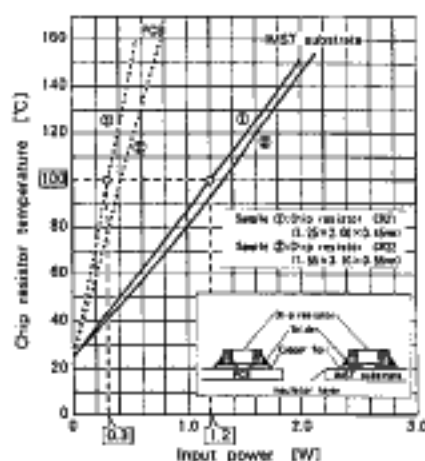


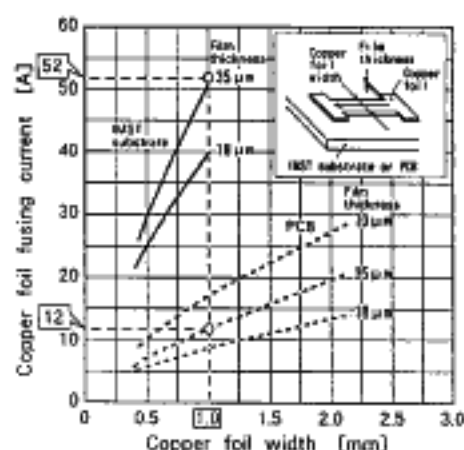
# ■ Features of the IMST® Hybrid ICs

## ■ Excellent heat dissipation

- One of the most influential factors determining reliability of electronic devices is "heat". The IMST substrate is most suitable for the field of power electronics, dissipating heat efficiently.



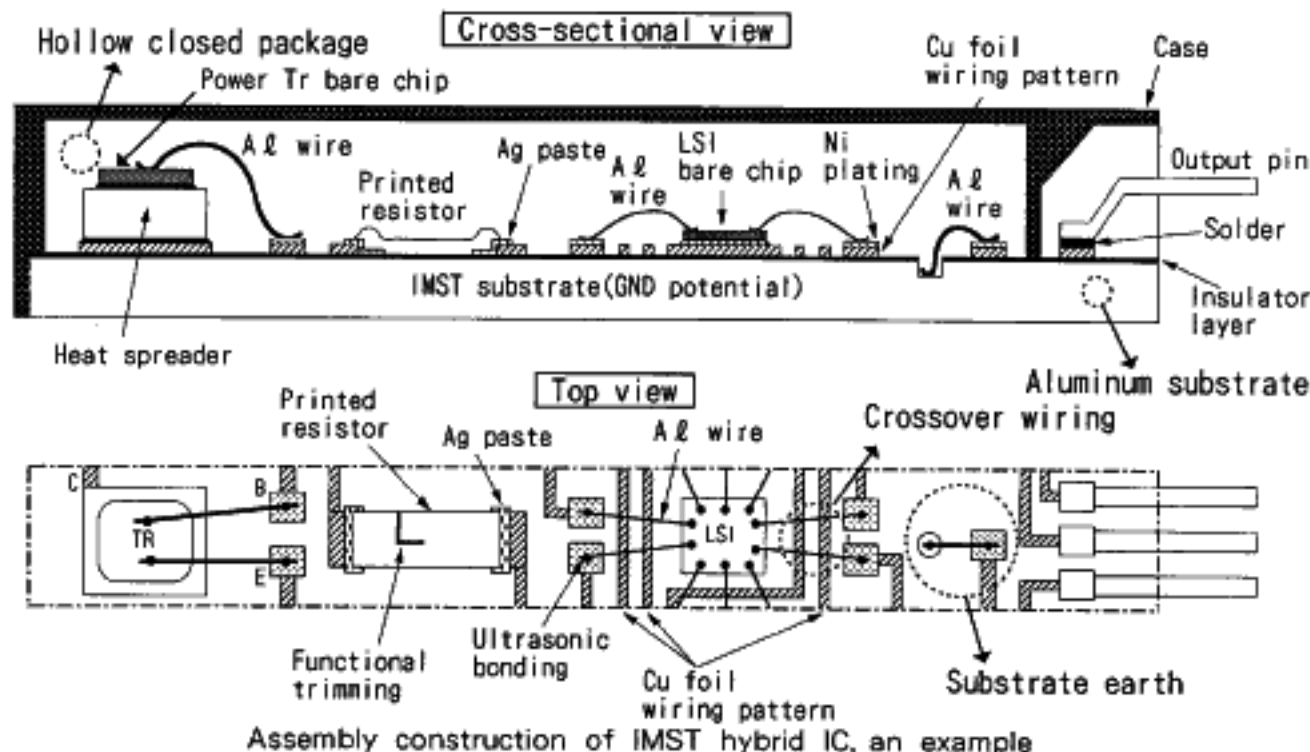
Comparison of chip resistor temperature rises  
【IMST®'s values are about 1/4 of PCB's.】



Comparison of copper foil fusing currents  
【IMST®'s values are about 4 times of PCB's.】

## ■ High reliability

- Wiring is applied by mounting semiconductor bare chips directly and bonding aluminum wires. This reduces number of soldering points assuring high reliability.



## ■ Excellent electromagnetic shielding

- Excellent electromagnetic shielding can be attained by putting the entire substrate on the ground potential because the base substrate is made of aluminum. This eliminates noise errors in the digitalized electronic devices.

# ■ Features of STK Series Audio Power ICs

## ■ Ample lineup

- STK series lineup is ample and standard based whereas the current hybrid IC market tends to customization.

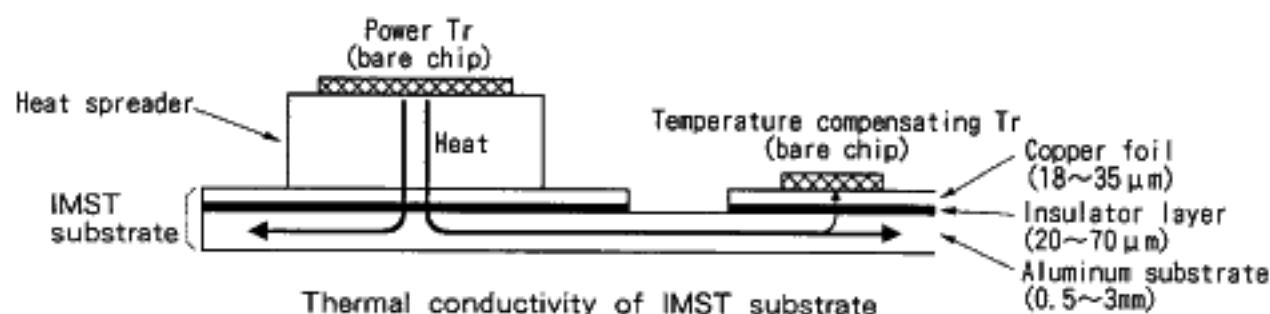
|                            |                   |
|----------------------------|-------------------|
| Output power (per channel) | : 5 to 200W       |
| Total harmonic distortion  | : 10 to 0.005 %   |
| Number of channels         | : 1 to 3ch.       |
| Load impedance             | : 1 to 8 $\Omega$ |

## ■ Pin compatibility

- The design takes pin compatibility of the hybrid IC output pin important so that a same PCB can be used for various set grades such as output capacity and distortion factor.

## ■ Excellent thermal stability

- The IMST substrate of excellent heat dissipation naturally assures excellent thermal conductivity. Temperature of the output transistor can be almost the same as the temperature compensating transistor, preventing thermal runaway.



## ■ Decreasing adjustment processes

- Adjustments of the neutral voltage of the power output stage and the quiescent current are done by functional trimming inside the hybrid IC.  
This eliminates adjustment processes saving on the production procedure.

## ■ Reducing the term for design

- The audio output stage remains analog however digitalization technology may advance. Design of the analog power output stage, which is considered requiring the designer's experience and skill, can be simplified by employing hybrid ICs.  
This reduces the term for design and saves on the design procedure.

## ■ Decreasing number of parts

- The product of STK series decreases the total number of parts required for a unit, allowing to reduce its size, certain assembly manpower, simplify material control, improve serviceability and reduce cost.

## ■ No smoke for fire

- Since the product of STK series is designed so to emit no smoke nor fire in any abnormality, it facilitates to obtain safety approvals.

# Line - up of Audio power Amplifier ICs

|                |               |     |               |       |         |      |         |      |         |  |
|----------------|---------------|-----|---------------|-------|---------|------|---------|------|---------|--|
| Power Supply   | +Power Supply |     | ±Power Supply |       |         |      |         |      |         |  |
| Channel Number | 1ch           | 2ch | 1ch           | 2ch   |         |      |         |      |         |  |
| Load           | 1~8 Ω         |     | 4~8 Ω         |       |         |      |         |      |         |  |
| THD            | 10%           | 1%  | 0.4%          | 0.08% | 0.008%  | 0.4% | 0.08%   | 0.4% | 0.08%   |  |
| Pin-compatible | ←-----→       |     | ←-----→       |       | ←-----→ |      | ←-----→ |      | ←-----→ |  |

| Series name | STK4065<br>(Page 7) | STK4017<br>(Page 7) | STK4332<br>(Page 7) | STK4024 II<br>(Page 8) | STK4024 V<br>(Page 8) | STK4028 X<br>(Page 8) | STK4036 XI<br>(Page 8) | STK4144MK2<br>(Page 8) | STK4144MK5<br>(Page 9) | STK4145MK2<br>(Page 9) | STK4145MK5<br>(Page 9) |
|-------------|---------------------|---------------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|-------------|---------------------|---------------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|

| Output Power/channel | STK4065<br>(Page 7) | STK4017<br>(Page 7) | STK4332<br>(Page 7) | STK4024 II<br>(Page 8) | STK4024 V<br>(Page 8) | STK4028 X<br>(Page 8) | STK4036 XI<br>(Page 8) | STK4144MK2<br>(Page 8) | STK4144MK5<br>(Page 9) | STK4145MK2<br>(Page 9) | STK4145MK5<br>(Page 9) |
|----------------------|---------------------|---------------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| 5W                   |                     |                     | STK4332             |                        |                       |                       |                        |                        |                        |                        |                        |
| 7W                   |                     | STK4017             | STK4362             |                        |                       |                       |                        |                        |                        |                        |                        |
| 10W                  |                     | STK4019             | STK4362             |                        |                       |                       |                        |                        |                        |                        |                        |
| 12W                  |                     |                     | STK4372             |                        |                       |                       |                        |                        |                        |                        |                        |
| 15W                  |                     | STK4021             | STK4392             |                        |                       |                       |                        |                        |                        |                        |                        |
| 20W                  |                     | STK4023             | STK4412             | STK4024 II             | STK4024 V             |                       |                        |                        |                        |                        |                        |
| 25W                  |                     | STK4025             | STK4432             | STK4026 II             | STK4026 V             |                       |                        | STK4144MK2             | STK4144MK5             | STK4145MK2             | STK4145MK5             |
| 30W                  |                     |                     |                     | STK4028 II             | STK4028 V             | STK4028 X             |                        | STK4154MK2             | STK4154MK5             | ※ STK4155MK2           | ※ STK4155MK5           |
| 35W                  | STK4065             |                     |                     | STK4030 II             | STK4030 V             |                       |                        | STK4164MK2             | STK4164MK5             | STK4165MK2             | ※ STK4165MK5           |
| 40W                  |                     |                     |                     | STK4032 II             |                       | STK4032 X             |                        | STK4174MK2             | ※ STK4174MK5           | ※ STK4175MK2           | ※ STK4175MK5           |
| 45W                  |                     |                     |                     |                        |                       | STK4034 X             |                        | STK4184MK2             | STK4184MK5             | STK4185MK2             | ※ STK4185MK5           |
| 50W                  |                     |                     |                     | STK4036 II             | STK4036 V             | STK4036 X             | STK4036 XI             | ※ STK4194MK2           | STK4194MK5             | ※ STK4195MK2           | STK4195MK5             |
| 60W                  | STK4067             |                     |                     | STK4038 II             |                       |                       | STK4038 XI             | STK4204MK2             | STK4204MK5             | STK4205MK2             | ※ STK4205MK5           |
| 70W                  |                     |                     |                     | STK4040 II             | STK4040 V             | STK4040 X             | STK4040 XI             | STK4214MK2             | ※ STK4214MK5           | STK4215MK2             | ※ STK4215MK5           |
| 80W                  |                     |                     |                     | STK4042 II             | STK4042 V             |                       | STK4042 XI             | ※ STK4224MK2           | STK4224MK5             | STK4225MK2             | ※ STK4225MK5           |
| 100W                 |                     |                     |                     | STK4044 II             | STK4044 V             | STK4044 X             | STK4044 XI             | STK4234MK2             | STK4234MK5             | STK4235MK2             | ※ STK4235MK5           |
| 120W                 |                     |                     |                     |                        | STK4046 V             |                       | STK4046 XI             |                        |                        |                        |                        |
| 150W                 |                     |                     |                     | STK4048 II             | STK4048 V             |                       | STK4048 XI             |                        |                        |                        |                        |
| 200W                 |                     |                     |                     | STK4050 II             | STK4050 V             |                       |                        |                        |                        |                        |                        |

※: Under development

Car-use  
BTL

Pure -  
com.

Built - in  
Self recovery type  
Protection circuit

Built - in  
Latch type  
Protection circuit

|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        |             |                   |
|-------------------------|-------------------------|-------------------------|-------------------------|--|-------------------------------|-------------------------|-------------------------|-------------------------|------------------------|------------------------|------------------------|-------------|-------------------|
| ±Power Supply           |                         | ±Power Supply×2         |                         | ±Power Supply                                  |                               | Power Supply            |                         |                         |                        |                        |                        |             |                   |
| 2ch                     |                         | 3ch                     |                         | 2ch  |                               | Channel Number          |                         |                         |                        |                        |                        |             |                   |
| 3~6 Ω                   |                         | 4~8 Ω                   |                         | 2~8 Ω  |                               | Load                    |                         |                         |                        |                        |                        |             |                   |
| 0.4 %                   | 0.08 %                  | 0.4 %                   | 0.08 %                  | 0.4 %  | 0.08 %                        | 0.4 %                   | 0.08 %                  | 0.02 %                  | 0.05 %                 | 0.005 %                | THD                    |             |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        | Pin-compatible         |             |                   |
| STK401-010<br>(Page 10) | STK401-210<br>(Page 10) | STK400-010<br>(Page 11) | STK400-210<br>(Page 11) | STK400-450<br>(Page 11)                        | STK400-650<br>(Page 11)       | STK4102 II<br>(Page 12) | STK4201 II<br>(Page 12) | STK4121 V<br>(Page 12)  | STK4141 X<br>(Page 12) | STK4196 X<br>(Page 12) | STK350-000<br>(Page 7) | Series name |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        |             |                   |
|                         |                         |                         |                         |  |                               | STK4102 II              |                         |                         |                        |                        |                        | 5W          |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        | 7W          |                   |
| ※ STK401-010            | ※ STK401-210            | ※ STK400-010            | ※ STK400-210            |  |                               | STK4112 II              |                         |                         |                        |                        |                        | 10W         |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        | 12W         |                   |
| STK401-020              | STK401-220              | STK400-020              | ※ STK400-220            |  |                               | STK4122 II              |                         | STK4121 V               |                        |                        |                        | 15W         |                   |
| STK401-030              | ※ STK401-230            | ※ STK400-030            | ※ STK400-230            |  |                               | STK4132 II              |                         | STK4131 V               |                        |                        |                        | 20W         |                   |
| STK401-040              | ※ STK401-240            | ※ STK400-040            | ※ STK400-240            |  |                               | STK4142 II              |                         | STK4141 V               | STK4141 X              |                        |                        | 25W         |                   |
| STK401-050              | ※ STK401-250            | ※ STK400-050            | ※ STK400-250            | ※ STK400-450<br>(L, Rch. 15W)                  | ※ STK400-650<br>(L, Rch. 15W) | STK4152 II              |                         | STK4151 V               | STK4151 X              |                        |                        | 30W         |                   |
| STK401-060              | ※ STK401-260            | ※ STK400-060            | ※ STK400-260            | ※ STK400-460<br>(L, Rch. 15W)                  | ※ STK400-660<br>(L, Rch. 15W) | STK4162 II              |                         | STK4161 V               |                        |                        |                        | 35W         |                   |
| STK401-070              | ※ STK401-270            | ※ STK400-070            | ※ STK400-270            | ※ STK400-470<br>(L, Rch. 20W)                  | ※ STK400-670<br>(L, Rch. 20W) | STK4172 II              |                         | STK4171 V               | STK4171 X              |                        | STK350-000             | 40W         |                   |
| STK401-080              | ※ STK401-280            | ※ STK400-080            | ※ STK400-280            | ※ STK400-480<br>(L, Rch. 20W)                  | ※ STK400-680<br>(L, Rch. 20W) | STK4182 II              |                         | STK4181 V               |                        |                        | STK350-000             | 45W         |                   |
| STK401-090              | ※ STK401-290            | ※ STK400-090            | ※ STK400-290            | ※ STK400-490<br>(L, Rch. 25W)                  | ※ STK400-690<br>(L, Rch. 25W) | STK4192 II              |                         | STK4191 V               | STK4191 X              | STK4196 X              | STK350-000             | 50W         |                   |
| STK401-100              | ※ STK401-300            | ※ STK400-100            | ※ STK400-300            | ※ STK400-500<br>(L, Rch. 30W)                  | ※ STK400-700<br>(L, Rch. 30W) |                         | STK4201 II              | STK4201 V               | STK4201 X              |                        | STK350-010             | 60W         |                   |
| STK401-110              | ※ STK401-310            | ※ STK400-110            | ※ STK400-310            | ※ STK400-510<br>(L, Rch. 35W)                  | ※ STK400-710<br>(L, Rch. 35W) |                         | STK4211 II              | STK4211 V               | STK4211 X              | STK4216 X              | STK350-010             | 70W         |                   |
| STK401-120              | ※ STK401-320            |                         |                         | ※ STK400-520<br>(L, Rch. 40W)                  | ※ STK400-720<br>(L, Rch. 40W) |                         | STK4221 II              | STK4221 V               |                        |                        | STK350-020             | 80W         |                   |
| STK401-130              | ※ STK401-330            |                         |                         | ※ STK400-530<br>(L, Rch. 50W)                  | ※ STK400-730<br>(L, Rch. 50W) |                         | STK4231 II              | STK4231 V               |                        |                        | STK350-030             | 100W        |                   |
| STK401-140              | ※ STK401-340            |                         |                         |  |                               |                         | STK4241 II              | STK4241 V               |                        |                        | STK350-040             | 120W        |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        | STK350-050             | 150W        |                   |
|                         |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        | 200W        |                   |
| ※: Under development    |                         |                         |                         |  |                               |                         |                         |                         |                        |                        |                        |             |                   |
| 3ch. Same output power  |                         |                         |                         | 3ch. Different output power (2ch + Center ch.) |                               |                         |                         | Built-in Muting circuit |                        |                        |                        | 2 Ω Load    | Voltage amplifier |

# Main Characteristics

## STK4065 series

| Type Number | Output power $P_o$ [W] |                   |                   | THD[%] | $V_{cc\ max}$ [V] | $V_{cc}$ [V] | Case outline                | Features                                   |
|-------------|------------------------|-------------------|-------------------|--------|-------------------|--------------|-----------------------------|--|
|             | $R_L = 4\ \Omega$      | $R_L = 2\ \Omega$ | $R_L = 1\ \Omega$ |        |                   |              |                             |  |
| STK4065     | 23                     | 35                | —                 | 10     | 18                | 13.2         | 46.5×25.5×8.5<br>(No. 4081) | ◆Car-stereo use<br>◆BTL<br>◆Pin-compatible |
| STK4067     | 23                     | 40                | 60                |        |                   |              | 64×31×8.5<br>(No. 4131)     |  |

## STK4017 series

| Type Number | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]  |          | Case outline                 | Features  |
|-------------|-----------------------|--------|------------|----------|----------|------------------------------|---|
|             |                       |        |            | RL = 8 Ω | RL = 4 Ω |                              |   |
| STK4017     | 6.5                   | 1.0    | 45         | 26.4     | 26.4     | 46.5×25.5×8.5<br>(No. 4021B) | ◆1ch./1package<br>◆+power supply<br>◆Pin-compatible |
| STK4019     | 10.0                  |        | 54         | 32.0     | 29.0     |                              |   |
| STK4021     | 15.0                  |        | 64         | 38.0     | 34.0     |                              |   |
| STK4023     | 20.0                  |        | 73         | 44.0     | 38.0     | 59.2×31×8.5<br>(No. 4070)    |   |
| STK4025     | 25.0                  |        | 80         | 48.0     | 44.0     |                              |   |

## STK4332 series

| Type Number | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V] |         | Case outline                 | Features  |
|-------------|-----------------------|--------|------------|---------|---------|------------------------------|---|
|             |                       |        |            | RL = 8Ω | RL = 4Ω |                              |   |
| STK4332     | 5 + 5                 | 1.0    | 32         | 23      | 21      | 59.2×25.5×8.5<br>(No. 4032A) | ◆2ch./1package<br>◆+power supply<br>◆Pin-compatible |
| STK4352     | 7 + 7                 |        | 39         | 27      | 25      |                              |   |
| STK4362     | 10 + 10               |        | 50         | 33      | 28      | 59.2×31×8.5<br>(No. 4033)    |   |
| STK4372     | 12 + 12               |        | 54         | 35      | 31      |                              |   |
| STK4392     | 15 + 15               |        | 56         | 39      | 36      |                              |   |
| STK4412     | 20 + 20               |        | 63         | 44      | 40      |                              |   |
| STK4432     | 25 + 25               |        | 70         | 49      | 44      |                              |   |

## STK350 - 000 series

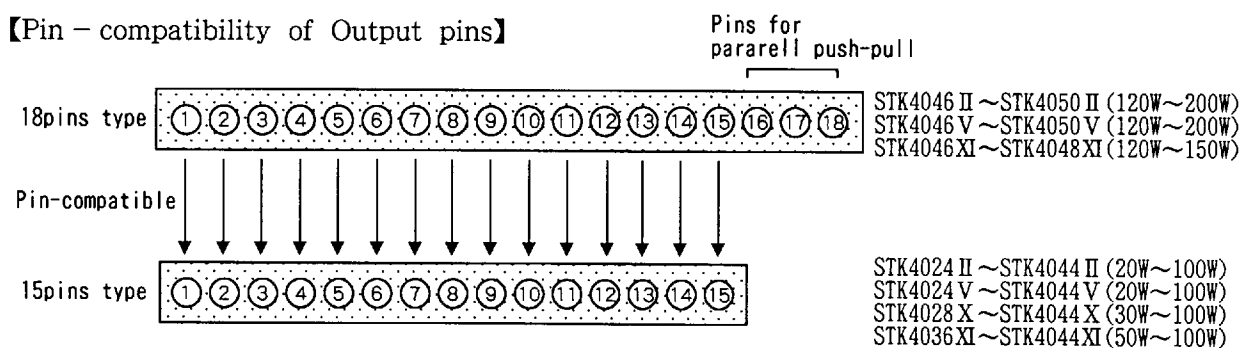
| Type Number  | Output power $P_o$ [W] | THD[%] | $V_{cc\ max}$ [V] | $V_{cc}$ [V]      | Case outline          | Features                              |
|--------------|------------------------|--------|-------------------|-------------------|-----------------------|---------------------------------------|
|              |                        |        |                   | $R_L = 8\ \Omega$ |                       |                                       |
| STK350 - 000 | 40 ~ 60                | 0.005  | ± 55              | ± 36              | 53×22×9<br>(No. 4147) | ◆Voltage amplifier<br>◆Pin-compatible |
| STK350 - 010 | 60 ~ 80                |        | ± 59              | ± 41              |                       |                                       |
| STK350 - 020 | 80 ~ 90                |        | ± 65              | ± 47              |                       |                                       |
| STK350 - 030 | 90 ~ 100               |        | ± 75              | ± 50              |                       |                                       |
| STK350 - 040 | 100 ~ 120              |        | ± 80              | ± 55              |                       |                                       |
| STK350 - 050 | 120 ~ 150              |        | ± 90              | ± 60              |                       |                                       |

※:Under development

■ STK4024 II series / STK4024 V series / STK4028 X series / STK4036 XI series

| Type Number | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]              |                      | Case outline              | Features   |  |
|-------------|-----------------------|--------|------------|----------------------|----------------------|---------------------------|--|--|
|             |                       |        |            | R <sub>L</sub> = 8 Ω | R <sub>L</sub> = 4 Ω |                           |  |  |
| STK4024 II  | 20                    | 0.4    | ± 34.5     | ± 23.0               | ± 20.0               | 59.2×31×8.5<br>(No. 4033) | ◆1ch./1package<br>◆±Power supply<br>◆Pin-compatible with<br>STK4036XI series   |  |
| STK4026 II  | 25                    |        | ± 38.0     | ± 26.0               | ± 22.0               |                           |  |  |
| STK4028 II  | 30                    |        | ± 42.0     | ± 27.5               | ± 25.0               |                           |  |  |
| STK4030 II  | 35                    |        | ± 45.0     | ± 30.0               | ± 27.0               |                           |  |  |
| STK4032 II  | 40                    |        | ± 48.0     | ± 32.0               | ± 29.0               |                           |  |  |
| STK4036 II  | 50                    |        | ± 52.0     | ± 35.0               | ± 31.0               |                           |  |  |
| STK4038 II  | 60                    |        | ± 57.0     | ± 38.0               | ± 32.5               | 64×36.5×8.5<br>(No. 4075) |  |  |
| STK4040 II  | 70                    |        | ± 60.0     | ± 42.0               | —                    |                           |  |  |
| STK4042 II  | 80                    |        | ± 65.0     | ± 45.0               | —                    |                           |  |  |
| STK4044 II  | 100                   |        | ± 73.0     | ± 51.0               | —                    | 78×44×9<br>(No. 4051A)    |  |  |
| STK4048 II  | 150                   | ± 86.0 | ± 59.0     | —                    |                      |                           |  |  |
| STK4050 II  | 200                   | ± 95.0 | ± 66.0     | —                    |                      |                           |  |  |
| STK4024 V   | 20                    | 0.08   | ± 37.0     | ± 24.5               | ± 21.5               | 64×31×8.5<br>(No. 4062)   |  |  |
| STK4026 V   | 25                    |        | ± 39.0     | ± 26.0               | ± 22.0               |                           |  |  |
| STK4028 V   | 30                    |        | ± 42.0     | ± 27.5               | ± 25.0               |                           |  |  |
| STK4030 V   | 35                    |        | ± 46.0     | ± 30.0               | ± 27.0               |                           |  |  |
| STK4036 V   | 50                    |        | ± 52.0     | ± 35.0               | ± 31.0               |                           |  |  |
| STK4040 V   | 70                    |        | ± 62.0     | ± 42.0               | ± 36.0               |                           |  |  |
| STK4042 V   | 80                    |        | ± 65.0     | ± 45.0               | —                    | 64×36.5×8.5<br>(No. 4075) |  |  |
| STK4044 V   | 100                   |        | ± 73.0     | ± 51.0               | —                    |                           |  |  |
| STK4046 V   | 120                   |        | ± 80.0     | ± 55.0               | —                    | 78×44×9<br>(No. 4051A)    |  |  |
| STK4048 V   | 150                   |        | ± 87.0     | ± 60.0               | —                    |                           |  |  |
| STK4050 V   | 200                   | ± 95.0 | ± 66.0     | —                    |                      |                           |  |  |
| STK4028 X   | 30                    | 0.008  | ± 42.0     | ± 29.0               | ± 26.0               | 64×31×8.5<br>(No. 4062)   |  |  |
| STK4032 X   | 40                    |        | ± 49.0     | ± 33.5               | ± 30.0               |                           |  |  |
| STK4034 X   | 45                    |        | ± 50.0     | ± 35.0               | ± 31.0               |                           |  |  |
| STK4036 X   | 50                    |        | ± 52.0     | ± 36.5               | ± 31.5               |                           |  |  |
| STK4040 X   | 70                    |        | ± 62.0     | ± 42.5               | ± 36.0               |                           |  |  |
| STK4044 X   | 100                   | 0.018  | ± 74.0     | ± 51.0               | —                    | 64×36.5×8.5<br>(No. 4075) |  |  |
| STK4036 XI  | 50                    | 0.008  | ± 53.5     | ± 37.0               | —                    | 64×36.5×8.5<br>(No. 4075) | ◆1ch./1package<br>◆±Power supply<br>◆Pure-complimentary<br>◆Pin-compatible with<br>STK4024 II series,<br>STK4024 V series,<br>STK4028 X series |  |
| STK4038 XI  | 60                    |        | ± 58.0     | ± 40.0               | —                    |                           |  |  |
| STK4040 XI  | 70                    |        | ± 63.0     | ± 43.5               | —                    |                           |  |  |
| STK4042 XI  | 80                    |        | ± 67.0     | ± 46.5               | —                    |                           |  |  |
| STK4044 XI  | 100                   |        | ± 74.0     | ± 51.0               | —                    |                           |  |  |
| STK4046 XI  | 120                   |        | ± 80.0     | ± 55.0               | —                    | 78×44×9<br>(No. 4151A)    |  |  |
| STK4048 XI  | 150                   |        | ± 87.0     | ± 60.0               | —                    |                           |  |  |

【Pin - compatibility of Output pins】



# Main Characteristics

■ STK4144MK2 series / STK4144MK5 series / STK4145MK2 series / STK4145MK5 series

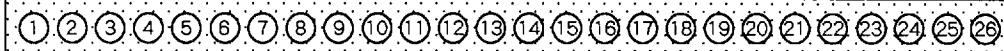
| Type Number  | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]  |          | Equivalent<br>circuit    | Case outline             | Features  |
|--------------|-----------------------|--------|------------|----------|----------|--------------------------|--------------------------|---|
|              |                       |        |            | RL = 8 Ω | RL = 4 Ω |                          |                          |   |
| STK4144MK2   | 25 + 25               | 0.4    | ± 40.0     | ± 27.0   | ± 22.0   | Fig.1                    | 78×44×9<br>(No. 4086A)   | ◆Built-in<br>Self recovery type<br>Protection circuit<br>◆2ch. /1package<br>◆±Power supply<br>◆Pin-compatible with<br>STK4145MK2 series,<br>STK4145MK5 series |
| STK4154MK2   | 30 + 30               |        | ± 42.0     | ± 28.0   | ± 25.0   |                          |                          |   |
| STK4164MK2   | 35 + 35               |        | ± 45.0     | ± 30.5   | ± 26.5   |                          |                          |   |
| STK4174MK2   | 40 + 40               |        | ± 48.0     | ± 32.0   | ± 28.0   |                          |                          |   |
| STK4184MK2   | 45 + 45               |        | ± 50.0     | ± 33.5   | ± 30.0   | Fig.2                    | 90×53×8.5<br>(No. 4110A) |   |
| ※ STK4194MK2 | 50 + 50               |        | ± 52.5     | ± 35.0   | ± 32.0   |                          |                          |   |
| STK4204MK2   | 60 + 60               |        | ± 55.0     | ± 38.5   | —        |                          |                          |   |
| STK4214MK2   | 70 + 70               |        | ± 60.0     | ± 42.0   | —        |                          |                          |   |
| ※ STK4224MK2 | 80 + 80               | ± 65.0 | ± 45.0     | —        | Fig.3    | 78×44×9<br>(No. 4086A)   |                          |   |
| STK4234MK2   | 100 + 100             | ± 75.0 | ± 51.0     | —        |          |                          |                          |   |
| STK4144MK5   | 25 + 25               | 0.08   | ± 40.5     | ± 27.0   |          |                          | ± 24.0                   |   |
| STK4154MK5   | 30 + 30               |        | ± 42.0     | ± 28.5   |          |                          | ± 25.0                   |   |
| STK4164MK5   | 35 + 35               |        | ± 46.0     | ± 30.5   | ± 26.5   |                          |                          |   |
| ※ STK4174MK5 | 40 + 40               |        | ± 49.0     | ± 32.5   | ± 28.0   |                          |                          |   |
| STK4184MK5   | 45 + 45               |        | ± 51.0     | ± 34.0   | ± 30.0   | Fig.4                    | 90×53×8.5<br>(No. 4110A) |   |
| STK4194MK5   | 50 + 50               |        | ± 53.0     | ± 35.5   | ± 32.0   |                          |                          |   |
| STK4204MK5   | 60 + 60               |        | ± 57.0     | ± 39.0   | —        |                          |                          |   |
| ※ STK4214MK5 | 70 + 70               |        | ± 62.0     | ± 43.0   | —        |                          |                          |   |
| STK4224MK5   | 80 + 80               | ± 65.0 | ± 45.0     | —        | Fig.5    | 78×44×9<br>(No. 4086A)   |                          |   |
| STK4234MK5   | 100 + 100             | ± 75.0 | ± 51.0     | —        |          |                          |                          |   |
| STK4145MK2   | 25 + 25               | 0.4    | ± 40.0     | ± 27.0   |          |                          | ± 22.0                   |   |
| ※ STK4155MK2 | 30 + 30               |        | ± 42.0     | ± 28.0   |          |                          | ± 25.0                   |   |
| STK4165MK2   | 35 + 35               |        | ± 45.0     | ± 30.5   | ± 26.5   |                          |                          |   |
| ※ STK4175MK2 | 40 + 40               |        | ± 48.0     | ± 32.0   | ± 28.0   |                          |                          |   |
| STK4185MK2   | 45 + 45               |        | ± 50.0     | ± 33.5   | ± 30.0   | Fig.6                    | 90×53×8.5<br>(No. 4110A) |   |
| ※ STK4195MK2 | 50 + 50               |        | ± 52.5     | ± 35.0   | ± 32.0   |                          |                          |   |
| STK4205MK2   | 60 + 60               |        | ± 55.0     | ± 38.5   | —        |                          |                          |   |
| STK4215MK2   | 70 + 70               |        | ± 60.0     | ± 42.0   | —        |                          |                          |   |
| STK4225MK2   | 80 + 80               | ± 65.0 | ± 45.0     | —        | Fig.7    | 78×44×9<br>(No. 4086A)   |                          |   |
| STK4235MK2   | 100 + 100             | ± 75.0 | ± 51.0     | —        |          |                          |                          |   |
| STK4145MK5   | 25 + 25               | 0.08   | ± 40.5     | ± 27.0   |          |                          | ± 24.0                   |   |
| ※ STK4155MK5 | 30 + 30               |        | ± 42.0     | ± 28.5   |          |                          | ± 25.0                   |   |
| ※ STK4165MK5 | 35 + 35               |        | ± 46.0     | ± 30.5   | ± 26.5   |                          |                          |   |
| ※ STK4175MK5 | 40 + 40               |        | ± 49.0     | ± 32.5   | ± 28.0   |                          |                          |   |
| ※ STK4185MK5 | 45 + 45               |        | ± 51.0     | ± 34.0   | ± 30.0   | Fig.8                    | 90×53×8.5<br>(No. 4110A) |   |
| STK4195MK5   | 50 + 50               |        | ± 53.0     | ± 35.5   | ± 32.0   |                          |                          |   |
| ※ STK4205MK5 | 60 + 60               |        | ± 57.0     | ± 39.0   | —        |                          |                          |   |
| ※ STK4215MK5 | 70 + 70               |        | ± 62.0     | ± 43.0   | —        |                          |                          |   |
| ※ STK4225MK5 | 80 + 80               | ± 65.0 | ± 45.0     | —        | Fig.8    | 90×53×8.5<br>(No. 4110A) |                          |   |
| ※ STK4235MK5 | 100 + 100             | ± 75.0 | ± 51.0     | —        |          |                          |                          |   |

※: Under development

## 【Pin - compatibility of Output pins】

Pins for phase correction

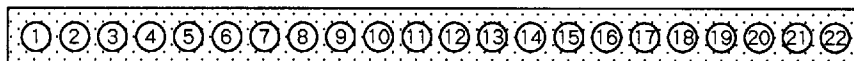
26pins type



STK4204~STK4234  
STK4205~STK4235  
(60W/ch~100W/ch)

Pin-compatible

22pins type



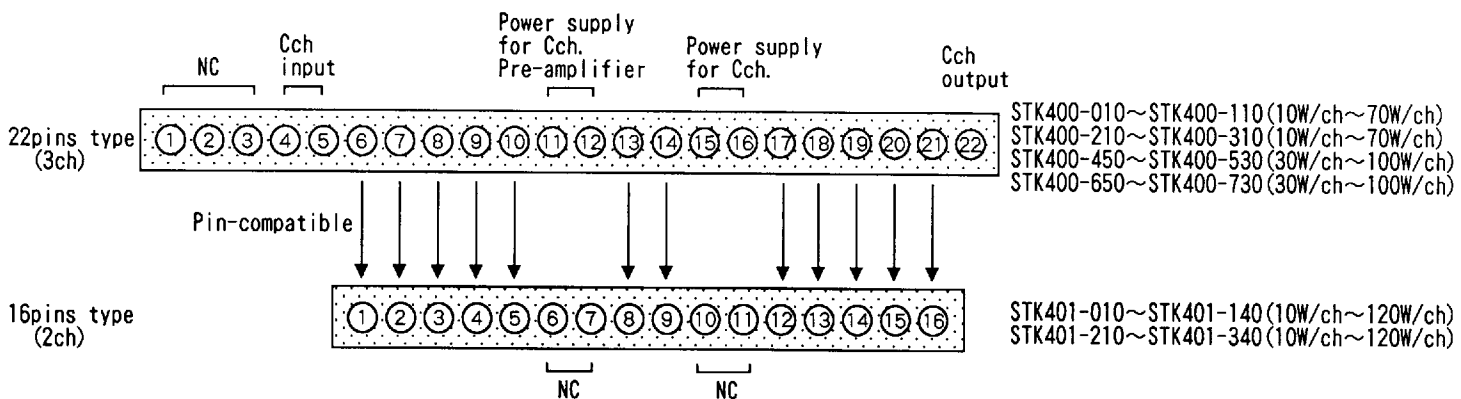
STK4144~STK4194  
STK4145~STK4195  
(25W/ch~50W/ch)

# ■ STK401 - 010 series / STK401 - 210 series

| Type Number    | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]              |                      | Equivalent<br>circuit | Case outline              | Features  |        |
|----------------|-----------------------|--------|------------|----------------------|----------------------|-----------------------|---------------------------|---|--------|
|                |                       |        |            | R <sub>L</sub> = 6 Ω | R <sub>L</sub> = 3 Ω |                       |                           |   |        |
| ※ STK401 - 010 | 10 + 10               | 0.4    | ± 26       | ± 17.0               | ± 14                 | Fig.9                 | 64×36.5×8.5<br>(No. 4134) | ◆R <sub>L</sub> =6/3Ω<br>◆2ch. /1package<br>◆±Power supply<br>◆Pin-compatible with<br>STK400-010 series,<br>STK400-210 series,<br>STK400-450 series,<br>STK400-650 series |        |
| STK401 - 020   | 15 + 15               |        | ± 29       | ± 20.0               | ± 16                 |                       |                           |   |        |
| STK401 - 030   | 20 + 20               |        | ± 34       | ± 23.0               | ± 19                 |                       |                           |   |        |
| STK401 - 040   | 25 + 25               |        | ± 36       | ± 25.0               | ± 21                 |                       |                           |   |        |
| STK401 - 050   | 30 + 30               |        | ± 39       | ± 26.0               | ± 22                 |                       |                           |   |        |
| STK401 - 060   | 35 + 35               |        | ± 41       | ± 28.0               | ± 23                 |                       |                           |   |        |
| STK401 - 070   | 40 + 40               |        | ± 44       | ± 30.0               | ± 24                 |                       |                           |   |        |
| STK401 - 080   | 45 + 45               |        | ± 45       | ± 31.0               | ± 25                 |                       |                           |   |        |
| STK401 - 090   | 50 + 50               |        | ± 47       | ± 32.0               | ± 26                 |                       |                           |   |        |
| STK401 - 100   | 60 + 60               |        | ± 51       | ± 35.0               | ± 27                 |                       |                           |   | Fig.10 |
| STK401 - 110   | 70 + 70               |        | ± 56       | ± 38.0               | —                    |                       |                           |   |        |
| STK401 - 120   | 80 + 80               |        | ± 61       | ± 42.0               | —                    | Fig.11                |                           |   |        |
| STK401 - 130   | 100 + 100             |        | ± 65       | ± 45.0               | —                    |                       |                           |   |        |
| STK401 - 140   | 120 + 120             |        | ± 74       | ± 51.0               | —                    |                       |                           |   |        |
| ※ STK401 - 210 | 10 + 10               | 0.08   | ± 26       | ± 17.5               | ± 14                 | Fig.12                | 64×36.5×8.5<br>(No. 4134) |   |        |
| STK401 - 220   | 15 + 15               |        | ± 29       | ± 20.0               | ± 16                 |                       |                           |   |        |
| ※ STK401 - 230 | 20 + 20               |        | ± 34       | ± 23.0               | ± 19                 |                       |                           |   |        |
| ※ STK401 - 240 | 25 + 25               |        | ± 36       | ± 25.0               | ± 21                 |                       |                           |   |        |
| ※ STK401 - 250 | 30 + 30               |        | ± 39       | ± 26.0               | ± 22                 |                       |                           |   |        |
| ※ STK401 - 260 | 35 + 35               |        | ± 41       | ± 28.0               | ± 23                 |                       |                           |   |        |
| ※ STK401 - 270 | 40 + 40               |        | ± 44       | ± 30.0               | ± 24                 |                       |                           |   |        |
| ※ STK401 - 280 | 45 + 45               |        | ± 45       | ± 31.0               | ± 25                 |                       |                           |   |        |
| ※ STK401 - 290 | 50 + 50               |        | ± 47       | ± 32.0               | ± 26                 |                       |                           |   |        |
| ※ STK401 - 300 | 60 + 60               |        | ± 51       | ± 35.0               | ± 27                 |                       |                           |   |        |
| ※ STK401 - 310 | 70 + 70               |        | ± 56       | ± 38.0               | —                    |                       |                           |   |        |
| ※ STK401 - 320 | 80 + 80               |        | ± 61       | ± 42.0               | —                    | Fig.14                | 78×44×9<br>(No. 4029)     |   |        |
| ※ STK401 - 330 | 100 + 100             |        | ± 65       | ± 45.0               | —                    |                       |                           |   |        |
| ※ STK401 - 340 | 120 + 120             |        | ± 74       | ± 51.0               | —                    |                       |                           |   |        |

※: Under development

## 【Pin - compatibility of Output pins】





# Main Characteristics

■ STK400 - 010 series / STK400 - 210 series / STK400 - 450 series / STK400 - 650 series

| Type Number    | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]  |          | Equivalent<br>circuit | Case outline            | Features  |
|----------------|-----------------------|--------|------------|----------|----------|-----------------------|-------------------------|---|
|                |                       |        |            | RL = 6 Ω | RL = 3 Ω |                       |                         |   |
| ※ STK400 - 010 | 10 + 10 + 10          | 0.4    | ± 26       | ± 17.0   | ± 14     | Fig.15                | 78×44×9<br>(No. 4086A)  | ◆RL=6/3Ω<br>◆3ch. /1package<br>(Same output power)<br>◆±Power supply<br>◆Pin-compatible with<br>STK401-010 series,<br>STK401-210 series,<br>STK400-450 series,<br>STK400-650 series |
| STK400 - 020   | 15 + 15 + 15          |        | ± 29       | ± 20.0   | ± 16     |                       |                         |   |
| ※ STK400 - 030 | 20 + 20 + 20          |        | ± 34       | ± 23.0   | ± 19     |                       |                         |   |
| STK400 - 040   | 25 + 25 + 25          |        | ± 36       | ± 25.0   | ± 21     |                       |                         |   |
| STK400 - 050   | 30 + 30 + 30          |        | ± 39       | ± 26.0   | ± 22     |                       |                         |   |
| ※ STK400 - 060 | 35 + 35 + 35          |        | ± 41       | ± 28.0   | ± 23     |                       |                         |   |
| ※ STK400 - 070 | 40 + 40 + 40          |        | ± 44       | ± 30.0   | ± 24     |                       |                         |   |
| ※ STK400 - 080 | 45 + 45 + 45          |        | ± 45       | ± 31.0   | ± 25     |                       |                         |   |
| STK400 - 090   | 50 + 50 + 50          |        | ± 47       | ± 32.0   | ± 26     |                       |                         |   |
| ※ STK400 - 100 | 60 + 60 + 60          |        | ± 51       | ± 35.0   | ± 27     | Fig.16                | 90×53×8.5<br>(No. 4145) |   |
| ※ STK400 - 110 | 70 + 70 + 70          |        | ± 56       | ± 38.0   | —        |                       |                         |   |
| ※ STK400 - 210 | 10 + 10 + 10          | 0.08   | ± 26       | ± 17.5   | ± 14     | Fig.17                | 78×44×9<br>(No. 4086A)  |   |
| ※ STK400 - 220 | 15 + 15 + 15          |        | ± 29       | ± 20.0   | ± 16     |                       |                         |   |
| ※ STK400 - 230 | 20 + 20 + 20          |        | ± 34       | ± 23.0   | ± 19     |                       |                         |   |
| ※ STK400 - 240 | 25 + 25 + 25          |        | ± 36       | ± 25.0   | ± 21     |                       |                         |   |
| ※ STK400 - 250 | 30 + 30 + 30          |        | ± 39       | ± 26.0   | ± 22     |                       |                         |   |
| ※ STK400 - 260 | 35 + 35 + 35          |        | ± 41       | ± 28.0   | ± 23     |                       |                         |   |
| ※ STK400 - 270 | 40 + 40 + 40          |        | ± 44       | ± 30.0   | ± 24     |                       |                         |   |
| ※ STK400 - 280 | 45 + 45 + 45          |        | ± 45       | ± 31.0   | ± 25     |                       |                         |   |
| STK400 - 290   | 50 + 50 + 50          |        | ± 47       | ± 32.0   | ± 26     |                       |                         |   |
| ※ STK400 - 300 | 60 + 60 + 60          |        | ± 51       | ± 35.0   | ± 27     | Fig.18                | 90×53×8.5<br>(No. 4145) |   |
| ※ STK400 - 310 | 70 + 70 + 70          |        | ± 56       | ± 38.0   | —        |                       |                         |   |
| ※ STK400 - 450 | 15 + 30 + 15          | 0.4    | ± 39       | ± 26.0   | ± 22.0   | Fig.15                | 78×44×9<br>(No. 4086A)  |   |
| ※ STK400 - 460 | 15 + 35 + 15          |        | ± 41       | ± 28.0   | ± 23.0   |                       |                         |   |
| ※ STK400 - 470 | 20 + 40 + 20          |        | ± 44       | ± 30.0   | ± 24.0   |                       |                         |   |
| ※ STK400 - 480 | 20 + 45 + 20          |        | ± 45       | ± 31.0   | ± 25.0   |                       |                         |   |
| ※ STK400 - 490 | 25 + 50 + 25          |        | ± 47       | ± 32.0   | ± 26.0   | Fig.19                | 90×53×8.5<br>(No. 4145) |   |
| ※ STK400 - 500 | 30 + 60 + 30          |        | ± 51       | ± 35.0   | ± 27.0   |                       |                         |   |
| ※ STK400 - 510 | 35 + 70 + 35          |        | ± 56       | ± 38.0   | —        | Fig.20                |                         |   |
| ※ STK400 - 520 | 40 + 80 + 40          |        | ± 61       | ± 42.0   | —        |                       |                         |   |
| ※ STK400 - 530 | 50 + 100 + 50         |        | ± 65       | ± 45.0   | —        |                       |                         |   |
| ※ STK400 - 650 | 15 + 30 + 15          | 0.08   | ± 39       | ± 26.0   | ± 22.0   | Fig.17                | 78×44×9<br>(No. 4086A)  |   |
| ※ STK400 - 660 | 15 + 35 + 15          |        | ± 41       | ± 28.0   | ± 23.0   |                       |                         |   |
| ※ STK400 - 670 | 20 + 40 + 20          |        | ± 44       | ± 30.0   | ± 24.0   |                       |                         |   |
| ※ STK400 - 680 | 20 + 45 + 20          |        | ± 45       | ± 31.0   | ± 25.0   |                       |                         |   |
| ※ STK400 - 690 | 25 + 50 + 25          |        | ± 47       | ± 32.0   | ± 26.0   | Fig.21                | 90×53×8.5<br>(No. 4145) |   |
| ※ STK400 - 700 | 30 + 60 + 30          |        | ± 51       | ± 35.0   | ± 27.0   |                       |                         |   |
| ※ STK400 - 710 | 35 + 70 + 35          |        | ± 56       | ± 38.0   | —        | Fig.22                |                         |   |
| ※ STK400 - 720 | 40 + 80 + 40          |        | ± 61       | ± 42.0   | —        |                       |                         |   |
| ※ STK400 - 730 | 50 + 100 + 50         |        | ± 65       | ± 45.0   | —        |                       |                         |   |

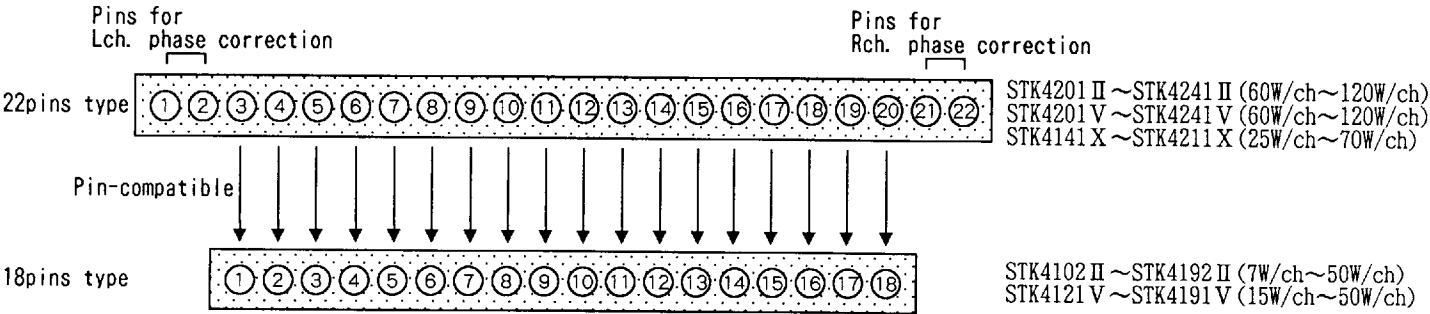
※:Under development

【Caution】 In case of 3 channel different output STK400 - 450, STK400 - 650 series, maximum power supply Vccmax and recommend power supply Vcc in the list shows numerical value of power supply of center channel. The numerical value of the power supply for L, R channel is same as 2 channel amplifier STK401 - 010 series which is same output.

■ STK4102 II series / STK4201 II series / STK4121 V series /  
STK4141 X series / STK4196 X series

| Type Number | Output power<br>Po[W] | THD[%] | Vcc max[V] | Vcc [V]  |          | Equivalent<br>circuit | Case outline              | Features   |
|-------------|-----------------------|--------|------------|----------|----------|-----------------------|---------------------------|--|
|             |                       |        |            | RL = 8 Ω | RL = 4 Ω |                       |                           |  |
| STK4102 II  | 6 + 6                 | 0.4    | ± 20.5     | ± 13.2   | ± 12.0   | Fig.23                | 64×31×8.5<br>(No. 4083)   | ◆2ch. /1package<br>◆±Power supply<br>◆Built-in<br>muting circuit<br>◆Pin-compatible<br>◆RL=2Ω<br>(STK4196X series) |
| STK4112 II  | 10 + 10               |        | ± 26.0     | ± 17.0   | ± 14.0   |                       |                           |  |
| STK4122 II  | 15 + 15               |        | ± 30.5     | ± 20.0   | ± 17.0   |                       |                           |  |
| STK4132 II  | 20 + 20               |        | ± 34.5     | ± 23.0   | ± 20.0   |                       |                           |  |
| STK4142 II  | 25 + 25               |        | ± 39.0     | ± 26.0   | ± 22.0   |                       |                           |  |
| STK4152 II  | 30 + 30               |        | ± 42.0     | ± 27.5   | ± 25.0   |                       |                           |  |
| STK4162 II  | 35 + 35               |        | ± 45.0     | ± 30.0   | ± 27.0   |                       |                           |  |
| STK4172 II  | 40 + 40               |        | ± 48.0     | ± 32.0   | ± 29.0   |                       |                           |  |
| STK4182 II  | 45 + 45               |        | ± 50.0     | ± 33.5   | ± 30.5   |                       |                           |  |
| STK4192 II  | 50 + 50               |        | ± 52.5     | ± 35.0   | ± 31.0   |                       |                           |  |
| STK4201 II  | 60 + 60               | 0.4    | ± 55.0     | ± 38.0   | —        | Fig.24                | 78×44×9<br>(No. 4086A)    |  |
| STK4211 II  | 70 + 70               |        | ± 60.0     | ± 42.0   | —        |                       |                           |  |
| STK4221 II  | 80 + 80               |        | ± 65.0     | ± 45.0   | —        |                       |                           |  |
| STK4231 II  | 100 + 100             |        | ± 75.0     | ± 51.0   | —        |                       |                           |  |
| STK4241 II  | 120 + 120             |        | ± 77.0     | ± 53.0   | —        |                       |                           |  |
| STK4121 V   | 15 + 15               | 0.08   | ± 32.0     | ± 21.5   | ± 19.0   | Fig.25                | 64×36.5×8.5<br>(No. 4040) |  |
| STK4131 V   | 20 + 20               |        | ± 36.0     | ± 24.5   | ± 22.0   |                       |                           |  |
| STK4141 V   | 25 + 25               |        | ± 40.5     | ± 27.0   | ± 24.0   |                       |                           |  |
| STK4151 V   | 30 + 30               |        | ± 42.0     | ± 28.0   | ± 25.0   |                       |                           |  |
| STK4161 V   | 35 + 35               |        | ± 46.0     | ± 30.5   | ± 26.5   |                       |                           |  |
| STK4171 V   | 40 + 40               |        | ± 49.0     | ± 32.5   | ± 28.0   |                       |                           |  |
| STK4181 V   | 45 + 45               |        | ± 51.0     | ± 34.0   | ± 30.0   |                       |                           |  |
| STK4191 V   | 50 + 50               |        | ± 53.0     | ± 35.5   | ± 32.0   |                       |                           |  |
| STK4201 V   | 60 + 60               |        | ± 57.0     | ± 39.0   | —        | Fig.26                | 78×44×9<br>(No. 4086A)    |  |
| STK4211 V   | 70 + 70               |        | ± 62.0     | ± 43.0   | —        |                       |                           |  |
| STK4221 V   | 80 + 80               |        | ± 65.0     | ± 45.0   | —        |                       |                           |  |
| STK4231 V   | 100 + 100             |        | ± 75.0     | ± 51.0   | —        |                       |                           |  |
| STK4241 V   | 120 + 120             |        | ± 78.0     | ± 54.0   | —        |                       |                           |  |
| STK4141 X   | 25 + 25               | 0.02   | ± 41.0     | ± 27.5   | ± 24.5   | Fig.27                | 105×32×8.5<br>(No. 4146)  |  |
| STK4151 X   | 30 + 30               |        | ± 42.5     | ± 29.0   | ± 25.5   |                       |                           |  |
| STK4171 X   | 40 + 40               |        | ± 49.5     | ± 33.0   | ± 28.5   |                       |                           |  |
| STK4191 X   | 50 + 50               |        | ± 53.5     | ± 36.0   | ± 32.5   |                       |                           |  |
| STK4201 X   | 60 + 60               |        | ± 57.5     | ± 39.5   | —        |                       |                           |  |
| STK4211 X   | 70 + 70               |        | ± 62.5     | ± 43.5   | —        |                       |                           |  |
| STK4196 X   | 50 + 50               | 0.05   | ± 53.5     | —        | ± 29.0   | Fig.28                |                           |  |
| STK4216 X   | 70 + 70               |        | ± 62.5     | —        | ± 34.0   |                       |                           |  |

【Pin – compatibility of Output pins】



# Equivalent Circuit

Figure 1

STK4144MK2 to STK4194MK2

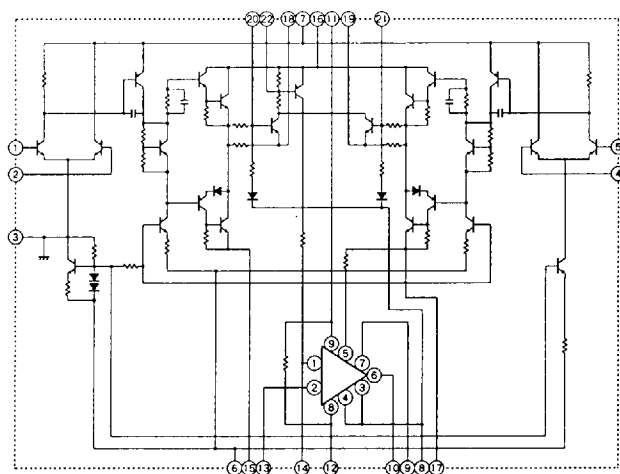


Figure 2

STK4204MK2 to STK4234MK2

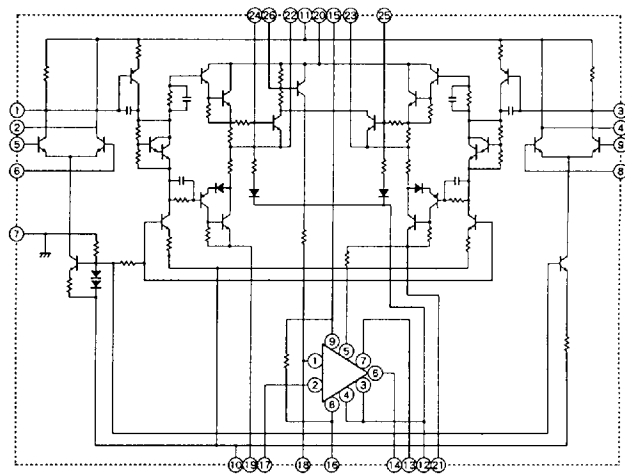


Figure 3

STK4144MK5 to STK4194MK5

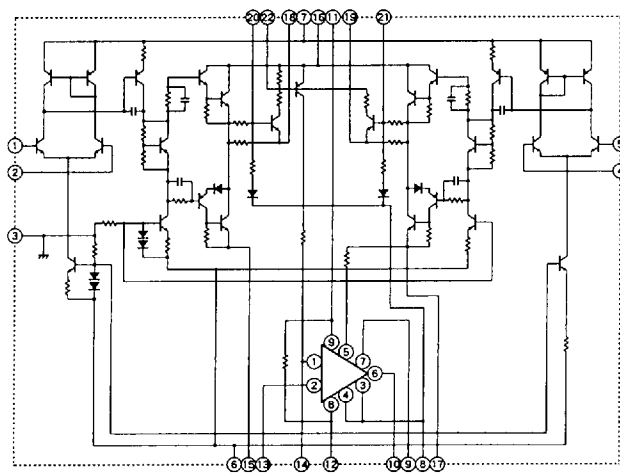


Figure 4

STK4204MK5 to STK4234MK5

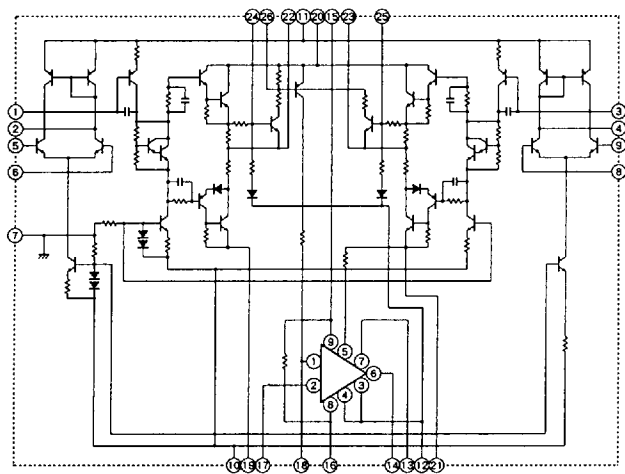


Figure 5

STK4145MK2 to STK4195MK2

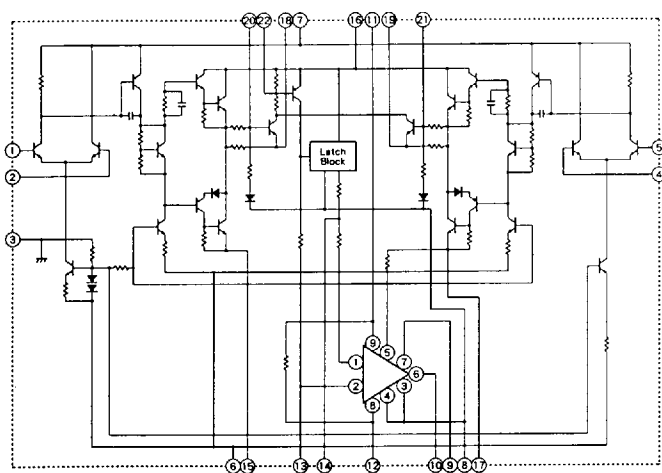
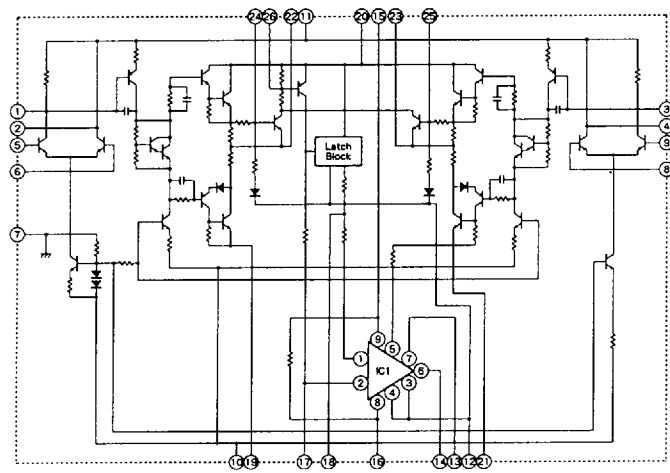
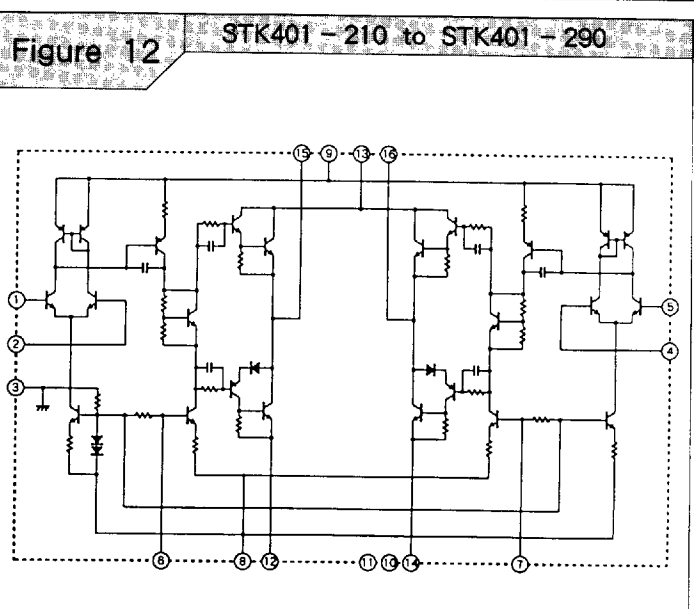
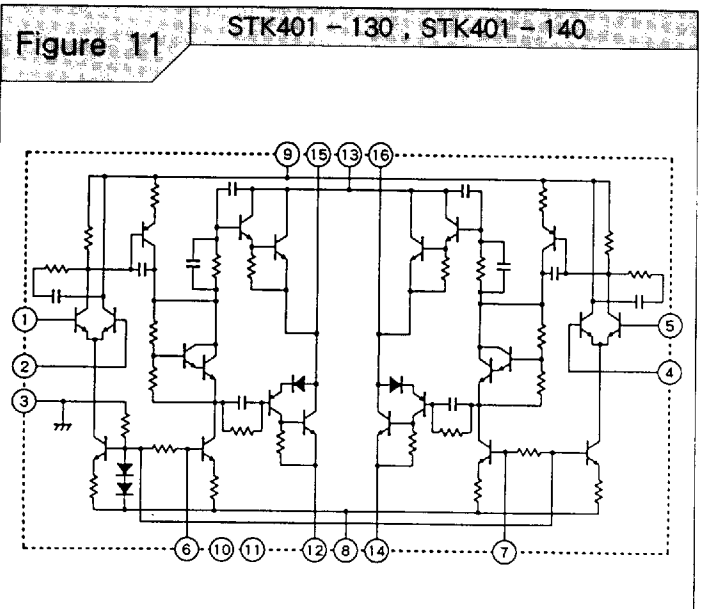
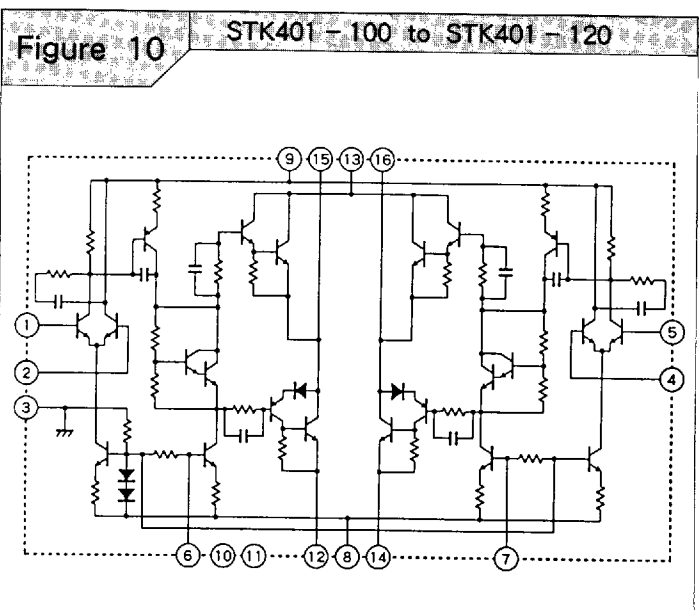
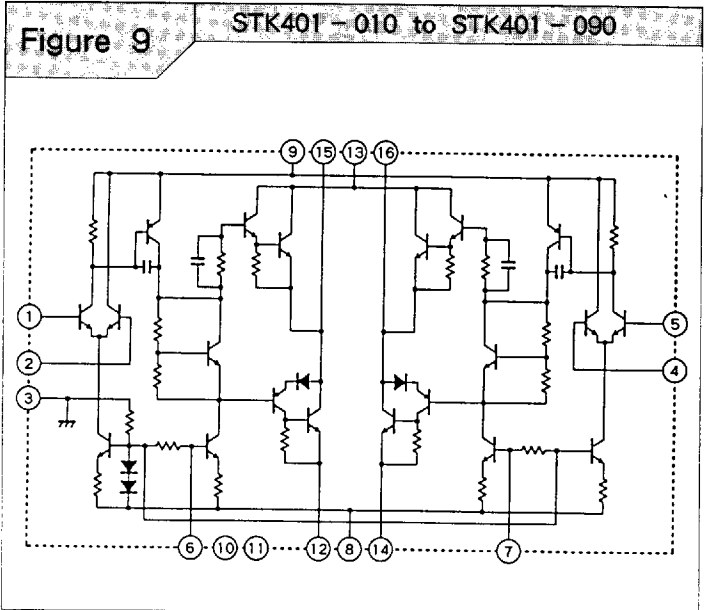
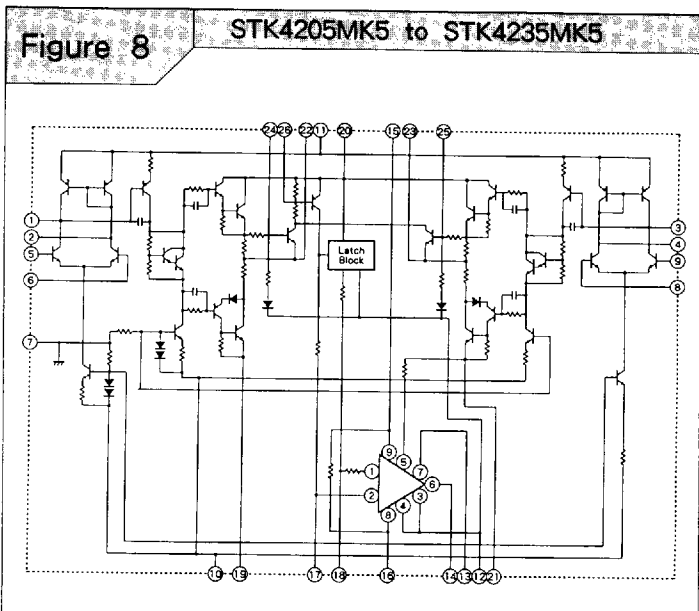
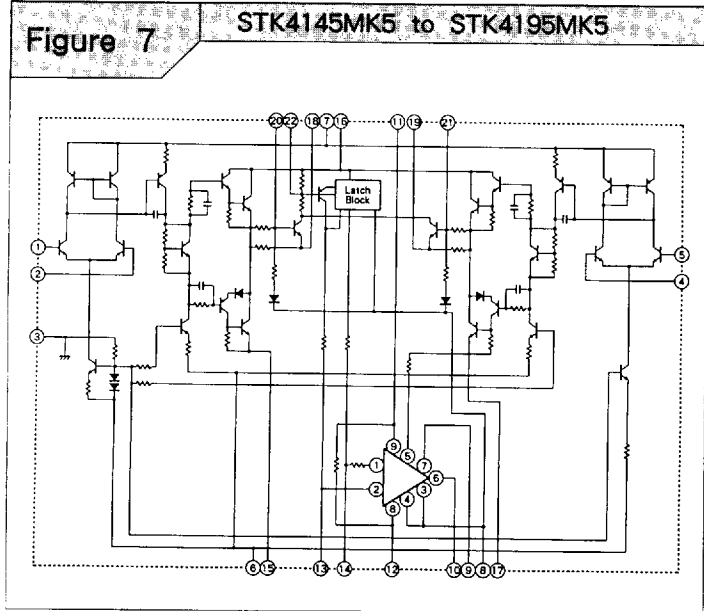


Figure 6

STK4205MK2 to STK4235MK2





# ■ Equivalent Circuit

Figure 13

STK401 - 300 to STK401 - 310

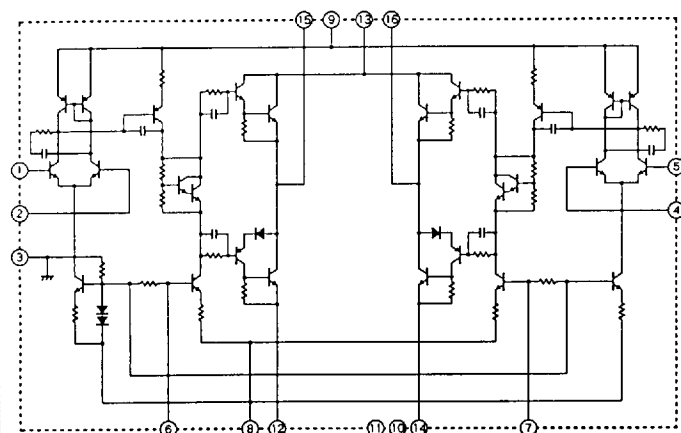


Figure 14

STK401 - 320 to STK401 - 340

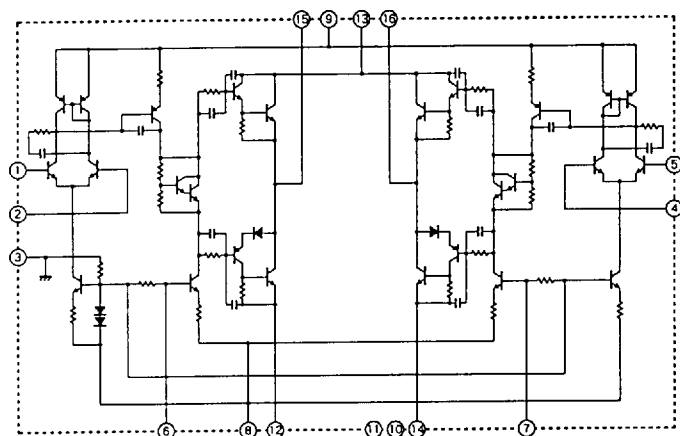


Figure 15

STK400 - 010 to STK400 - 090 , STK400 - 450 to STK400 - 490

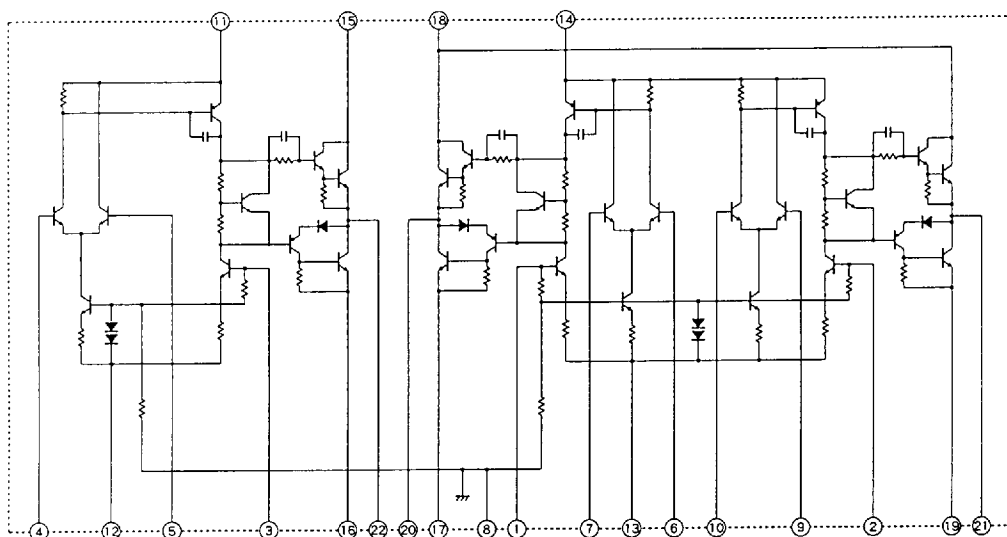


Figure 16

STK400 - 100 , STK400 - 110

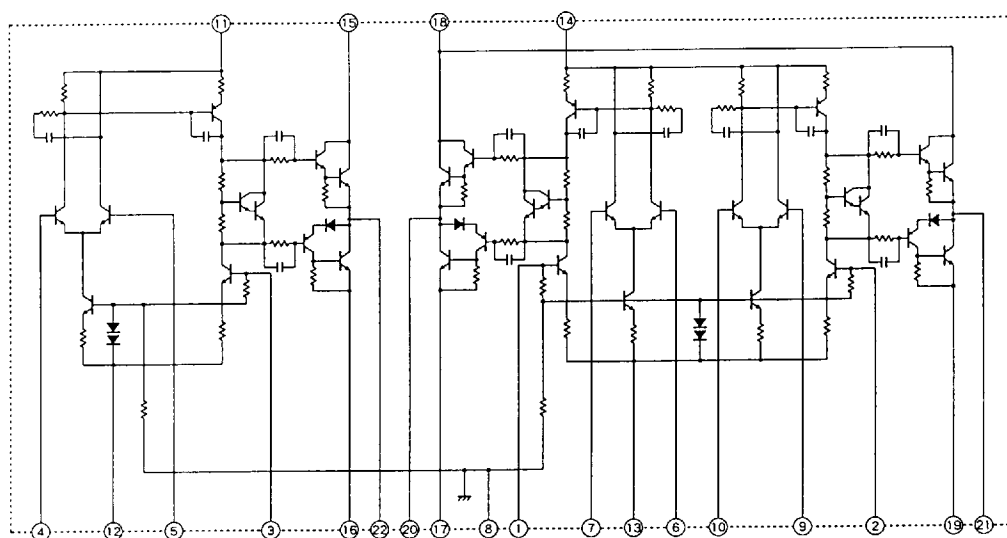


Figure 17

STK400 - 210 to STK400 - 290 , STK400 - 650 to STK400 - 690

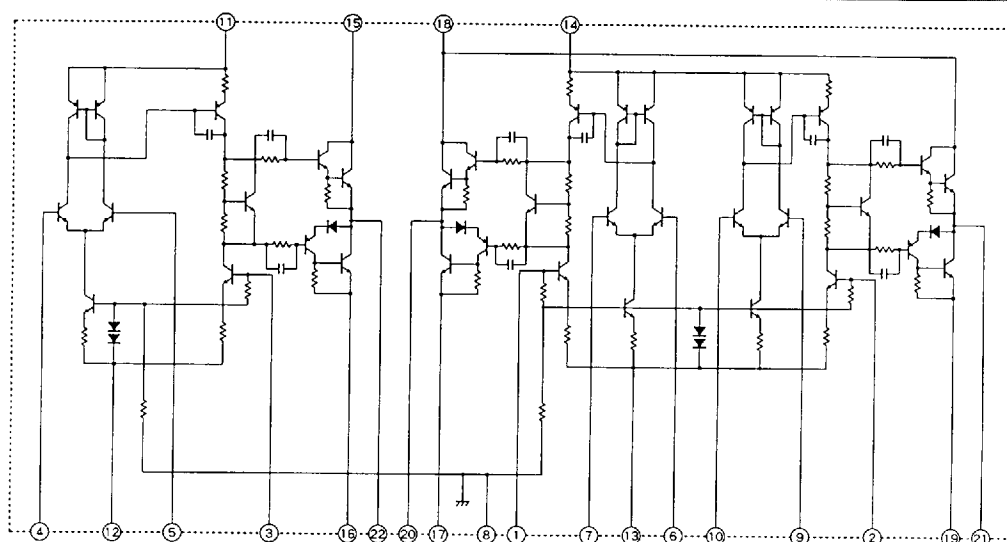


Figure 18

STK400 - 300 , STK400 - 310

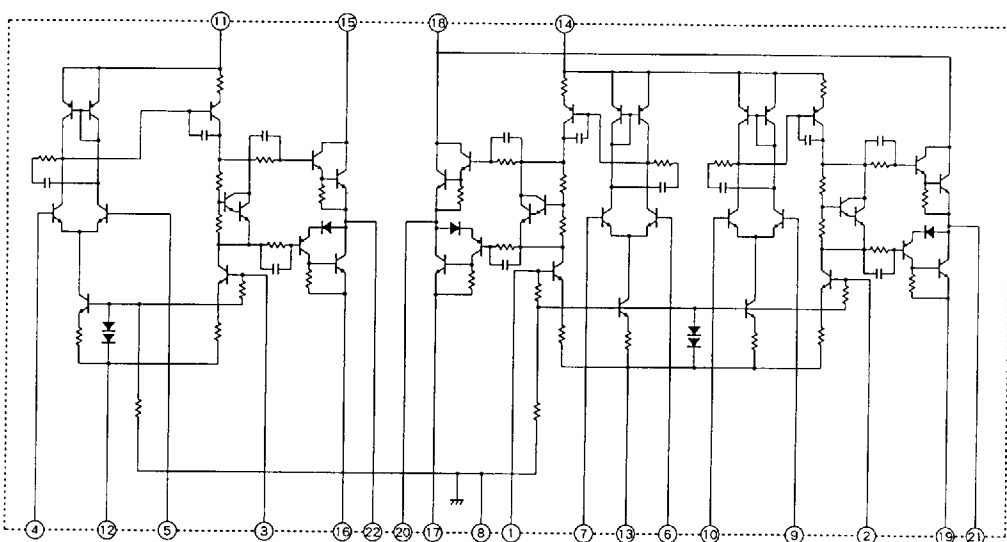
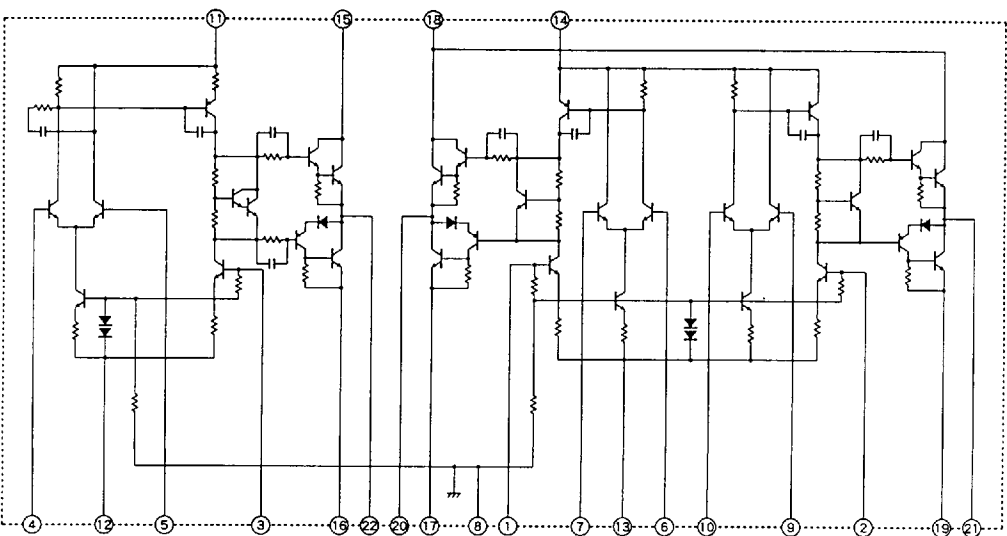


Figure 19

STK400 - 500 to STK400 - 520



# Equivalent Circuit

Figure 20

STK400 - 530

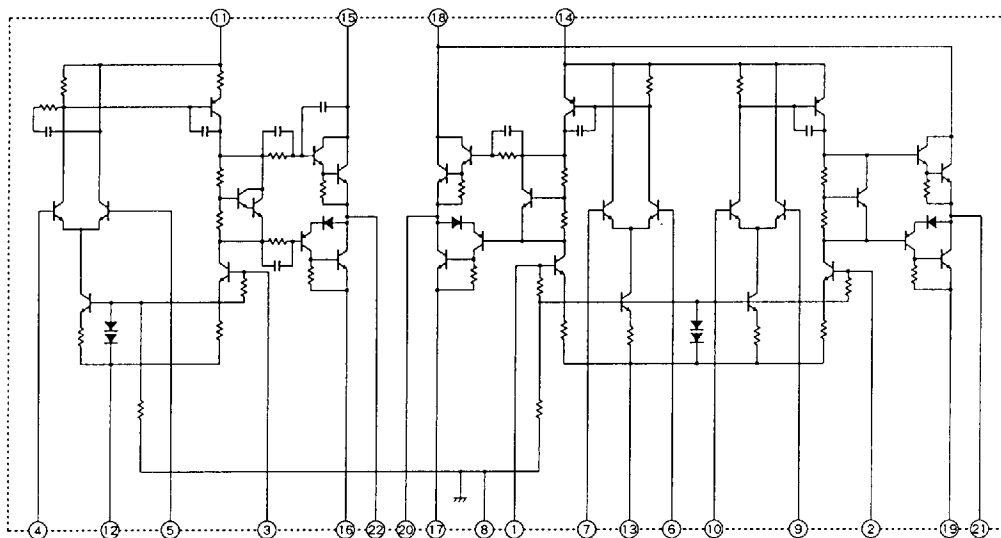


Figure 21

STK400 - 700 , STK400 - 710

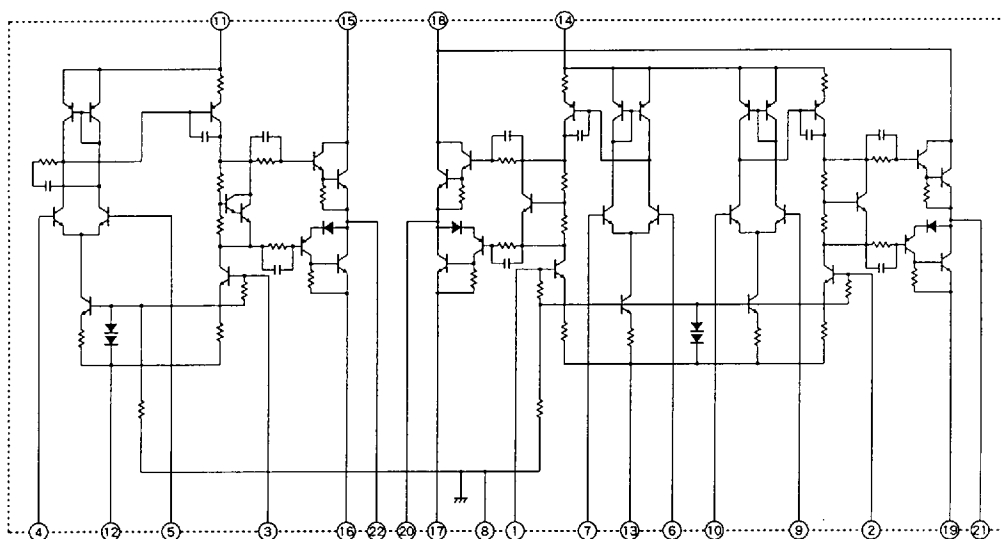


Figure 22

STK400 - 720 , STK400 - 730

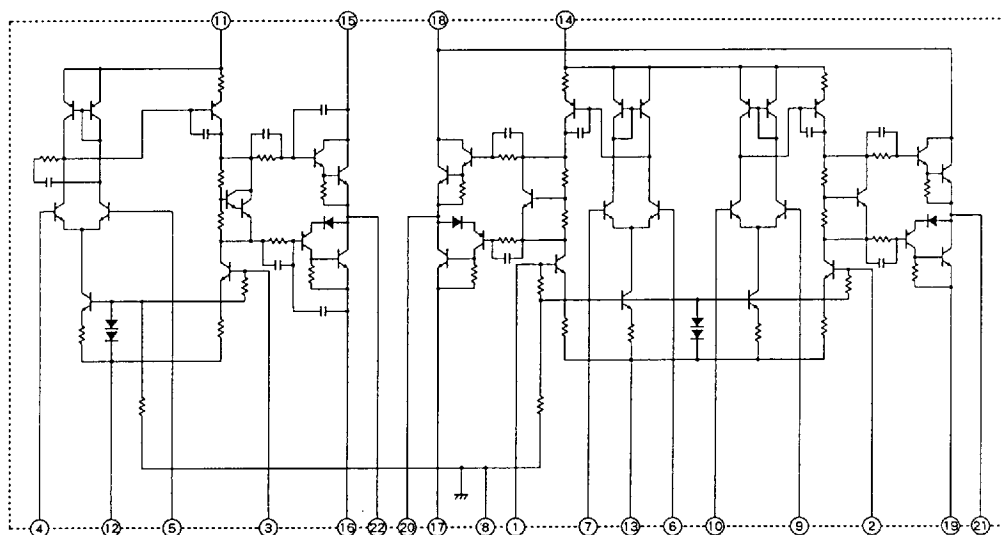
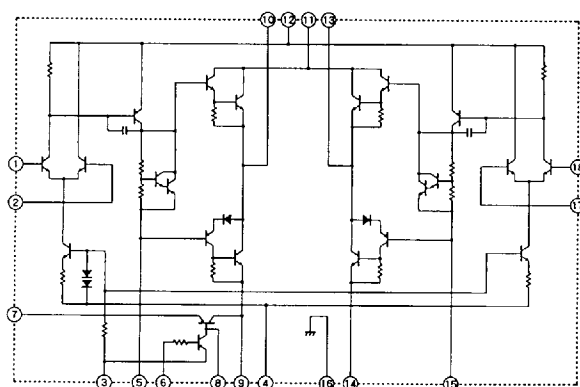


Figure 23

STK4102 II to STK4192 II



**Figure 24**

STK4201 || to STK4241 ||

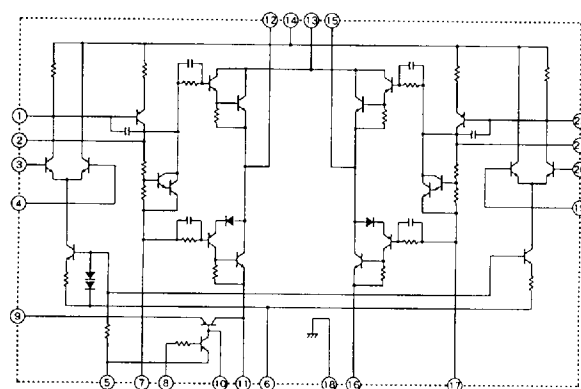
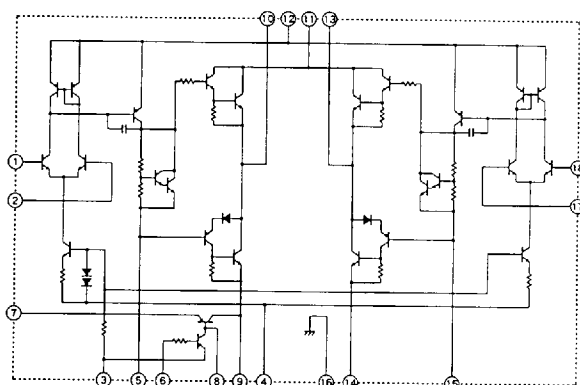


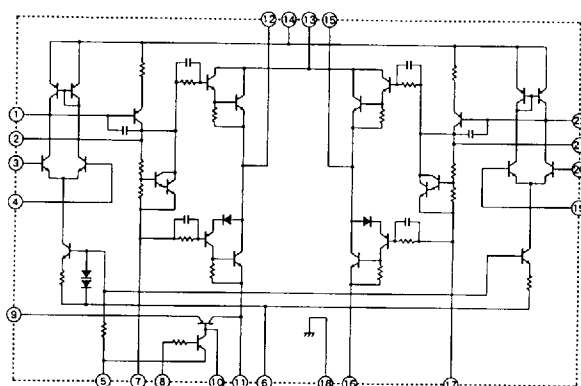
Figure 25

STK4121 V to STK4191 V



## Figure 26

STK4201 V to STK4241 V



## Figure 27

STK4141 X to STK4211 X

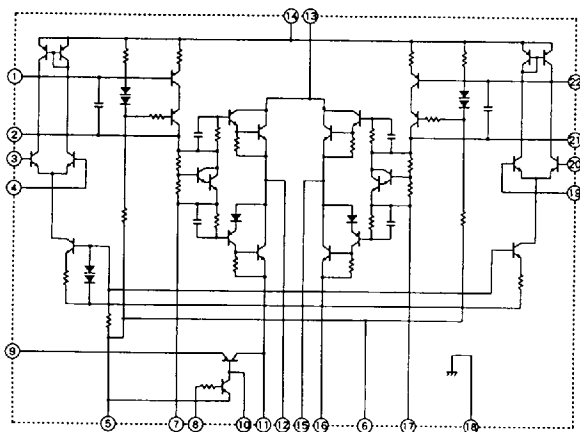
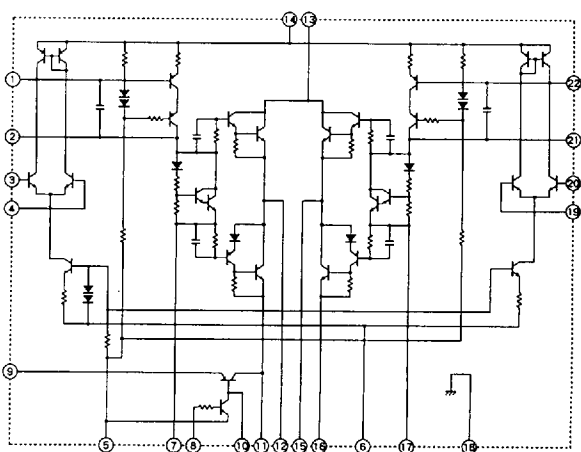


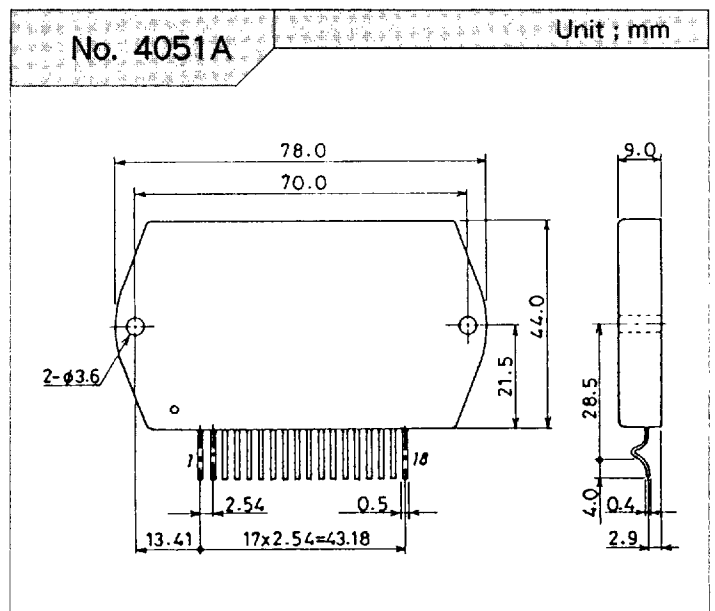
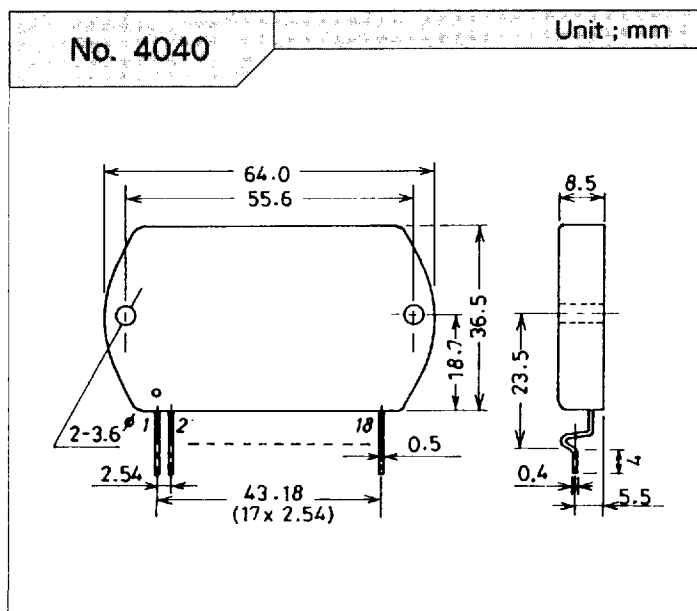
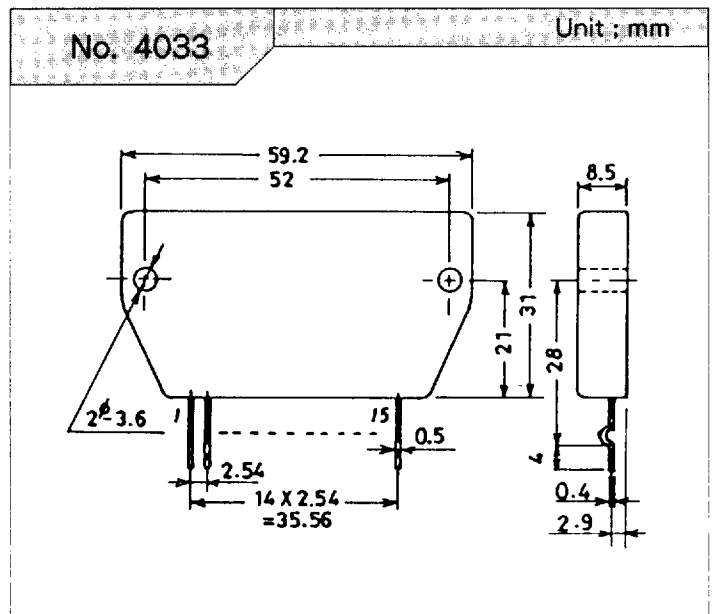
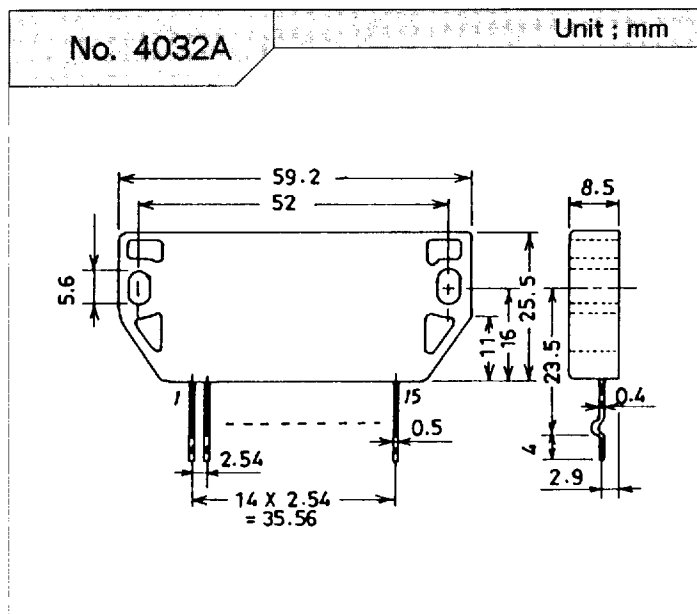
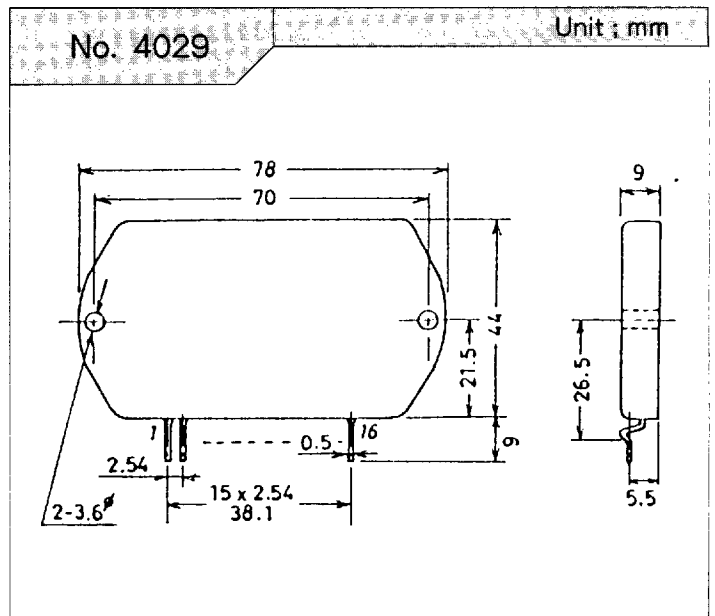
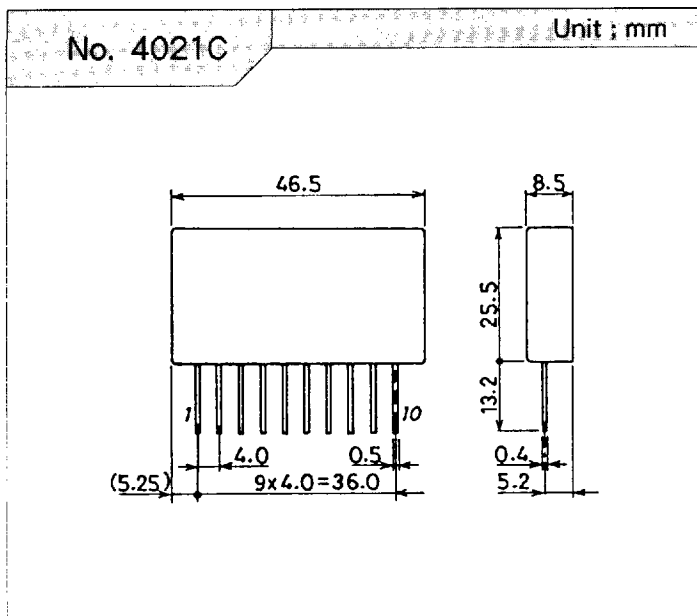
Figure 28

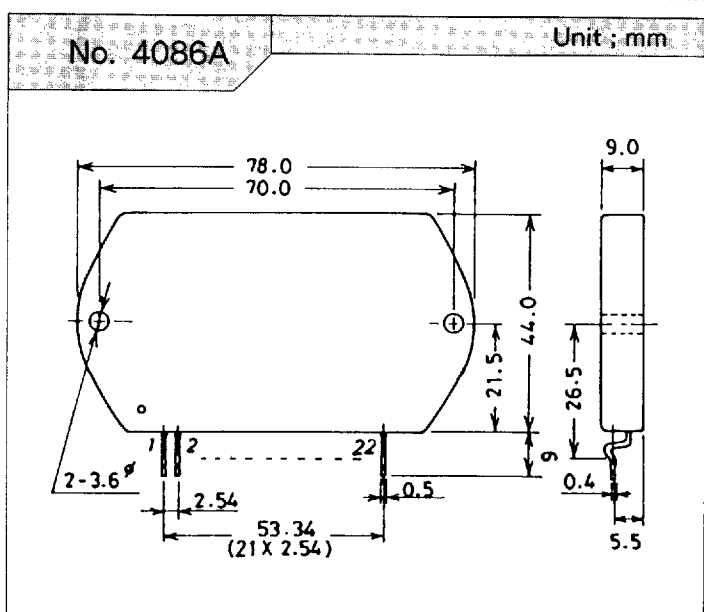
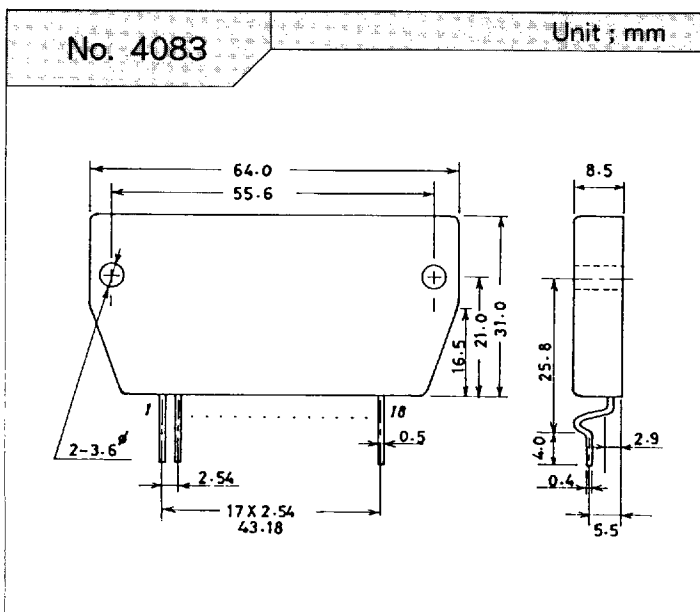
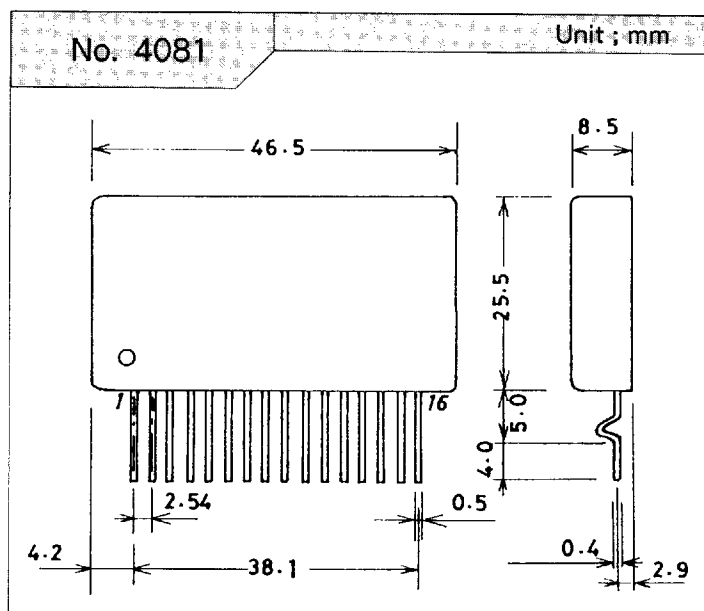
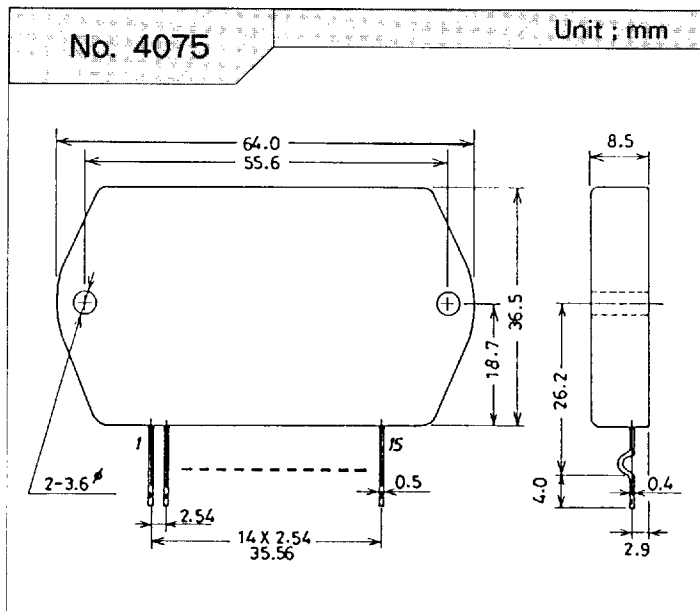
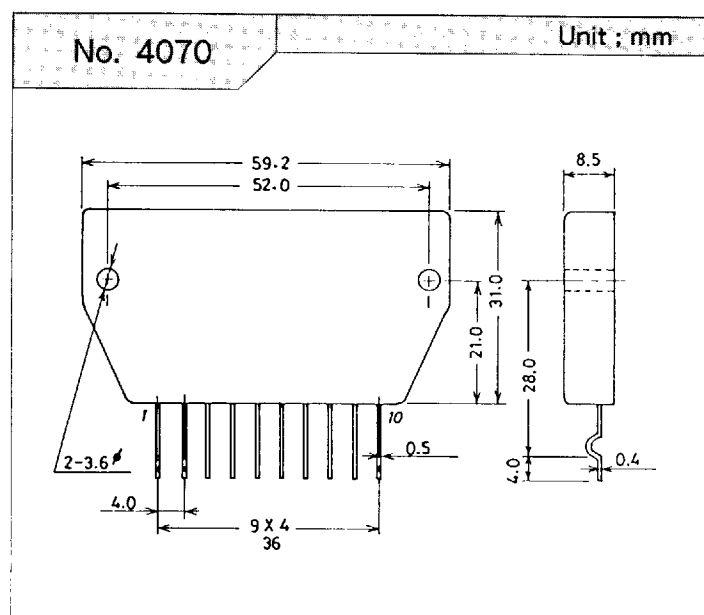
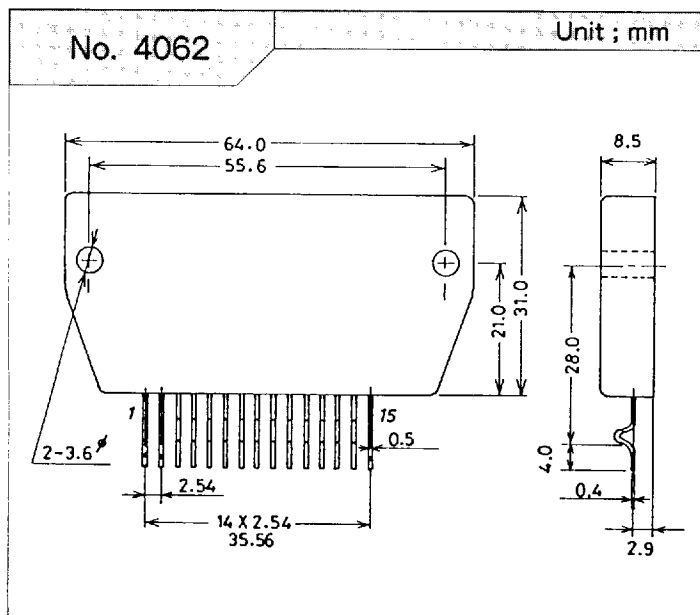
STK4196 X to STK4216 X





# Case Outline





# ■ Case Outline

