



STK-1050

**50 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.
  - a. 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.
  - b. Maximum allowable power consumption for each resistor is 5 W or higher, permitting accommodation for all loads.
  - c. Peak allowable current is 18 A or more, providing an ample margin even for peak currents under when short circuited or similar emergencies.
  - d. In particular, maximum outputs  $4\Omega$  have been enormously improved.
- Use of emitter resistors facilitates meeting deferent 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/ $T_a = 25^\circ\text{C}$**

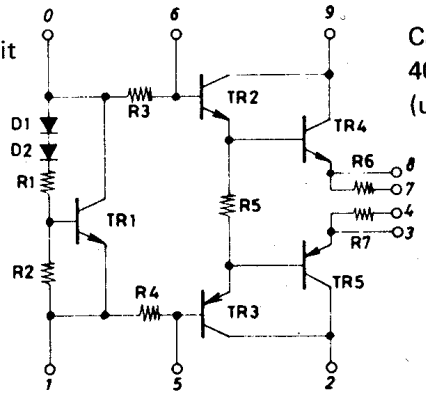
|                                   |  |  | unit                      |
|-----------------------------------|--|--|---------------------------|
| Maximum power supply voltage      | $V_{CC}$ max                               | $\pm 53$   | V                         |
| Thermal resistance                | $\theta_{j-c}$ Ideal dissipating condition | 1.8  | $^\circ\text{C}/\text{W}$ |
| Collector current                 | $I_C$                                      | 7  | A                         |
| Junction temperature              | $T_j$                                      | 150  | $^\circ\text{C}$          |
| Storage ambient temperature       | $T_{stg}$                                  | $-30 \sim +105$  | $^\circ\text{C}$          |
| Short-circuit load allowable time | $t_s$                                      | $V_{CC} = \pm 36$ V*, $f = 50$ Hz,<br>$R_L = 8\Omega$ , $P_o = 50$ W | 2 sec                     |

\*Employ specified transformer power supply

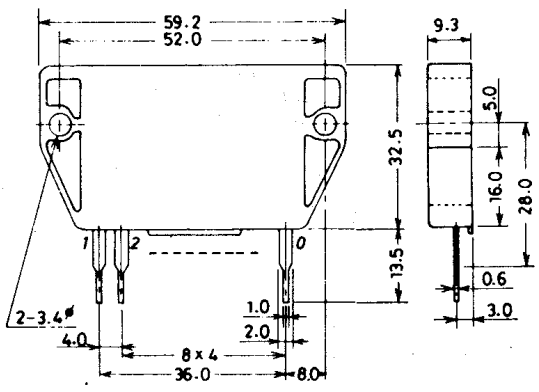
**RECOMMENDED OPERATING CONDITIONS/ $T_a = 25^\circ\text{C}$**

|                                  |          |          | unit     |
|----------------------------------|----------|----------|----------|
| Recommended power supply voltage | $V_{CC}$ | $\pm 36$ | V        |
| Load resistance                  | $R_L$    | 8        | $\Omega$ |

Equivalent circuit



Case Outline 4004 (unit: mm)

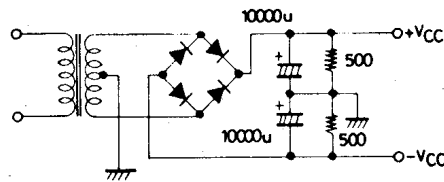


These specifications are subject to change without notice.

**OPERATING CHARACTERISTICS**/ $T_a = 25^\circ$ ,  $V_{CC} = \pm 36$  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         | $I_{CCO}$ | $V_{CC} = \pm 43$ V   | 20   | 40   | 80   | mA       |
|                           |           |   | 50   |      |      | W        |
| Output power              | $P_O$ (1) | THD = 0.02%, $f = 20$ Hz ~ 20 kHz                                 | 50   |      |      | W        |
|                           | $P_O$ (2) | $V_{CC} = \pm 31$ V, THD = 0.03%,<br>$f = 1$ kHz, $R_L = 4\Omega$ | 55   |      |      | W        |
| Total harmonic distortion | THD       | $P_O = 1 \sim 50$ W, $f = 20$ Hz ~ 20 kHz                         |      |      | 0.02 | %        |
| Emitter resistor          | $R_E$     |   | 0.18 | 0.22 | 0.30 | $\Omega$ |

\*To test for short-circuit allowable time, use a transformer power supply specified in diagram at the right.



Specified transformer power supply  
(Sansui RP-35 or equivalent)  
(Tango MG-200 or equivalent)

■ SAMPLE APPLICATION CIRCUIT: 50 W min. AF Power Amplifier

