

TL/G/10035-25

Gate is also backside contact

DESCRIPTION

Process 88 is designed primarily for electronic switching applications where a P channel device is desirable. Inherent zero offset voltage, low leakage and low $r_{DS(ON)}$ C_{iss} time constant make this device excellent for low level analog switching, sample and hold circuits and chopper stabilized amplifiers. This device is the complement to Process 51.

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV_{GSS}	Gate-Source Breakdown Voltage	$V_{DS} = 0V, I_G = 1 \mu A$	30	40		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -15V, V_{GS} = 0V$	-5.0	-30	-90	mA
g_{fs}	Forward Transconductance	$V_{DS} = -15V, V_{GS} = 0V$	4.0	13	17	mmhos
g_{fs}	Forward Transconductance	$V_{DG} = -15V, I_D = -2 mA$		3.5		mmhos
I_{GSS}	Gate Leakage	$V_{GS} = 20V, V_{DS} = 0V$		0.05	1.0	nA
$r_{DS(ON)}$	ON Resistance	$V_{DS} = 100 mV, V_{GS} = 0V$	50	80	200	Ω
$V_{GS(OFF)}$	Pinch Off Voltage	$V_{DS} = -15V, I_D = -1 nA$	0.5	5.0	10	V
$I_{D(OFF)}$	Drain OFF Current	$V_{DS} = -15V, V_{GS} = 10V$		-0.05	-10	nA
C_{rss}	Feedback Capacitance	$V_{DG} = -15V, I_D = -2 mA, f = 1 MHz$		4.0	5.0	pF
C_{iss}	Input Capacitance	$V_{DS} = -15V, I_D = -2 mA, f = 1 MHz$		14	15	pF
g_{os}	Output Conductance	$V_{DG} = -15V, I_D = -2 mA$		100	300	$\mu mhos$
e_n	Noise Voltage	$V_{DG} = -15V, I_D = -2 mA, f = 100 Hz$		20		nV/\sqrt{Hz}

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

TO-18 (NS Package 11)

2N2609
2N5018
2N5019
*2N5114
*2N5115
*2N5116

TO-92 (NS Package 92)

*P1086
*P1087

TO-92 (NS Package 94)

*J174
*J175
*J176
*J177
*J270
*J271

TO-236/SOT23

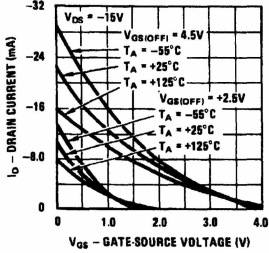
(NS Package 48/49)

MMBFJ174
MMBFJ175
MMBFJ176
MMBFJ177

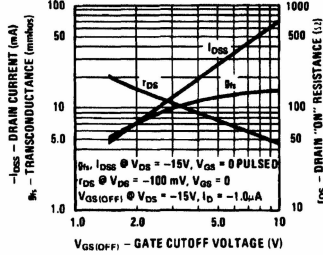
Source and drain interchangeable.

Process 88

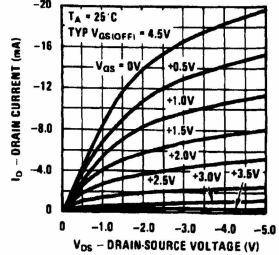
Transfer Characteristics



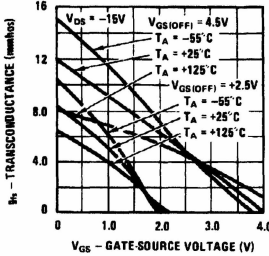
Parameter Interactions



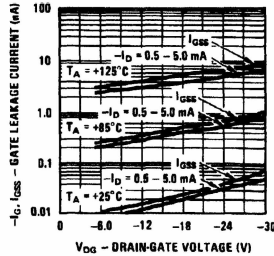
Common Drain-Source Characteristics



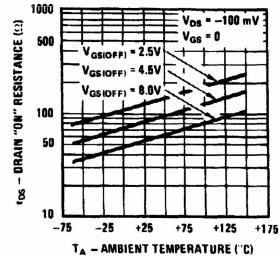
Transfer Characteristics



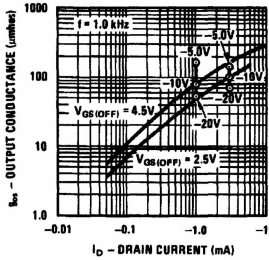
Leakage Current vs Voltage



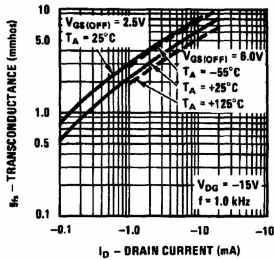
Channel Resistance vs Temperature



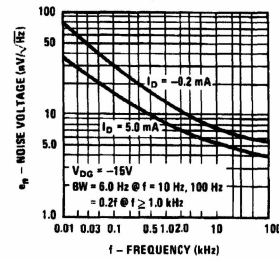
Output Conductance vs Drain Current



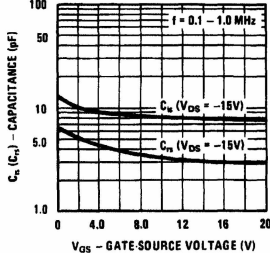
Transconductance vs Drain Current



Noise Voltage vs Frequency



Capacitance vs Voltage



Normalized Drain Resistance vs Bias Voltage

