

J203, J204

N-Channel Silicon Junction Field-Effect Transistor

- Audio Amplifiers
- General Purpose Amplifiers

Absolute maximum ratings at $T_A = 25^\circ\text{C}$

| | |
|--------------------------------------------------|------------|
| Reverse Gate Source & Reverse Gate Drain Voltage | - 40 V |
| Continuous Forward Gate Current | 50 mA |
| Continuous Device Power Dissipation | 360 mW |
| Power Derating | 3.27 mW/°C |

At 25°C free air temperature:

Static Electrical Characteristics

| | | J203 | | | J204 | | | Process NJ16 | | |
|-----------------------------------|----------------------|------|------|-------|-------|------|-------|--------------|-----------------------------------------------------|--|
| | | Min | Typ | Max | Min | Typ | Max | Unit | Test Conditions | |
| Gate Source Breakdown Voltage | $V_{(BR)GSS}$ | - 40 | | | - 25 | | | V | $I_G = - 1\mu\text{A}, V_{DS} = \emptyset\text{V}$ | |
| Gate Reverse Current | I_{GSS} | | | - 100 | | | - 100 | pA | $V_{GS} = - 20\text{V}, V_{DS} = \emptyset\text{V}$ | |
| Gate Operating Current | I_G | | - 10 | | | - 10 | | pA | $V_{DG} = 20\text{V}, I_D = I_{DSS(\text{min})}$ | |
| Gate Source Cutoff Voltage | $V_{GS(\text{OFF})}$ | - 2 | | - 10 | - 0.3 | | - 2 | V | $V_{DS} = 20\text{V}, I_D = 10\text{ nA}$ | |
| Drain Saturation Current (Pulsed) | I_{DSS} | 4 | | 20 | 0.2 | 1.2 | 3 | mA | $V_{DS} = 15\text{V}, V_{GS} = \emptyset\text{V}$ | |

Dynamic Electrical Characteristics

| | | | | | | | | | | |
|----------------------------------------------|-------------|------|----|--|-----|------|--|---------------|---------------------------------------------------|--------------------|
| Common Source Forward Transconductance | g_{fs} | 1500 | | | 500 | 1500 | | μS | $V_{DS} = 20\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1\text{ kHz}$ |
| Common Source Output Conductance | g_{os} | | 10 | | | 2.5 | | μS | $V_{DS} = 20\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1\text{ kHz}$ |
| Common Source Input Capacitance | C_{iss} | | 4 | | | 4 | | pF | $V_{DS} = 20\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1\text{ MHz}$ |
| Common Source Reverse Transfer Capacitance | C_{rss} | | 1 | | | 1 | | pF | $V_{DS} = 20\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1\text{ MHz}$ |
| Equivalent Short Circuit Input Noise Voltage | \hat{e}_N | | 5 | | | 10 | | nV/√Hz | $V_{DS} = 10\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1\text{ kHz}$ |

TO-226AA Package

Dimensions in Inches (mm)

Pin Configuration

1 Drain, 2 Source, 3 Gate

Surface Mount

SMPJ203, SMPJ204

