

| 6J1 – 6J1P – 6AK5 – JAN5654W - OTK Stamp – etc., Vacuum Tube Testing Project | | | | | | | | |
|---|---------------------------|----------------------|-----------------------------|---|----------------------------------|-----------------------------------|----------------------------------|------------------------|
| Date of tests: 3/2/24 to 4/3/24 | | | | | | | | |
| Test Equipment: Heathkit TT-1a, 6J1 preamp, B&K 4040B function generator, Tektronix TBS 1052B | | | | | | | | |
| Line Voltage: 120vac, adjusted to reference level for each test. | | | | | | | | |
| Test Reference Number | Tube type and description | Short test Pass/Fail | Grid current test Pass/Fail | K1/K2 Trans-conductance(gm) (micromhos) | In-circuit input voltage at 1kHz | In-circuit output voltage at 1kHz | In-circuit gain (mu) In dB (*10) | Warm up time (minutes) |
| 1 | 6J1 (*1) | Pass | Pass | 2800/2800 | 0.80 | 1.96 | 7.76 | 10 |
| 2 | 6J1 (*1) | Pass | Pass | 4000/4000 | 0.80 | 1.94 | 7.69 | 10 |
| 3 | 6J1 (*1) | Pass | Pass | 4600/6000 (*2) | 0.80 | 2.02 | 8.02 | 10 |
| 4 | 6J1 (*1) | Pass | Pass | 4200/4200 | 0.80 | 1.88 | 7.40 | 10 |
| 5 | 6J1P-EV (*3) | Pass | Pass | 4500/4500 | 0.80 | 2.02 | 8.02 | 10 |
| 6 | 6J1P-EV (*3) | Pass | Pass | 3850/3850 | 0.80 | 1.98 | 7.87 | 10 |
| 7 | RCA 6AK5 (*4) | Pass | Pass | 4450/4450 | 0.80 | 1.91 | 7.56 | 10 |
| 8 | RCA 6AK5 (*4) | Pass | Pass | 4000/4000 | 0.80 | 2.02 | 8.02 | 10 |
| 9 | 6J1 OTK1 (*5) | Pass | Pass | 3050/3050 | 0.80 | 1.97 | 7.83 | 10 |
| 10 | 6J1 OTK1 (*5) | Pass | Pass | 4800/4800 | 0.80 | 1.87 | 7.38 | 10 |
| 11 | 6J1 OTK1 (*5) | Pass | Pass | 2900/2900 | 0.80 | 1.69 | 6.50 | 10 |
| 12 | 6J1 OTK1 (*5) | Pass | Pass | 3300/3300 | 0.80 | 1.85 | 7.28 | 10 |
| 13 | 6J1 OTK1 (*5) | Pass | Pass | 2300/2300 | 0.80 | 1.87 | 7.38 | 10 |
| 14 | 6J1 OTK1 (*5) | Pass | Pass | 4700/4800 | 0.80 | 1.84 | 7.23 | 10 |
| 15 | 6J1 OTK1 (*5) | Pass | Pass | 2350/2350 | 0.80 | 1.67 | 6.39 | 10 |
| 16 | 6J1 OTK1 (*5) | Pass | Pass | 2400/2400 | 0.80 | 1.92 | 7.60 | 10 |
| 17 | 6J1 OTK1 (*5) | Pass | Pass | 2650/2650 | 0.80 | 1.74 | 6.75 | 10 |
| 18 | 6J1 OTK1 (*5) | Pass | Pass | 900/900 (*6) | 0.80 | 1.44 | 5.11 | 10 |
| 19 | JAN 5654W (*7) | Pass | Pass | 4150/4150 | 0.80 | 1.91 | 7.56 | 10 |
| 20 | JAN 5654W (*7) | Pass | Pass | 2300/2300 | 0.80 | 1.88 | 7.42 | 10 |
| 21 | 5654/6AK5 (*8) | Pass | Pass | 5000/5000 | 0.80 | 1.85 | 7.28 | 10 |
| 22 | Tung Sol 6AK5 (*9) | Pass | Pass | 4300/4300 | 0.80 | 1.98 | 7.85 | 10 |
| 23 | 6J1 OTK1-2 (*5) | Pass | Pass | 3600/3600 | 0.80 | 2.00 | 7.96 | 10 |
| 24 | 6J1 OTK1-2 (*5) | Pass(*11) | Pass | 2950/2950 | 0.80 | 1.96 | 7.78 | 10 |
| 25 | 6J1 OTK1-2 (*5) | Pass | Pass | 4250/4250 | 0.80 | 1.98 | 7.87 | 10 |
| 26 | 6J1 OTK1-2 (*5) | Fail (*12) | Pass | 5700/7000+ | 0.80 | 1.98 | 7.87 | 10 |
| 27 | 6J1 OTK1-2 (*5) | Pass | Pass | 4700/4700 | 0.80 | 1.95 | 7.74 | 10 |
| 28 | 6J1 OTK1-2 (*5) | Pass | Pass | 2400/2400 | 0.80 | 1.82 | 7.14 | 10 |
| 29 | 6J1 OTK1-2 (*5) | Pass | Pass | 2950/2950 | 0.80 | 1.86 | 7.33 | 10 |
| 30 | 6J1 OTK1-2 (*5) | Pass | Pass | 3000/3000 | 0.80 | 1.67 | 6.39 | 10 |
| 31 | 6J1 OTK1-2 (*5) | Pass | Pass | 4300/4300 | 0.80 | 1.89 | 7.47 | 10 |

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| 32 | 6J1 OTK1-2 (*5) | Pass | Pass | 4900/4900 | 0.80 | 2.08 | 8.30 | 10 |
| 33 | 6J1 OTK1-2 (*5) | Pass | Pass | 4600/4600 | 0.80 | 1.98 | 7.87 | 10 |
| 34 | 6J1 OTK1-2 (*5) | Pass | Pass | 5300/5300 | 0.80 | 1.96 | 7.78 | 10 |
| 35 | 6J1 OTK1-2 (*5) | Pass | Pass | 2800/2800 | 0.80 | 1.87 | 7.38 | 10 |
| 36 | 6J1 OTK1-2 (*5) | Pass | Pass | 4000/4000 | 0.80 | 1.94 | 7.69 | 10 |
| 37 | 6J1 OTK1-2 (*5) | Pass (*13) | Pass | 2800/2800 | 0.80 | 1.89 | 7.47 | 10 |
| 38 | 6J1 OTK1-2 (*5) | Pass (*13) | Pass | 4700/4700 | 0.80 | 2.00 | 7.96 | 10 |
| 39 | 6J1 OTK1-2 (*5) | Pass | Pass | 3750/3750 | 0.80 | 1.96 | 7.78 | 10 |
| 40 | 6J1 OTK1-2 (*5) | Pass (*14) | Pass | 4420/4420 | 0.80 | 1.88 | 7.42 | 10 |
| 41 | 6J1 OTK1-2 (*5) | Pass | Pass | 3700/3700 | 0.80 | 2.01 | 8.00 | 10 |
| 42 | 6J1 OTK1-2 (*5) | Pass | Pass | 7000/7600 (*15) | 0.80 | 2.03 | 8.09 | 10 |
| 43 | 6J1 OTK1-2 (*5) | Pass | Pass | 3500/3500 | 0.80 | 1.88 | 7.42 | 10 |
| 44 | 6J1 OTK1-2 (*5) | Pass (*13) | Pass | 4650/4650 | 0.80 | 1.98 | 7.87 | 10 |
| 45 | 6J1 OTK1-2 (*5) | Pass | Pass | 5500/6100 | 0.80 | 2.03 | 8.09 | 10 |
| 46 | 6J1 OTK1-2 (*5) | Pass | Pass | 1900/1900 | 0.80 | 1.54 | 5.69 | 10 |
| (*1) These were the tubes supplied with my original two preamp kits from China | | | | | | | | |
| (*2) Tube is defective and readings are bouncing up and down between pins K1 and K2. | | | | | | | | |
| (*3) Kornbread's Voskhod Rocket matched pair | | | | | | | | |
| (*4) Kornbread's RCA 6AK5 matched pair | | | | | | | | |
| (*5) 6J1 (6AK5) Voskhod w/OTK1 stamp from Ukraine (stamping very poor on 2 nd batch) | | | | | | | | |
| (*6) This tube appears to be defective. I tried cleaning the pins, but no luck. GM is very low. | | | | | | | | |
| (*7) Matched pair JAN 5654W tubes (GE green label over white lettering, looks official) | | | | | | | | |
| Doubled checked the measurements and cleaned the pins, but no luck on this pair!!! | | | | | | | | |
| (*8) Purchased from NOS of tubes at American Science and Surplus in Milwaukee. The printing on the tube reads: 5654/6AK5 5434A 312J with an "S" logo inside an inverted triangle symbol. | | | | | | | | |
| (*9) Purchased from NOS of tubes at American Science and Surplus in Milwaukee. The printing on the tube reads: Tung Sol Made in USA JTL 6AK5. | | | | | | | | |
| (*10) Measured by swapping tubes in a 6J1 preamp with tightly matched channels (0.1%) and then averaging the gain for the two channels. Tested at full volume with a dual mono 1kHz 800mv input signal that was divided equally into the two channels with two precision 1k ohm resistors. | | | | | | | | |
| (*11) This tube initially failed the grid leakage test at <500K, but cleared up on second test. Dirty pins? | | | | | | | | |
| (*12) Borderline pass/fail grid leakage at <500K ohms. K1/K2 variance very high. Reject! | | | | | | | | |
| (*13) Passes with grid and cathode to heater leakage tests at about the 5meg ohm level. OK. | | | | | | | | |
| (*14) Borderline pass/fail of the cathode to heater leakage test at 700K ohms. Still OK. | | | | | | | | |
| (*15) Tube is defective and reading bounce up & down between K1 and K2; runs very hot, too hot to handle!! | | | | | | | | |
| General note: Cathodes K1 and K2 are tied together inside the 6J1 tube packages. The transconductance (GM) should therefore always be the same for the K1 and K2 measurements. This, however, is not always the case due to dirty tube pins or other defects inside the tube. | | | | | | | | |