



TL/G/10035-27

DESCRIPTION

Process 89 is designed primarily for low level amplifier applications. This device is the complement to Process 52. Commonly used in voltage variable resistor applications.

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
BV_{GSS}	Gate-Source Breakdown Voltage	$V_{DS} = 0V, I_G = 1 \mu A$	20	40		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -15V, V_{GS} = 0V$	-0.3	-4.0	-20	mA
g_{fs}	Forward Transconductance	$V_{DS} = -15V, V_{GS} = 0V$	1.0	2.5	4.0	mmhos
g_{rs}	Forward Transconductance	$V_{DG} = -15V, I_D = -0.2 \text{ mA}$		700		μmhos
I_{GSS}	Gate Leakage	$V_{GS} = 20V, V_{DS} = 0V$		0.02	1.0	nA
$V_{GS(OFF)}$	Pinch Off Voltage	$V_{DS} = -15V, I_D = -1 \text{ nA}$	0.5	3.0	9.0	V
C_{rss}	Feedback Capacitance	$V_{DG} = -15V, V_{GS} = 0V, f = 1 \text{ MHz}$		2.0	2.5	pF
C_{is}	Input Capacitance	$V_{DS} = -15V, I_D = -2 \text{ mA}, f = 1 \text{ MHz}$		7.0	8.5	pF
$r_{DS(ON)}$	ON Resistance	$V_{DS} = -100 \text{ mV}, V_{GS} = 0V$		450		Ω
g_{os}	Output Conductance	$V_{DG} = -15V, I_D = -0.2 \text{ mA}$		5.0	15	μmhos
e_n	Noise Voltage	$V_{DG} = -15V, I_D = -0.2 \text{ mA}, f = 100 \text{ Hz}$		30		$\text{nV}/\sqrt{\text{Hz}}$

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

TO-18 (NS Package 11)

2N2608
2N4381
2N5020
2N5021

TO-72 (NS Package 23)

2N3329
2N3330
2N3331
2N3332

TO-92 (NS Package 92)

*2N5460
*2N5461
*2N5462
PN4342
PN4360
PN5033

TO-92 (NS Package 94)

2N3820
TO-236/SOT23
(NS Package 48/49)
MMBF5460
MMBF5461
MMBF5462

Source and drain interchangeable.

Process 89

