The CK727 is a PNP junction transistor intended for use in low level audio applications where low noise factor is of prime importance. The tinned flexible leads may be soldered or welded directly to the terminals of circuit components without the use of sockets. Standard inline subminiature sockets may be used by cutting the leads to a suitable length.

**MECHANICAL DATA**

- **CASE:** Plastic and Glass
- **BASE:** None (0.016" tinned flexible leads. Length: 1.5" min.
  Spacing: 0.08" center-to-center)
- **TERMINAL CONNECTIONS:** (Red Dot is adjacent to lead 1)
  - Lead 1 Collector
  - Lead 2 Base
  - Lead 3 Emitter
- **WEIGHT:** 0.025 ounces
- **MOUNTING POSITION:** Any

**ELECTRICAL DATA**

**RATINGS - ABSOLUTE MAXIMUM VALUES:**

- Collector Voltage: -6 volts
- Collector Current: -10 ma.
- Collector Dissipation:
  - *Emitted Current: 10 ma.
  - Ambient Temperature: 70 °C

**CHARACTERISTICS:** (at 27°C)

- Collector Voltage: -1.5 volts
- Collector Current: -0.5 ma.
- Current Amplification Factor (min.): 25
- Collector Resistance (min.): 1.0 meg.
- Collector Cutoff Current (max.)
- Noise Factor (max.) **A**

**AVERAGE CHARACTERISTICS - COMMON Emitter CIRCUIT:** (at 27°C)

- Collector Voltage: -1.5 volts
- Collector Current: -0.5 ma.
- Generator Resistance: 1000 ohms
- Load Resistance: 20,000 ohms
- Gain: 36 db
- Noise Factor **B**

**AVERAGE CHARACTERISTICS - COMMON BASE CIRCUIT:** (at 27°C)

- Collector Voltage: -1.5 volts
- Collector Current: -0.5 ma.
- Generator Resistance: 100 ohms
- Load Resistance: 0.2 meg.
- Gain: 28 db
- Noise Factor **B**

**AVERAGE CHARACTERISTICS - COMMON COLLECTOR CIRCUIT:** (at 27°C)

- Collector Voltage: -1.5 volts
- Collector Current: -0.5 ma.
- Generator Resistance: 0.1 meg.
- Load Resistance: 10,000 ohms
- Gain: 14 db
- Noise Factor **B**

**With zero emitter current in grounded base connection.**

**In a one-cycle bandwidth at 1000 cycles.**

**Measured under conditions described in 'Common Emitter Circuit'.**

**This is a function of maximum ambient temperature (TA) expected. It is approximately equal to 4 (70 °C - TA) milliwatts.**

Tentative Data
GERMANIUM TRANSISTOR

AVERAGE NOISE CHARACTERISTICS
Common Emitter

Conditions:
- Collector Voltage ($V_c$): $R_g = 1000$ ohms
- Collector Current ($I_c$): $I_c = 0.5$ ma.
- Generator Resistance ($R_g$): $V_c = 1.5$ volts
- Load Resistance: $20,000$ ohms

AVERAGE NOISE CHARACTERISTICS
Common Base

Conditions:
- Collector Voltage ($V_c$): $R_g = 100$ ohms
- Collector Current ($I_c$): $R_g = 100$ ohms
- Generator Resistance ($R_g$): $V_c = 1.5$ volts
- Load Resistance: $200,000$ ohms
GERMANIUM TRANSISTOR

AVERAGE NOISE CHARACTERISTICS
Common Collector

Conditions:
- Emitter Voltage ($V_e$)
- Emitter Current ($I_e$)
- Generator Resistance ($R_g$)
- Load Resistance = 10,000 ohms

$R_g = 100,000$ ohms
$I_e = 0.5$ ma.
$R_g = 100,000$ ohms
$V_e = 1.5$ volts
$I_e = 0.5$ ma.

Generator Res.  Emitter Voltage  Emitter Current
4.0  1.0  0.2
4.5  0.4  0.6
5.0  0.8  1.0
5.5  0.8  1.0
6.0  0.8  1.0

Noise Factor - dB
20  22
24  26
28
30
32

EMITTER VOLTAGE
EMITTER CURRENT
GEN. RESISTANCE

RAYTHEON MANUFACTURING COMPANY
RECEIVING AND CATHODE RAY TUBE OPERATIONS
February 22, 1955
NEWTON 58, MASS.