

Operating Conditions for the 6DQ6A as a Class AB1 AF Power Amplifier

We have been frequently asked for the operating conditions for the 6DQ6A as an af amplifier, particularly by "Hams". These conditions were established with a no-load plate dissipation of 20 watts, maximum plate dissipation of

25 watts, all supplies regulated, fixed bias with matched valves. All readings are "per valve", except power output, which is the total for the two valves.

| E_{bb} | 300 | | | 460 | | | 560 | | V |
|---------------|------|------|------|------|------|------|------|------|----------|
| E_{C2} | 150 | 175 | 200 | 150 | 175 | 200 | 150 | 175 | V |
| E_{C1} | -22 | -31 | -35 | -29 | -36 | -40 | -31 | -38 | V |
| $I_b(O)$ | 67 | 67 | 67 | 44 | 44 | 44 | 38 | 38 | MA |
| $I_{C2}(O)$ | 1.6 | 2.1 | 2.5 | 1.5 | 2.0 | 2.3 | 1.0 | 1.3 | MA |
| $I_b(MAX)$ | 108 | 130 | 145 | 100 | 120 | 140 | 100 | 118 | MA |
| $I_{C2}(MAX)$ | 6 | 8 | 10 | 5 | 7 | 9 | 5 | 7 | MA |
| P_{PLATE} | 15 | 18 | 19 | 18 | 20 | 25 | 20 | 23 | W |
| P_{SCREEN} | 0.8 | 1.4 | 2.0 | 0.8 | 1.2 | 1.8 | 0.8 | 1.1 | W |
| $R_L P-P$ | 3300 | 2600 | 2200 | 5500 | 4500 | 3600 | 6800 | 5600 | Ω |
| P.O. | 34 | 43 | 50 | 57 | 71 | 79 | 72 | 86 | W |
| DIST. | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 5.0 | 5.0 | 5.0 | % |
| EFF. | 53 | 57 | 57 | 62 | 65 | 62 | 64 | 65 | % |
| $I_b PEAK$ | 300 | 360 | 440 | 300 | 360 | 440 | 300 | 360 | MA |
| $E_b(MIN)$ | 50 | 55 | 60 | 50 | 55 | 60 | 50 | 55 | V |
| $e_{g1} P-P$ | 44 | 62 | 70 | 58 | 72 | 80 | 62 | 76 | V |

I_b = approx. knee current
 $E_{b min}$ = approx. knee voltage

$e_{g1 P-P}$ = peak-peak grid drive
P.O. = total average power output