

# N-Channel Silicon Junction Field-Effect Transistor

## • Audio Amplifier

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

Reverse Gate Source &amp; 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

		J232			Process NJ16		
		Min	Typ	Max	Unit	Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40			V	$I_G = -1\ \mu\text{A}$ , $V_{DS} = 0\text{V}$	
Gate Reverse Current	$I_{GSS}$			– 250	pA	$V_{GS} = -30\text{V}$ , $V_{DS} = 0\text{V}$	
Gate Operating Current	$I_G$		– 2		pA	$V_{DS} = 20\text{V}$ , $I_D = 0\text{V}$	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 3		– 6	V	$V_{DS} = 20\text{V}$ , $I_D = 1\ \mu\text{A}$	
Drain Saturation Current (Pulsed)	$I_{DSS}$	5		10	mA	$V_{DS} = 20\text{V}$ , $V_{GS} = 0\text{V}$	

### Dynamic Electrical Characteristics

Common Source Forward Transconductance	$g_{fs}$	2500		5000	$\mu\text{S}$	$V_{DS} = 20\text{V}$ , $V_{GS} = 0\text{V}$	$f = 1\text{ kHz}$
Common Source Output Conductance	$g_{os}$		5		$\mu\text{S}$	$V_{DS} = 20\text{V}$ , $V_{GS} = 0\text{V}$	$f = 1\text{ kHz}$
Common Source Input Capacitance	$C_{iss}$		4		pF	$V_{DS} = 20\text{V}$ , $V_{GS} = 0\text{V}$	$f = 1\text{ MHz}$
Common Source Reverse Transfer Capacitance	$C_{rss}$		1		pF	$V_{DS} = 20\text{V}$ , $V_{GS} = 0\text{V}$	$f = 1\text{ MHz}$
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		20	30	nV/√Hz	$V_{DS} = 10\text{V}$ , $V_{GS} = 0\text{V}$	$f = 10\text{ Hz}$
			6		nV/√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

SMPJ232

