

General Description

The FJT 0908/0924 are high gain, high impedance per-amplifiers which are specially suited for use in audio and telephone Electret Condenser Microphones(ECM).

Features

- .High voltage gain
- .High ESD voltage
- .Wide input signal
- .High gain linearity
- .Low input capacitance
- .Built-in capacitor 10pF for RF noise elimination.

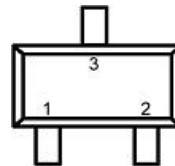
Applications

- .Cellular Phones
- .Notebooks
- .DSC, DVC
- .Hand-free Headset
- .Hearing Aid
- .Portable Multimedia Application

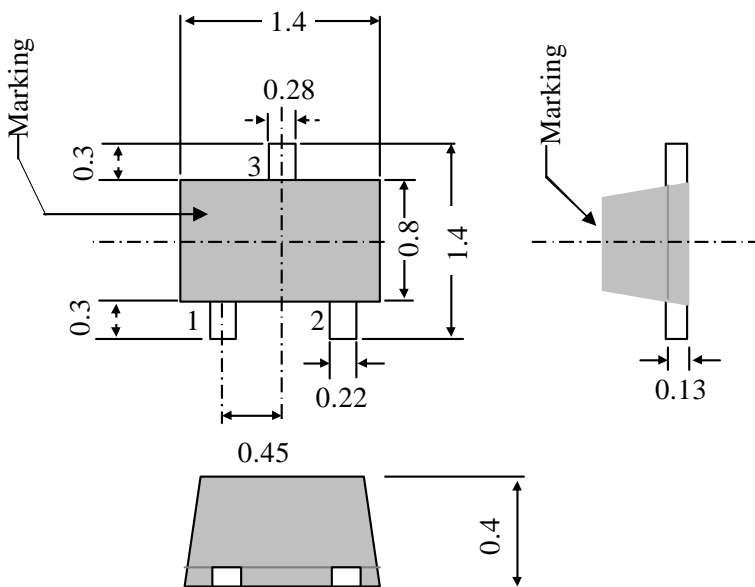
Package

SOT-113S

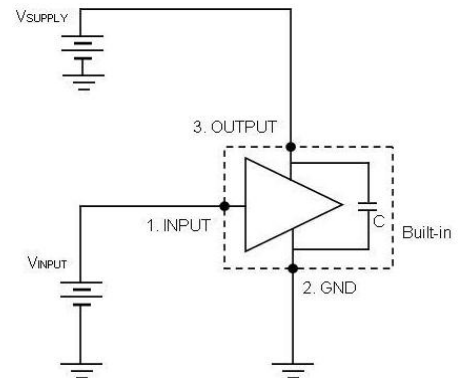
Pin Configuration



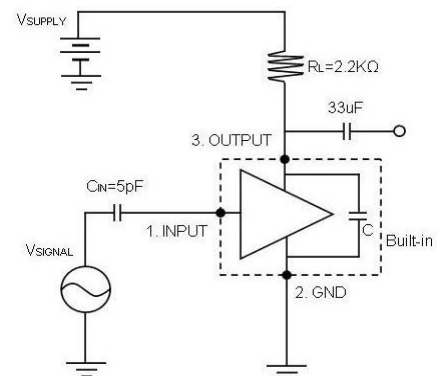
Package Dimensions



DC Parameters Test Circuit



AC Parameters Test Circuit



Absolute Maximum Ratings

| | |
|---|------------|
| SUPPLY Voltage(V_{SUPPLY})----- | 6V |
| SUPPLY Current(I_{SUPPLY})----- | 10mA |
| Input Current(I_{INPUT})----- | 1mA |
| Allowable Power Dissipation(P_D)----- | 100mW |
| Junction Temperature(T_j)----- | 150 |
| Storage Temperature(T_{stg})----- | -55 to 150 |
| ESD----- | 8kV |

Recommended Operating Conditions

| | |
|---|---------------|
| Input Voltage(V_{IN})----- | +1.5 to +5.5V |
| Operating Temperature Range(T_j)----- | -40 to +85 |

Electrical Characteristics

($T_A=25$, $R_L=2.2k$, $C_{IN}=5pF$, $V_{SUPPLY}=3V$, $V_{SIGNAL}=28mV_{PP}$, unless otherwise noted.)

| FJT 0908/0924 | | | | | | |
|-------------------------------|--------------|---|-----|-----|------|------|
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
| Supply Voltage | V_{SUPPLY} | | 1.5 | | 5.0 | V |
| Input Capacitance | C_{INPUT} | $f = 1MHz$ | | 2.0 | | pF |
| Gain Reduction with Frequency | G_v | $f = 1kHz$ to $100Hz$, $V_{SUPPLY} = 3.0V$ | | | -1.0 | dB |
| Input Impedance | Z_{INPUT} | $f = 1kHz$ | 30 | | | M |
| Output Impedance | Z_{OUTPUT} | $f = 1kHz$ | | | 2.2 | k |

($T_A=25$, $R_L=2.2k$, $C_{IN}=5pF$, $V_{SUPPLY}=2V$, $V_{SIGNAL}=28mV_{PP}$, unless otherwise noted.)

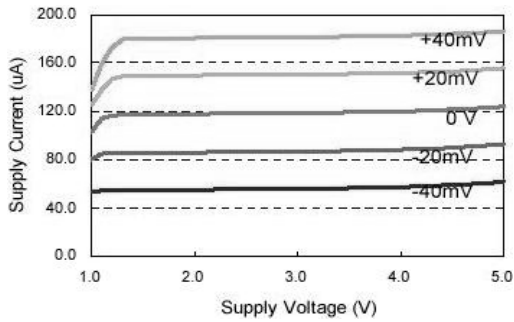
| FJT 0908 | | | | | | |
|---------------------------|--------------|-----------------------|-----|------|------|------------------|
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
| Supply Current | I_{SUPPLY} | | | | 200 | uA |
| Voltage Gain | G_v | $f = 1kHz$ | 6.5 | 8 | 9.5 | dB |
| Total Harmonic Distortion | THD | $f = 1kHz$ | | 0.29 | 0.61 | % |
| Maximum Input Signal | V_{SIGNAL} | $f = 1kHz$, THD < 1% | | | 130 | mV _{PP} |
| Output Noise | e_n | A-Weighted | | -105 | | dB |

($T_A=25$, $R_L=2.2k$, $C_{IN}=5pF$, $V_{SUPPLY}=3V$, $V_{SIGNAL}=28mV_{PP}$, unless otherwise noted.)

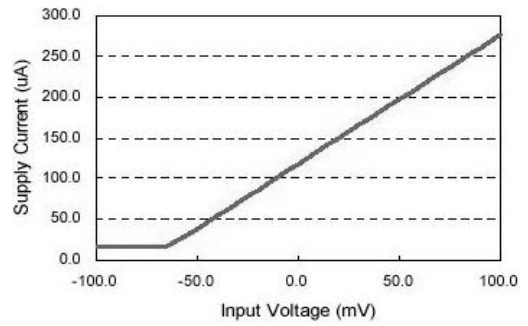
| FJT 0924 | | | | | | |
|---------------------------|--------------|-----------------------|-----|------|------|------------------|
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
| Supply Current | I_{SUPPLY} | | | | 300 | uA |
| Voltage Gain | G_v | $f = 1kHz$ | 17 | 19 | 21 | dB |
| Total Harmonic Distortion | THD | $f = 1kHz$ | | 0.29 | 0.82 | % |
| Maximum Input Signal | V_{SIGNAL} | $f = 1kHz$, THD < 1% | | | 70 | mV _{PP} |
| Output Noise | e_n | A-Weighted | | -95 | | dB |

Typical Performance

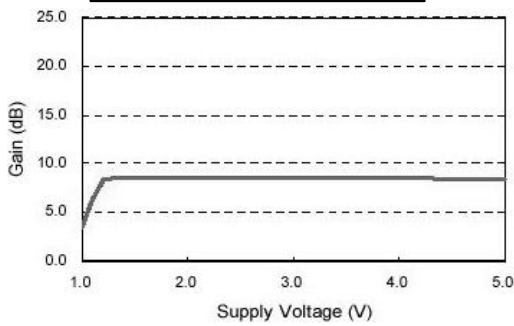
FJT 0908 Supply Current vs Supply Voltage



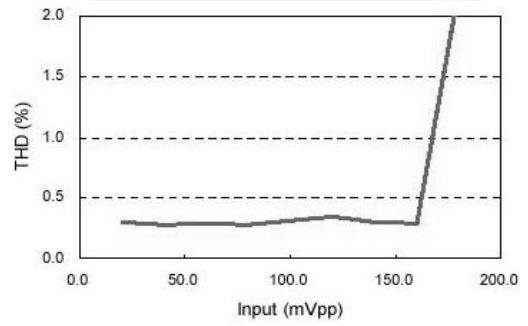
FJT 0908 Output Current vs Input Voltage



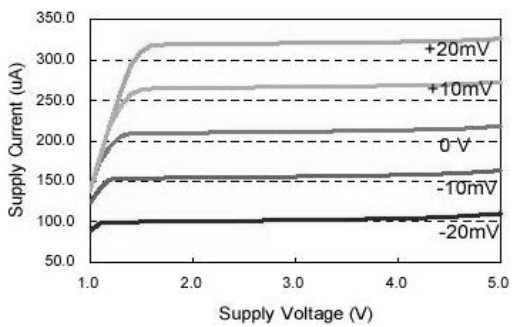
FJT 0908 Gain vs Supply Voltage



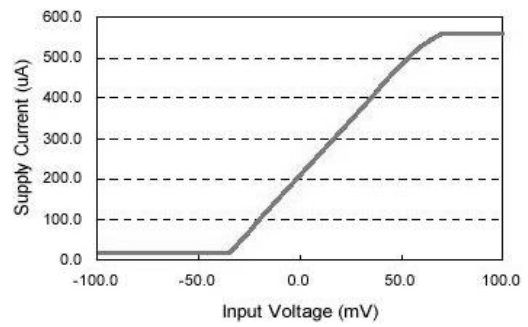
FJT 0908 THD vs Input Voltage (1kHz)



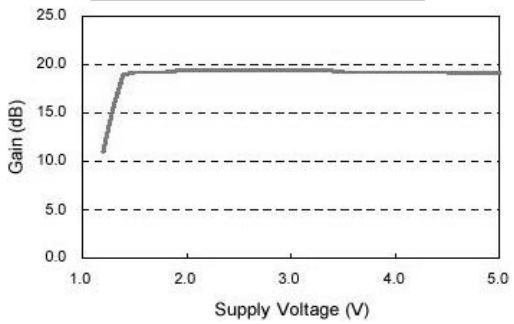
FJT 0924 Supply Current vs Supply Voltage



FJT 0924 Output Current vs Input Voltage



FJT 0924 Gain vs Supply Voltage



FJT 0924 THD vs Input Voltage (1kHz)

