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2N3819 N-Channel RF Amplifier TO-92 Type Package

Description:

The 2N3819 is a N-Channel RF Amplifier transistor designed for RF amplifier and mixer applications operating up to 450Mhz, and for analog switching requiring low capacitance.

Absolute Maximum Ratings: ($T_C = +25^{\circ}\text{C}$, Note 1 unless otherwise specified)

Drain-Gate Voltage, V_{DG}	25V
Gate-Source Voltage, V_{GS}	-25V
Drain Current, I_D	50mA
Forward Gate Current, I_{GF}	10 mA
Total Device Dissipation ($T_A = +25^{\circ}\text{C}$), P_D	350mW
Derate Above $+25^{\circ}\text{C}$	2.8mW/ $^{\circ}\text{C}$
Storage Temperature Range, T_{STG}	-55 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	125 $^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction-to-Ambient, R_{thJA}	35 $^{\circ}\text{C}/\text{W}$

Note 1. These ratings are limiting values above which the serviceability of the device may be impaired and are based on maximum temperature of $+150^{\circ}\text{C}$.

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1.0\mu\text{A}$, $V_{DS} = 0$	25	-	-	V
Gate Reverse Current	I_{GSS}	$V_{GS} = -15\text{V}$, $V_{DS} = 0$	-	-	2.0	nA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 15\text{V}$, $I_D = 2.0\text{nA}$	-	-	8.0	V
Gate-Source Voltage	V_{DS}	$V_{DS} = 15\text{V}$, $I_D = 200\mu\text{A}$	-0.5	-	7.5	V
ON Characteristics						
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 15\text{V}$, $I_D = 0$	2.0	-	20	mA

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small-Signal Characteristics						
Forward Transfer Admittance	y_{fs}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{kHz}$	1600	-	-	μmhos
Output Admittance	y_{os}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	-	-	50	μmhos
Output Conductance	g_{oss}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	-	-	50	μmhos
Forward Transfer Conductance	g_{fs}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	2000	-	6500	μmhos
Input Capacitance	C_{iss}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	-	-	8.0	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{MHz}$	-	-	4.0	pF

