INTERSIL

2N4867/A-2N4869/A
N-Channel JFET

1

FEATURES

- Low Noise Voltage – $e_n \leq 5$ nV/√ Hz
- Low Leakage – $I_{GSS} \leq 0.25$ nA
- High Gain – $Y_{fs} \geq 1300 \leq 4000$ μmho

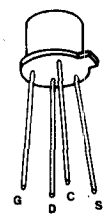
ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

Maximum Temperatures	
Storage Temperature	−65°C to +200°C
Operating Junction Temperature	+200°C
Lead Temperature (Soldering, 10 sec time limit)	+260°C
Maximum Power Dissipation	
Device Dissipation @ Free Air Temperature	300 mW
Linear Derating	1.7 mW/°C
Maximum Voltages & Current	
V_{GS} Gate to Source Voltage	−40 V
V_{GD} Gate to Drain Voltage	−40 V
I_G Gate Current	50 mA

PIN CONFIGURATION

TO-72



CHIP TOPOGRAPHY

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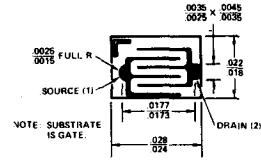

ORDERING INFORMATION

TO-72	WAFER	DICE
2N4867	2N4867/W	2N4867/D
2N4867A	2N4867A/W	2N4867A/D
2N4868	2N4868/W	2N4868/D
2N4868A	2N4868A/W	2N4868A/D
2N4869	2N4869/W	2N4869/D
2N4869A	2N4869A/W	2N4869A/D

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER		2N4867 2N4867A MIN	2N4867 2N4867A MAX	2N4868 2N4868A MIN	2N4868 2N4868A MAX	2N4869 2N4869A MIN	2N4869 2N4869A MAX	UNIT	TEST CONDITIONS		
I_{GSS}	Gate Reverse Current		−0.25 −0.25		−0.25 −0.25		−0.25 −0.25	nA μA	V_{GS} = −30 V, V_{DS} = 0		150°C
BV_{GSS}	Gate-Source Breakdown Voltage	−40		−40		−40		V	I_G = −1 μA, V_{DS} = 0		
$V_{GS(off)}$	Gate-Source Cutoff Voltage	−0.7	−2	−1	−3	−1.8	−5	V	V_{DS} = 20 V, I_D = 1 μA		
I_{DSS}	Saturation Drain Current (Note 1)	0.4	1.2	1	3	2.5	7.5	mA	V_{DS} = 20 V, V_{GS} = 0		
g_{fs}	Common-Source Forward Transconductance (Note 1)	700	2000	1000	3000	1300	4000	μmho	V_{DS} = 20 V, V_{GS} = 0		f = 1 kHz
g_{os}	Common-Source Output Conductance		1.5		4		10	μmho	V_{DS} = 20 V, V_{GS} = 0		f = 1 kHz
C_{rss}	Common-Source Reverse Transfer Capacitance		5		5		5	pF	V_{DS} = 20 V, V_{GS} = 0		f = 1 MHz
C_{iss}	Common-Source Input Capacitance		25		25		25	pF	V_{DS} = 20 V, V_{GS} = 0		f = 1 MHz
$\bar{e}_n$	Short Circuit Equivalent Input Noise Voltage		20		20		20	nV/√Hz	V_{DS} = 10 V, V_{GS} = 0	2N4867 Series	f = 10 Hz
			10		10		10	nV/√Hz	V_{DS} = 10 V, V_{GS} = 0	2N4867A Series	f = 10 Hz
			10		10		10	nV/√Hz	V_{DS} = 10 V, V_{GS} = 0	2N4867 Series	f = 1 kHz
			5		5		5	nV/√Hz	V_{DS} = 10 V, V_{GS} = 0	2N4867A Series	f = 1 kHz
NF	Spot Noise Figure		1		1		1	dB	V_{DS} = 10 V, V_{GS} = 0 R_{gen} = 20 K, 2N4867 Series R_{gen} = 5 K, 2N4867A Series		f = 1 kHz

NOTE: 1. Pulse test duration 2 ms.