

2N4867, 2N4867A, 2N4868, 2N4868A, 2N4869, 2N4869A

N-Channel Silicon Junction Field-Effect Transistor

• Audio Amplifiers

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

Reverse Gate Source & Reverse Gate Drain Voltage	– 40 V
Gate Current	50 mA
Continuous Device Power Dissipation	300mW
Power Derating	1.7 mW/°C
Storage Temperature Range	– 65°C to + 200°C

At 25°C free air temperature:

Static Electrical Characteristics

		2N4867 2N4867A		2N4868 2N4868A		2N4869 2N4869A		Process NJ16		
		Min	Max	Min	Max	Min	Max	Unit	Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40		– 40		– 40		V	$I_G = -1\mu\text{A}$, $V_{DS} = \emptyset\text{V}$	
Gate Reverse Current	I_{GSS}		– 0.25		– 0.25		– 0.25	nA	$V_{GS} = -30\text{V}$, $V_{DS} = \emptyset\text{V}$	
			– 0.25		– 0.25		– 0.25	μA	$V_{GS} = -30\text{V}$, $V_{DS} = \emptyset\text{V}$	$T_A = 150^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.7	– 2	– 1	– 3	– 1.8	– 5	V	$V_{DS} = 20\text{V}$, $I_D = 1\mu\text{A}$	
Drain Saturation Current (Pulsed)	I_{DSS}	0.4	1.2	1	3	2.5	7.5	mA	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	700	2000	1000	3000	1300	4000	μS	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
Common Source Output Conductance	g_{os}		1.5		4		10	μS	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
Common Source Input Capacitance	C_{iss}		25		25		25	pF	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		5		5		5	pF	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ MHz}$
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		20		20		20	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 10\text{ Hz}$
			10		10		10	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
Noise Figure	NF		1		1		1	dB	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
									(2N4867, 68, 69) $R_G = 20\text{ k}\Omega$ (2N4867A, 68A, 69A) $R_G = 5\text{ k}\Omega$	

TO-72 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

Surface Mount

SMP4867, SMP4867A, SMP4868,
SMP4868A, SMP4869, SMP4869A

