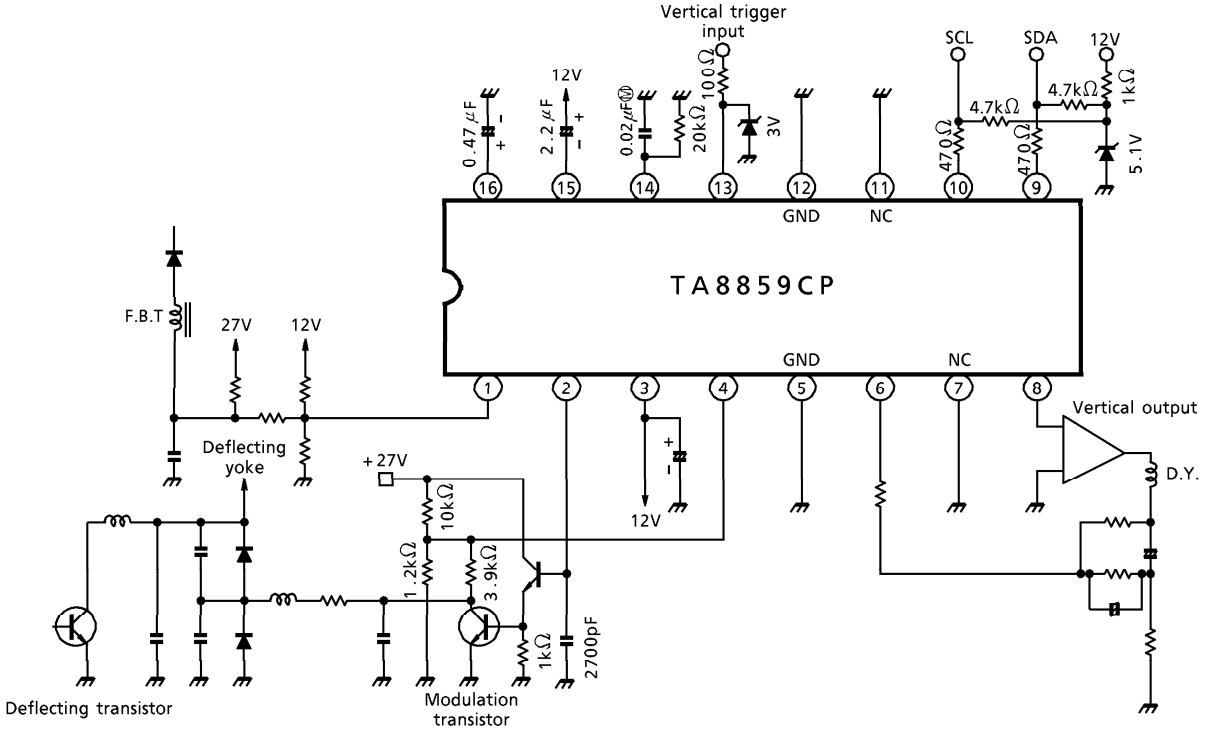

**Fig.**

## TEST CIRCUIT



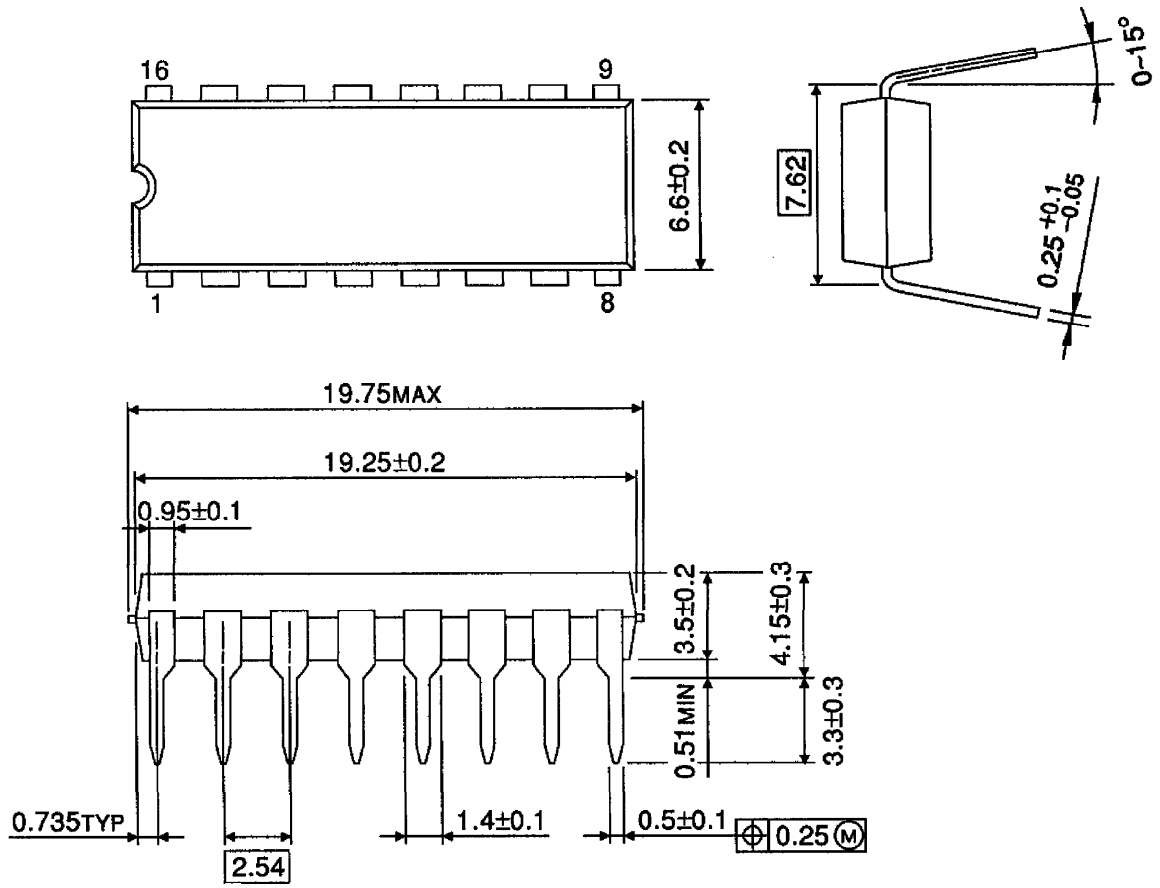

Δ marked condensers use low tanσ products.
Tr are all 2SC1815Y

## APPLICATION CIRCUIT



**PACKAGE DIMENSIONS**

DIP16-P-300-2.54B UNIT : mm




Weight : 1.11g (Typ.)

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000707EBA

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