



**60 W MIN. AF POWER AMPLIFIER OUTPUT STAGE (DPP)  
INTEGRATED EMITTER RESISTOR  
THICK FILM HYBRID INTEGRATED CIRCUIT**

**FEATURES**

- Does not require externally connected emitter resistors.
- Values of emitter resistors have carefully been reviewed to provide superior characteristics.
  - Better supply voltage utilization permits designing power supply voltages that are  $\pm 0.7$  V (for  $R_L = 4\Omega$ ) lower than those required for previous DPP models.
  - Maximum allowable power consumption for each resistor is 5 W or higher, permitting accommodation for all loads.
  - Peak allowable current is 18 A or more, providing an ample margin even for peak currents under when short circuited or similar emergencies.
  - In particular, maximum outputs  $4\Omega$  have been enormously improved.
- Use of emitter resistors facilitates meeting different safety standards and designing PCBs.
- Mutual interferences in the high-frequency range caused by layout of externally connected emitter resistors no longer exist. This facilitates lower distortion factors.
- Pins are used for emitter resistor output terminals that were not connected in previous DPPs. All other terminals remain unchanged; there is no need for major circuit board changes.

**MAXIMUM RATINGS/ $T_a = 25^\circ\text{C}$**

|                              |  |                 | unit               |
|------------------------------|--|-----------------|--------------------|
| Maximum power supply voltage | $V_{CC \text{ max}}$                       | $\pm 56$        | V                  |
| Thermal resistance           | $\theta_{j-c}$ Ideal dissipating condition | 1.6             | $^\circ\text{C/W}$ |
| Collector current            | $I_{CC}$                                   | 10              | A                  |
| Junction temperature         | $T_j$                                      | 150             | $^\circ\text{C}$   |
| Storage ambient temperature  | $T_{stg}$                                  | $-30 \sim +105$ | $^\circ\text{C}$   |

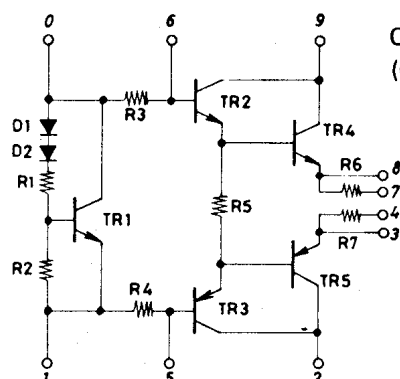
**RECOMMENDED OPERATING CONDITIONS/ $T_a = 25^\circ\text{C}$**

|                                  |          |          | unit     |
|----------------------------------|----------|----------|----------|
| Recommended power supply voltage | $V_{CC}$ | $\pm 40$ | V        |
| Load resistance                  | $R_L$    | 8        | $\Omega$ |

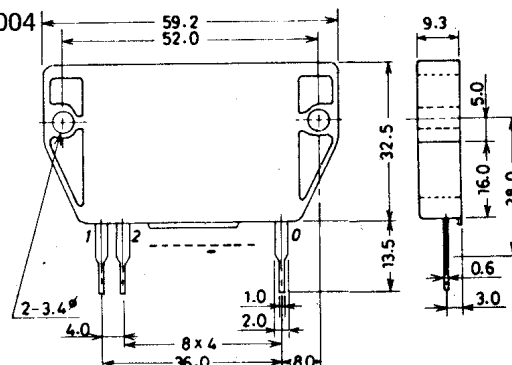
**OPERATING CHARACTERISTICS/ $T_a = 25^\circ\text{C}$ ,  $V_{CC} = \pm 40$  V,  $R_L = 8\Omega$ ,  $R_g = 600\Omega$ ,  $V_G = 26.3$  dB, at specified test circuit (conforming with sample application circuit)**

|                   |           |                                   | min | typ | max | unit |
|-------------------|-----------|-----------------------------------|-----|-----|-----|------|
| No signal current | $I_{CC0}$ | $V_{CC} = \pm 48$ V               | 20  | 40  | 80  | mA   |
| Output power      | $P_o(1)$  | THD = 0.02%, $f = 20$ Hz ~ 20 kHz | 60  |     |     | W    |

Equivalent circuit



Case Outline 4004 (unit: mm)



These specifications are subject to change without notice.

## STK-1060

|                           |  | min  | typ  | max  | unit     |
|---------------------------|--|------|------|------|----------|
| Output power              | $P_O (2)$ $V_{CC} = \pm 34.5 \text{ V}$ , $f = 1 \text{ kHz}$ ,<br>THD = 0.03%, $R_L = 4 \Omega$ | 70   |      |      | W        |
| Total harmonic distortion | THD $P_O = 1 \sim 60 \text{ W}$ , $f = 20 \text{ Hz} \sim 20 \text{ kHz}$                        |      |      | 0.02 | %        |
| Emitter resistor          | $R_E$  | 0.18 | 0.22 | 0.30 | $\Omega$ |

■ SAMPLE APPLICATION CIRCUIT: 60 W min. AF Power Amplifier

