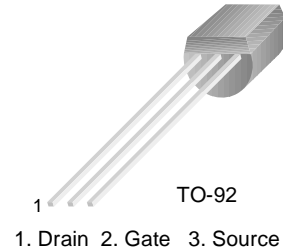


# 2N3819

## N-Channel RF Amplifier

- This device is designed for RF amplifier and mixer applications operating up to 450MHz, and for analog switching requiring low capacitance.
- Sourced from process 50.



## Epitaxial Silicon Transistor

### Absolute Maximum Ratings\* $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$V_{DG}$	Drain-Gate Voltage	25	V
$V_{GS}$	Gate-Source Voltage	-25	V
$I_D$	Drain Current	50	mA
$I_{GF}$	Forward Gate Current	10	mA
$T_{STG}$	Storage Temperature Range	-55 ~ 150	$^\circ\text{C}$

\* This ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

- 1) These rating are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0\mu\text{A}, V_{DS} = 0$	25			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -15\text{V}, V_{DS} = 0$			2.0	nA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15\text{V}, I_D = 2.0\text{nA}$			8.0	V
$V_{GS}$	Gate-Source Voltage	$V_{DS} = 15\text{V}, I_D = 200\mu\text{A}$	-0.5		-7.5	V
<b>On Characteristics</b>						
$I_{DSS}$	Zero-Gate Voltage Drain Current	$V_{DS} = 15\text{V}, V_{GS} = 0$	2.0		20	mA
<b>Small Signal Characteristics</b>						
$g_{fs}$	Forward Transfer Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	2000		6500	$\mu\text{mhos}$
$g_{oss}$	Output Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$			50	$\mu\text{mhos}$
$y_{fs}$	Reverse Transfer Admittance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$	1600			$\mu\text{mhos}$
$C_{iss}$	Input Capacitance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$			8.0	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{KHz}$			4.0	pF

### Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	350	mW
	Derate above $25^\circ\text{C}$	2.8	mW/ $^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

\* Device mounted on FR-4 PCB  $1.5'' \times 1.6'' \times 0.06''$

# Package Dimensions

2N3819

## TO-92



Dimensions in Millimeters