

TL/G/10035-9

Gate is also backside contact

DESCRIPTION

Process 53 is designed primarily for low current DC and audio applications. These devices provide excellent performance as input stages for sub-picoamp instrumentation or any high impedance signal sources.

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV_{GS}	Gate-Source Breakdown Voltage	$V_{DS} = 0V, I_G = -1 \mu A$	-40	-60		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 10V, V_{GS} = 0V$	0.02	0.25	1.0	mA
g_{fs}	Forward Transconductance	$V_{DS} = 10V, V_{GS} = 0V$	80	250	350	μmho
g_{fs}	Forward Transconductance	$V_{DG} = 15V, I_D = 50 \mu A$		120		μmho
I_{GSS}	Reverse Gate Leakage	$V_{GS} = -20V, V_{DS} = 0V$		-0.3	-10	pA
$V_{GS(Off)}$	Pinch Off Voltage	$V_{DS} = 10V, I_D = 1 \text{ nA}$	-0.5	-2.2	-6.0	V
C_{rss}	Feedback Capacitance	$V_{DG} = 15V, V_{GS} = 0V, f = 1 \text{ MHz}$		0.85	1.0	pF
C_{iss}	Input Capacitance	$V_{DS} = 15V, V_{GS} = 0V, f = 1 \text{ MHz}$		2.0	2.5	pF
g_{os}	Output Conductance	$V_{DG} = 10V, I_D = 50 \mu A$		0.9	5.0	μmhos
e_n	Noise Voltage	$V_{DG} = 10V, I_D = 50 \mu A, f = 100 \text{ Hz}$		45	150	$\text{nV}/\sqrt{\text{Hz}}$

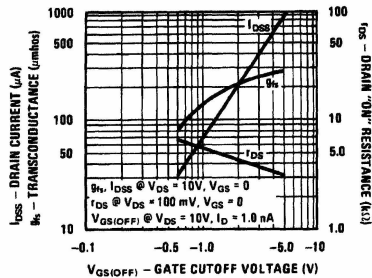
This process is available in the following device types. *Denotes preferred parts.

TO-72 (NS Package 25)

2N4117
*2N4117A
2N4118
*2N4118A
2N4119
*2N4119A
NF5301
NF5301-1
NF5301-2
NF5301-3

TO-92 (NS Package 92)

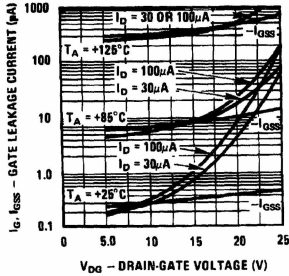
PN4117
PN4117A
PN4118
PN4118A
PN4119
PN4119A
PN4120
PN4120A
*PF5301
PF5301-1
PF5301-2
PF5301-3

Parameter Interactions


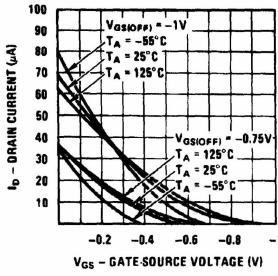
TL/G/10035-10

Source and drain interchangeable

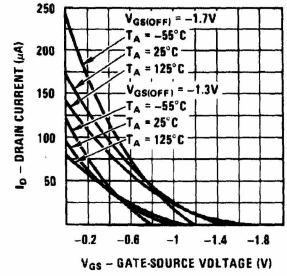
Leakage Current vs Voltage



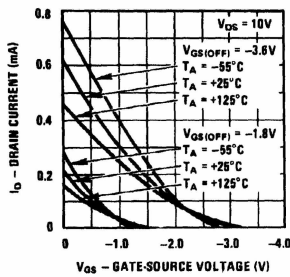
Transfer Characteristics



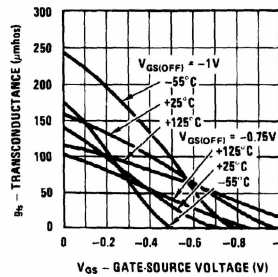
Transfer Characteristics



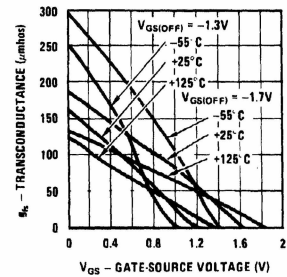
Transfer Characteristics



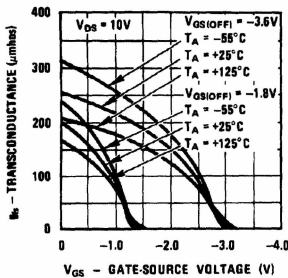
Transfer Characteristics



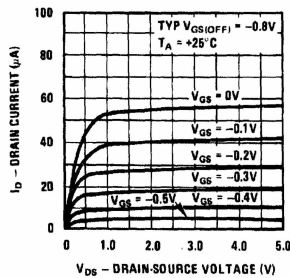
Transfer Characteristics



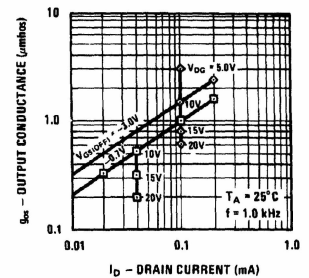
Transfer Characteristics



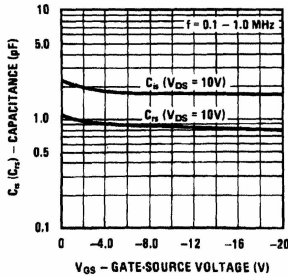
Common Drain-Source Characteristics



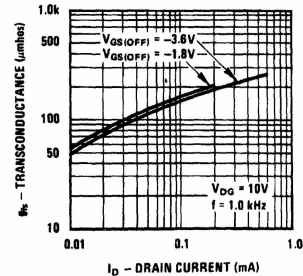
Output Conductance vs Drain Current



Capacitance vs Voltage



Transconductance vs Drain Current



Noise Voltage vs Frequency

