

General Characteristics

| | |
|---------------------------------------|--------------------|
| Heater Voltage | N/C (Open) |
| Heater Current | N/C |
| Grid No. 1 to Plate Capacitance | 0.02 μF |
| Grid No. 1 to Cathode Capacitance | 4.0 μF |
| Grid No. 2 and Grid No. 3 Capacitance | N/C |

Recommended Applications by Type

TS6AK5/A1 – This FETRON is designed for general purpose applications at operating frequencies up to 30 MHz. Typical applications include telephone type carriers, FM IF strips operating at 10.7 MHz, Hi-Frequency receivers through the 10 meter band, and DC applications such as analog computers. It is not recommended for use as an FM Limiter.

TS6AK5/A2 – This FETRON should be used in those 6AK5 circuits heavily biased for low plate current operation and having high plate load resistances, typically above 5000 ohms.

TS6AK5/A3 – This FETRON is designed for VHF operation between 30 and 200 MHz. It duplicates 6AK5 vacuum type operating dynamic characteristics up to about 300 MHz. When use in RF Tuners is anticipated, the receiver AGC range should be compared with the TS6AK5/A3 cutoff characteristics to ensure proper operation.

Operating Conditions and Characteristics (At 25°C unless otherwise specified)

| Characteristic | Condition | TS6AK5/A1 | | | TS6AK5/A2 | | | TS6AK5/A3 | | | Units | |
|-----------------------------|---|-----------------|------|------|-------------|------|------|--------------|------|------|------------------|--------------------|
| | | General Purpose | | | Low Current | | | Hi-Frequency | | | | |
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | | |
| Plate Supply Voltage | | | 130 | 180 | | 130 | 180 | | 130 | 180 | V | |
| Grid No. 2 Supply Voltage | | | N/C | | | N/C | | | N/C | | | |
| Cathode Bias Resistor | | | 200 | | | 200 | | | 200 | | | Ω |
| Plate Resistance | | 0.5 | 5.0 | | 0.5 | 5.0 | | 0.5 | 5.0 | | M Ω | |
| Transconductance @ 1 kHz | $R_K = 200 \Omega$ $C_K = 4.0 \mu\text{F}$ | 3500 | 4500 | 7500 | 2000 | 3500 | 7500 | 2800 | 3400 | 6000 | μMHOS | |
| Grid No. 1 Voltage | $I_D = 10 \mu\text{A}$ | | -5.0 | -8.5 | | -2.5 | -6.0 | | -3.5 | -8.5 | V | |
| Plate Current | $R_K = 200 \Omega$ | 4.0 | 7.0 | 10 | 1.5 | 3.0 | 4.5 | 2.8 | 4.0 | 8.0 | mA | |
| Grid No. 2 Current | | | N/A | | | N/A | | | N/A | | | |
| Useful Frequency Limit | | | 30 | | | 30 | | | 100 | 200 | MHz | |
| Grid No. 1 Current | $E_{c1} = -12 \text{ V}$ | | 0.01 | 0.1 | | 0.01 | 0.1 | | 0.01 | 0.1 | μA | |
| Case Operating Temperature | $P_p = 2.0 \text{ W}$ | | 67 | | | 67 | | | 67 | | | $^{\circ}\text{C}$ |
| Noise Figure | 100 MHz | | | | | | | | | 2.0 | dB | |

NOTE: In series filament circuits, all tubes must be replaced by solid state replacements or appropriate resistor connected externally between pins 3 and 4. Some applications may require modified TS6AK5. Consult Teledyne Semiconductor for application information.