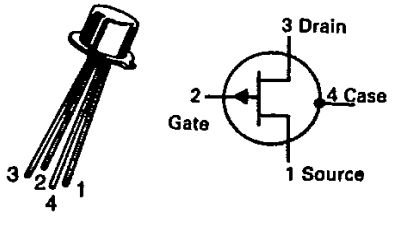
2N3909, A

CASE 20-03, STYLE 5
TO-72 (TO-206AF)



JFET AMPLIFIERS

P-CHANNEL — DEPLETION

Refer to 2N5460 for graphs.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	−20	Vdc
Drain-Gate Voltage	V_{DG}	−20	Vdc
Reverse Gate-Source Voltage	V_{GSR}	20	Vdc
Forward Gate Current	I_{GF}	10	mAdc
Forward Gate-Source Voltage	V_{GSF}	20	Vdc
Total Device Dissipation @ T_A = 25°C Derate above 25°C	P_D	300 2.0	mW mW/°C
Storage Temperature Range	T_{stg}	−65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.) (1)

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Gate-Source Breakdown Voltage (I_G = 10 μAdc, V_{DS} = 0)		$V_{(BR)GSS}$	20	—	Vdc
Gate Reverse Current (V_{GS} = 10 Vdc, V_{DS} = 0) (V_{GS} = 10 Vdc, V_{DS} = 0, T_A = 100°C)		I_{GSS}	— —	10 1.0	nAdc μAdc
Gate Source Cutoff Voltage (V_{DS} = −10 Vdc, I_D = 10 μAdc)	2N3909 2N3909A	$V_{GS(off)}$	— —	8.0 8.0	Vdc
Gate Source Voltage (V_{DS} = −10 Vdc, I_D = 30 μAdc)		V_{GS}	0.3	7.9	Vdc
ON CHARACTERISTICS					
Zero-Gate-Voltage Drain Current(2) (V_{DS} = −10 Vdc, V_{GS} = 0)	2N3909 2N3909A	I_{DSS}	−0.3 −1.0	−15 −15	mAdc
SMALL-SIGNAL CHARACTERISTICS					
Forward Transfer Admittance(2) (V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 kHz)	2N3909 2N3909A	$\|Y_{fs}\|$	1000 2200	5000 5000	μmhos
(V_{DS} = −10 Vdc, V_{GS} = 0, f = 10 MHz)	2N3909 2N3909A		900 2000	— —	
Output Admittance (V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 kHz)		$\|Y_{os}\|$	—	100	μmhos
Input Capacitance (V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 MHz)	2N3909 2N3909A	C_{iss}	— —	32 9.0	pF
Reverse Transfer Capacitance (V_{DS} = −10 Vdc, V_{GS} = 0, f = 1.0 MHz)	2N3909 2N3909A	C_{rss}	— —	16 3.0	pF

(1) The fourth lead (case) is connected to the source for all measurements.
(2) Pulse Test: Pulse Width ≤ 630 ms, Duty Cycle ≤ 10%.