

TL/G/10035-39

Gate is also backside contact

DESCRIPTION

Process 92 is designed for VHF/UHF amplifier, oscillator, and mixer applications. As a common gate amplifier, 16 dB at 100 MHz and 12 dB at 450 MHz can be realized. Worst case 75Ω input impedance provides ideal input match.

Electrical Characteristics ($T_A = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV_{GSS}	Gate-Source Breakdown Voltage	$V_{DS} = 0V, I_G = -1\ \mu\text{A}$	-20	-30		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 10V, V_{GS} = 0V$, Pulsed	10	38	80	mA
g_{fs}	Forward Transconductance	$V_{DS} = 10V, V_{GS} = 0V$, Pulsed		19		mmhos
g_{fs}	Forward Transconductance	$V_{DG} = 10V, I_D = 10\ \text{mA}$	10	13	18	mmhos
I_{GSS}	Reverse Gate Current	$V_{GS} = -15V, V_{DS} = 0V$		-15	-100	pA
$r_{DS(ON)}$	ON Resistance	$V_{DS} = 100\ \text{mV}, V_{GS} = 0V$	35	45	80	Ω
$V_{GS(OFF)}$	Pinch Off Voltage	$V_{DS} = 10V, I_D = 1\ \text{nA}$	-1.5	-4.0	-6.5	V
g_{os}	Output Conductance	$V_{DG} = 10V, I_D = 10\ \text{mA}$		160	250	μmhos
C_{gd}	Feedback Capacitance	$V_{DG} = 10V, I_D = 10\ \text{mA}, f = 1\ \text{MHz}$		2.0	2.5	pF
C_{gs}	Input Capacitance	$V_{DG} = 10V, I_D = 10\ \text{mA}, f = 1\ \text{MHz}$		4.1	5.0	pF
e_n	Noise Voltage	$V_{DG} = 10V, I_D = 10\ \text{mA}, f = 100\ \text{Hz}$		6.0		$\text{nV}/\sqrt{\text{Hz}}$
NF	Noise Figure	$V_{DG} = 10V, I_D = 10\ \text{mA}, f = 450\ \text{MHz}$		3.0		dB
G_{pg}	Power Gain	$V_{DG} = 10V, I_D = 10\ \text{mA}, f = 450\ \text{MHz}$		12		dB

This process is available in the following device types. *Denotes preferred parts.

TO-52 (NS Package 07)

U308

*U309

*U310

TO-92 (NS Package 92)

J308

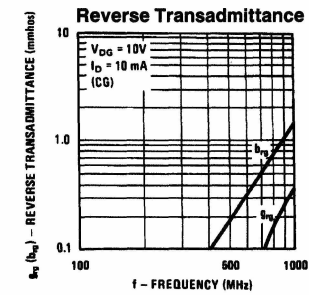
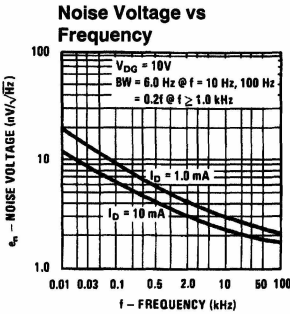
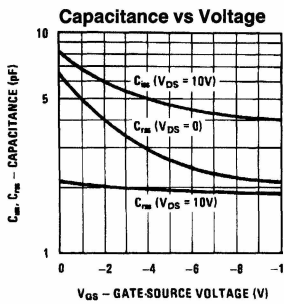
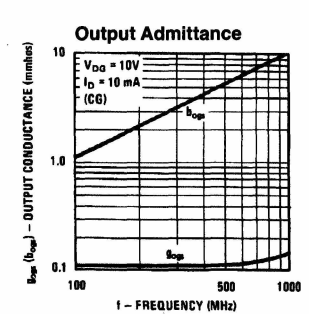
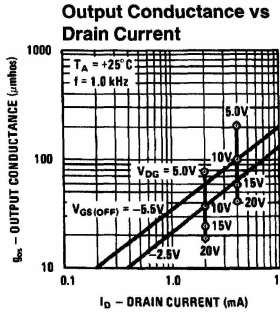
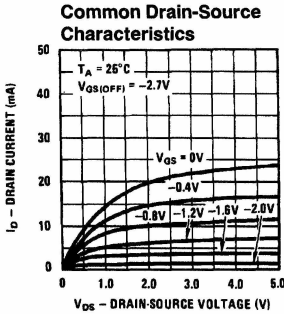
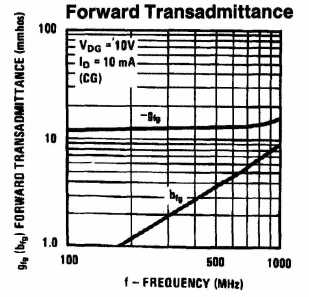
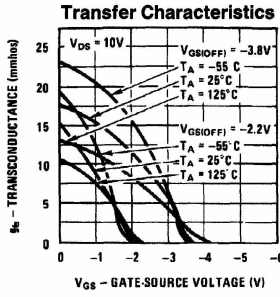
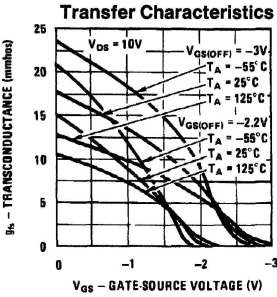
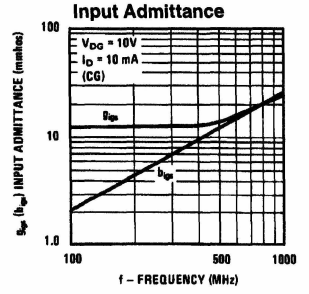
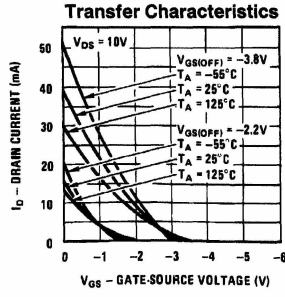
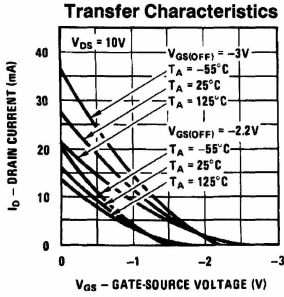
*J309

*J310

TO-236/SOT23 (NS Package 48/49)

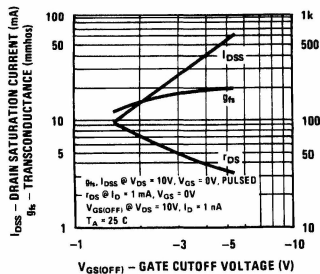
MMBFJ309

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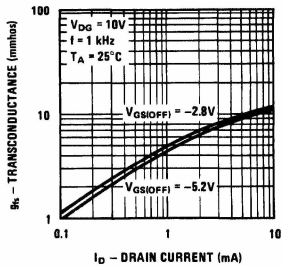


Process 92

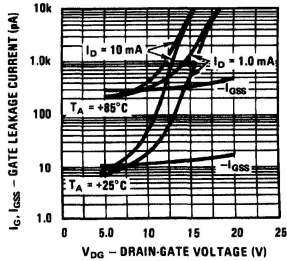
Parameter Interactions



Transconductance vs Drain Current



Leakage Current vs Voltage



TL/G/10035-40