

**2N4338  
2N4339  
2N4340  
2N4341**

**CASE 22-03, STYLE 3  
TO-18 (TO-206AA)**

**JFET  
LOW-FREQUENCY, LOW NOISE**

**N-CHANNEL — DEPLETION**

**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	50	Vdc
Drain-Gate Voltage	$V_{DG}$	50	Vdc
Gate-Source Voltage	$V_{GS}$	50	Vdc
Reverse Gate-Source Voltage	$V_{GSR}$	50	Vdc
Gate Current	$I_G$	50	mA
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300 2.0	mW mW/ $^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +200	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted.)**

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Gate-Source Breakdown Voltage ( $I_G = -1.0 \mu\text{A}$ )	$V_{(BR)GSS}$	50	—	Vdc
Gate Reverse Current ( $V_{GS} = -30 \text{ V}$ )	$I_{GSS}$	—	0.1	nA
Gate Source Cutoff Voltage ( $V_{DS} = 15 \text{ V}$ , $I_D = 0.1 \mu\text{A}$ )	$V_{GS(off)}$	-0.3 -0.6 -1.0 -2.0	-1.0 -1.8 -3.0 -6.0	Vdc
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**ON CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
Zero-Gate-Voltage Drain Current ( $V_{DS} = 15 \text{ V}$ )	$I_{DSS}^*$	0.2 0.5 1.2 3.0	0.6 1.5 3.6 9.0	mA
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**SMALL-SIGNAL CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
Forward Transfer Admittance ( $V_{DS} = 15 \text{ V}$ , $f = 1.0 \text{ kHz}$ )	$ y_{fs} ^*$	600 800 1300 2000	1800 2400 3000 4000	$\mu\text{mhos}$
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Output Admittance ( $V_{DS} = 15 \text{ V}$ , $f = 1.0 \text{ kHz}$ )	$ y_{os} $	— — — —	5.0 15 30 60	$\mu\text{mhos}$
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Input Capacitance ( $V_{DS} = 15 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_{iss}$	—	6.0	pF
Reverse Transfer Capacitance ( $V_{DS} = 15 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_{rss}$	—	2.0	pF

**FUNCTIONAL CHARACTERISTICS**

Characteristic	Symbol	Min	Max	Unit
Noise Figure ( $V_{DS} = 15 \text{ Volts}$ , $f = 1.0 \text{ kHz}$ , $R_G = 1.0 \text{ M}\Omega$ )	NF	—	1.0	dB

\*Pulse Test: Pulse Width  $\leq 630 \text{ msec}$ , Duty Cycle  $\leq 10\%$ .

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