

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	$I_G = -1\mu\text{A}$, $V_{DS} = 0\text{V}$
Gate Reverse Current	I_{GSS}			– 100			– 100	pA	$V_{GS} = -20\text{V}$, $V_{DS} = 0\text{V}$
Gate Operating Current	I_G		– 10			– 10		pA	$V_{DG} = 20\text{V}$, $I_D = I_{DSS(min)}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 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	$V_{DS} = 15\text{V}$, $V_{GS} = 0\text{V}$

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	1500			500	1500		μS	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{ kHz}$
Common Source Output Conductance	g_{os}		10			2.5		μS	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{ kHz}$
Common Source Input Capacitance	C_{iss}		4			4		pF	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{ MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		1			1		pF	$V_{DS} = 20\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{ MHz}$
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		5			10		nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{ kHz}$

TO-226AA Package

Dimensions in Inches (mm)

Pin Configuration

1 Drain, 2 Source, 3 Gate

Surface Mount

SMPJ203, SMPJ204

