

**D.P.P.**  
Darlington  
Power Pack

thick film hybrid

OUTPUT STAGE OF AF POWER AMP.

Features

General output stage of power amplifier has a difficult and complex problem about heat sink designing and its setting. Sanyo's D.P.P. intends to decrease electronic parts and rationalize a manufacturing process by designing IC of only output stage of power amplifier.

- IMST system.
- Output stage for AF high power amplifier.
- Dual power supply.

- Darlington type pure / quasi-complementary circuit.
- These same pin assignment and pin interval lead to standardize a printed board.
- Metal substrate use IMST<sup>®</sup> makes good thermal stability.
- Able to design freely previous section of power amplifier. This leads tone control designing.

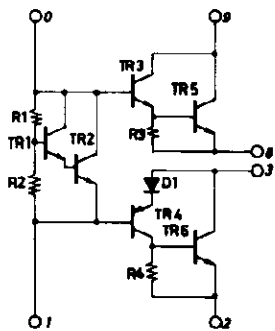
| Type Number  |                             | Maximum Ratings at Ta=25°C |                               |                         |                          |                      |                         |                                 |  |                                 |  | Operation Characteristics at Ta=25°C |                   |  |  |
|--|-----------------------------|----------------------------|-------------------------------|-------------------------|--------------------------|----------------------|-------------------------|---------------------------------|--|---------------------------------|--|--------------------------------------|-------------------|--|--|
|  |                             | Case Outline               | Maximum Supply Voltage VCCmax | Junction Temperature Tj | Storage Temperature Tstg | Thermal Resistance θ | Collector Current ICmax | Allowable Load Shorting Time tL | Supply Voltage at Rated Power at Output RL=16Ω | Output Power Po (f=20 to 20kHz) | Total Harmonic Distortion THD(f=20 to 20kHz) | Quiescent Current Iqcc               | Equipment Circuit |  |  |
| Pure-Complementary Circuit                                   | Quasi-Complementary Circuit | V                          | °C                            | °C                      | °C/W                     | A                    | sec                     | V                               | W  | %                               | mA   |                                      |                   |  |  |
| 1-Channel Darlington Power Pack (Without emitter resistance) |                             |                            |                               |                         |                          |                      |                         |                                 |  |                                 |  |                                      |                   |  |  |
| STK 0030   | STK 0025                    | 4002                       | ±35                           | 150                     | -30 to +105              | 2.6                  | 3                       | 2                               | ±24.4  | 23 min.                         | 0.05 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  | STK 0029                    | 4002                       | ±37                           | 150                     | -30 to +105              | 2.4                  | 5                       | 2                               | ±25.0  | 25 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0040   | STK 0039                    | 4004                       | ±40                           | 150                     | -30 to +105              | 2.4                  | 4                       | 2                               | ±28.5  | 30 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±45                           | 150                     | -30 to +105              | 2.0                  | 5                       | 2                               | ±31  | 35 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0050   | STK 0049                    | 4002                       | ±48                           | 150                     | -30 to +105              | 2.0                  | 5                       | 2                               | ±33  | 40 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±50                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±35  | 45 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0060   | STK 0059                    | 4004                       | ±53                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±36  | 50 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±52.5                         | 150                     | -30 to +105              | 1.6                  | 7                       | -                               | ±38  | 55 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0070   |                             | 4006                       | ±55                           | 150                     | -30 to +105              | 1.4                  | 7                       | -                               | ±40  | 60 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0080   | STK 0105                    | 4006                       | ±55                           | 150                     | -30 to +105              | 1.4                  | 7                       | -                               | ±43  | 70 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4006                       | ±65                           | 150                     | -30 to +105              | 1.3                  | 10                      | -                               | ±46  | 80 min.                         | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4007                       | ±75                           | 150                     | -30 to +105              | 1.0                  | 10                      | -                               | ±50  | 100 min.                        | 0.1 max.                                     | 40 typ, 80 max.                      |                   |  |  |
| STK 0040II   |                             | 4002                       | ±48                           | 150                     | -30 to +105              | 1.8                  | 5                       | 1                               | ±36  | 40 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 0050II   |                             | 4004                       | ±53                           | 150                     | -30 to +105              | 1.6                  | 6                       | 1                               | ±39  | 50 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 0060II   |                             | 4006                       | ±55                           | 150                     | -30 to +105              | 1.3                  | 8                       | 1                               | ±41  | 60 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 0070II   |                             | 4006                       | ±60                           | 150                     | -30 to +105              | 1.3                  | 10                      | 1                               | ±45  | 70 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 0080II   |                             | 4006                       | ±65                           | 150                     | -30 to +105              | 1.2                  | 12                      | 1                               | ±47  | 80 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| 1-Channel Darlington Power Pack (With emitter resistance)    |                             |                            |                               |                         |                          |                      |                         |                                 |  |                                 |  |                                      |                   |  |  |
| STK 1030   | STK 1035                    | 4004                       | ±40                           | 150                     | -30 to +105              | 2.4                  | 5                       | 2                               | ±28.5  | 30 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±40                           | 150                     | -30 to +105              | 2.4                  | 5                       | 2                               | ±28.5  | 30 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
| STK 1040   | STK 1039                    | 4004                       | ±46.1                         | 150                     | -30 to +105              | 1.85                 | 6                       | 2                               | ±30  | 35 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±48                           | 150                     | -30 to +105              | 1.8                  | 7                       | 2                               | ±33  | 40 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
| STK 1050   | STK 1049                    | 4004                       | ±48                           | 150                     | -30 to +105              | 1.8                  | 7                       | 2                               | ±33  | 40 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±50                           | 150                     | -30 to +105              | 1.8                  | 7                       | 2                               | ±34  | 45 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
| STK 1060   | STK 1059                    | 4004                       | ±53                           | 150                     | -30 to +105              | 1.8                  | 7                       | 2                               | ±36  | 50 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±53                           | 150                     | -30 to +105              | 1.6                  | 7                       | -                               | ±38  | 55 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4004                       | ±56                           | 150                     | -30 to +105              | 1.6                  | 10                      | -                               | ±40  | 60 min.                         | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
| STK 1050II   |                             | 4020                       | ±55                           | 150                     | -30 to +105              | 1.6                  | 6                       | 1                               | ±38  | 50 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 1060II   |                             | 4020                       | ±56                           | 150                     | -30 to +105              | 1.3                  | 8                       | 1                               | ±40  | 60 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 1070II   |                             | 4020                       | ±63                           | 150                     | -30 to +105              | 1.3                  | 10                      | 1                               | ±43  | 70 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| STK 1080II   |                             | 4020                       | ±65                           | 150                     | -30 to +105              | 1.2                  | 10                      | 1                               | ±45  | 80 min.                         | 0.01 max.                                    | 40 typ, 70 max.                      |                   |  |  |
| 2-Channel Darlington Power Pack (Without emitter resistance) |                             |                            |                               |                         |                          |                      |                         |                                 |  |                                 |  |                                      |                   |  |  |
|  | STK 2025                    | 4015                       | ±40                           | 150                     | -30 to +105              | 2.6                  | 3                       | 2                               | ±24  | 20x2 min.                       | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  | STK 2029                    | 4015                       | ±43                           | 150                     | -30 to +105              | 2.2                  | 4                       | 2                               | ±25.5  | 25x2 min.                       | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
| 2-Channel Darlington Power Pack (With emitter resistance)    |                             |                            |                               |                         |                          |                      |                         |                                 |  |                                 |  |                                      |                   |  |  |
| STK 2230   | STK 2135                    | 4015                       | ±48                           | 150                     | -30 to +105              | 2.1                  | 4                       | 2                               | ±28.5  | 30x2 min.                       | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4015                       | ±50                           | 150                     | -30 to +105              | 1.85                 | 5                       | 2                               | ±30  | 35x2 min.                       | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4015                       | ±54                           | 150                     | -30 to +105              | 1.8                  | 7                       | 2                               | ±32  | 40x2 min.                       | 0.02 max.                                    | 40 typ, 80 max.                      |                   |  |  |
|  |                             | 4015                       | ±48                           | 150                     | -30 to +105              | 2.1                  | 4                       | 2                               | ±30  | 30x2 min.                       | 0.01 max.                                    | 35 typ, 80 max.                      |                   |  |  |
|  |                             | 4015                       | ±54                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±33.5  | 40x2 min.                       | 0.01 max.                                    | 35 typ, 80 max.                      |                   |  |  |
| STK 2240   | STK 2145                    | 4015                       | ±59                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±37  | 50x2 min.                       | 0.01 max.                                    | 35 typ, 80 max.                      |                   |  |  |
| STK 2250   |                             | 4015                       | ±59                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±37  | 50x2 min.                       | 0.01 max.                                    | 35 typ, 80 max.                      |                   |  |  |
| 1-Channel No Switching Darlington Power Pack                 |                             |                            |                               |                         |                          |                      |                         |                                 |  |                                 |  |                                      |                   |  |  |
| STK 8250   |                             | 4006                       | ±56                           | 150                     | -30 to +105              | 1.8                  | 5                       | 2                               | ±38  | 50 min.                         | 0.01 max.                                    | 80 max.                              |                   |  |  |
| STK 8260   |                             | 4006                       | ±59                           | 150                     | -30 to +105              | 1.4                  | 7                       | 2                               | ±42  | 60 min.                         | 0.01 max.                                    | 80 max.                              |                   |  |  |
| STK 8270   |                             | 4006                       | ±60                           | 150                     | -30 to +105              | 1.4                  | 7                       | 2                               | ±44  | 70 min.                         | 0.01 max.                                    | 80 max.                              |                   |  |  |
| STK 8280   |                             | 4006                       | ±65                           | 150                     | -30 to +105              | 1.4                  | 7                       | 2                               | ±47  | 80 min.                         | 0.01 max.                                    | 80 max.                              |                   |  |  |
| STK 8250II   |                             | 4020                       | ±55                           | 150                     | -30 to +105              | 1.6                  | 6                       | 1                               | ±38  | 50 min.                         | 0.005 max.                                   | 70 max.                              |                   |  |  |
| STK 8260II   |                             | 4020                       | ±56                           | 150                     | -30 to +105              | 1.3                  | 8                       | 1                               | ±40  | 60 min.                         | 0.005 max.                                   | 40 typ, 70 max.                      |                   |  |  |
| STK 8270II   |                             | 4020                       | ±63                           | 150                     | -30 to +105              | 1.3                  | 10                      | 1                               | ±44  | 70 min.                         | 0.005 max.                                   | 40 typ, 70 max.                      |                   |  |  |
| STK 8280II   |                             | 4020                       | ±65                           | 150                     | -30 to +105              | 1.2                  | 12                      | 1                               | ±45  | 80 min.                         | 0.01 max.                                    | 70 max.                              |                   |  |  |

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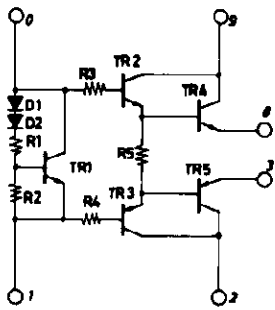
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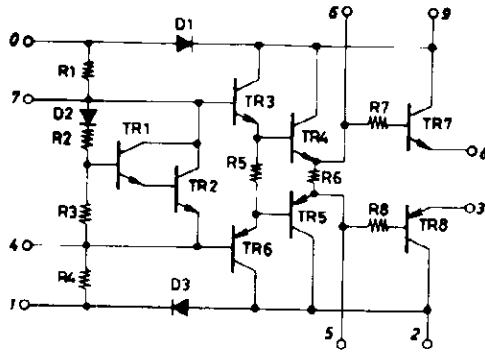
**EQUIVALENT CIRCUIT**



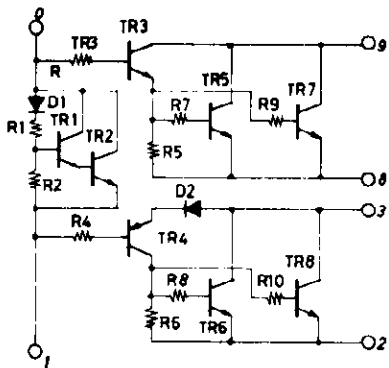
STK 0025, 0029, 0039, 0049, 0059



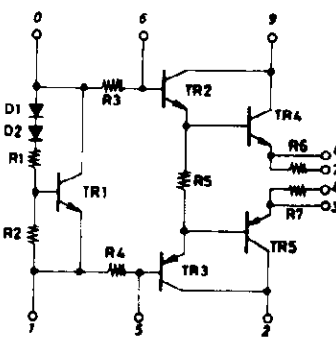
STK 0030, 0040, 0050, 0060, 0070, 0080,



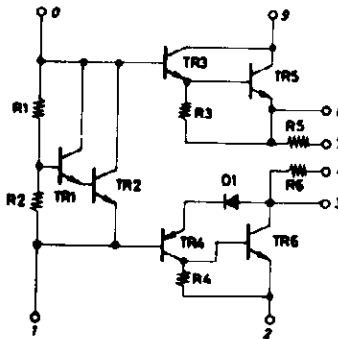
STK 0040II, 0050II, 0060II, 0070II, 0080II



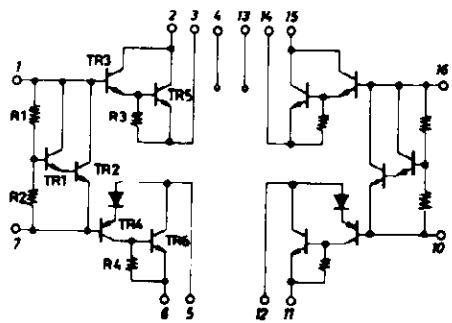
STK 0105



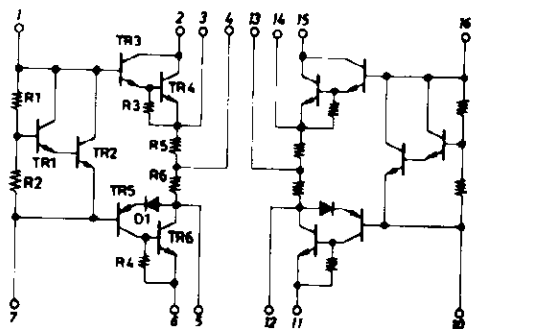
STK 1030, 1040, 1050, 1060



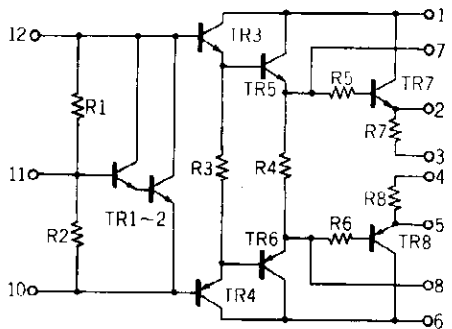
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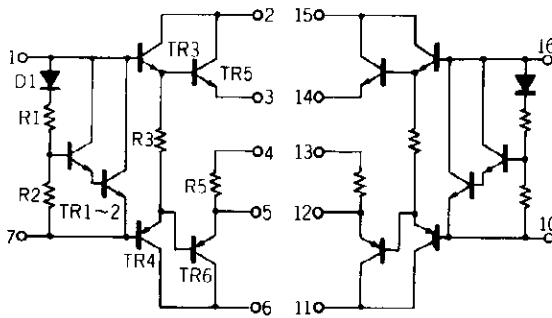
STK 2025, 2029



STK 2135, 2139, 2145



STK 1050II, 1060II, 1070II, 1080II



STK 2230, 2240, 2250