

GATE IS ALSO BACKSIDE CONTACT

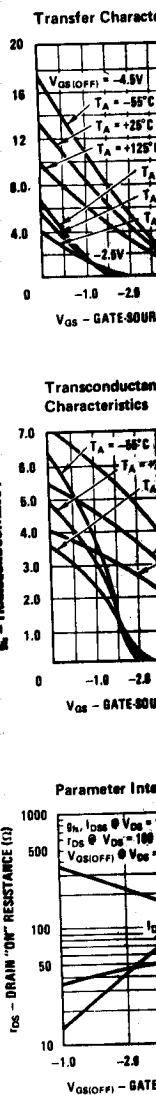
DESCRIPTION

Process 50 is designed primarily for RF amplifier and mixer applications. It will operate up to 450 MHz with low noise figure and good power gain. These devices offer outstanding performance at VHF aircraft and communications frequencies. Their major advantage is low crossmodulation, low intermodulation, low noise figure and good power gain. The device is also a good choice for analog switching where low capacitance is very important.

CHARACTERISTIC	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Gate-Source Breakdown Voltage	$BV_{GSS}$	$V_{DS} = 0V, I_G = -1 \mu A$	-25	-40		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 15V, V_{GS} = 0V$	1.0	10	20	mA
Forward Transconductance	$g_{fs}$	$V_{DS} = 15V, V_{GS} = 0$	3.0	5.5	7.0	mmhos
Forward Transconductance	$g_{fs}$	$V_{DG} = 15V, I_D = 200 \mu A$		1.1		mmhos
Reverse Gate Leakage	$I_{GSS}$	$V_{GS} = -20V, V_{DS} = 0$		-5.0	-100	pA
"ON" Resistance	$r_{DS}$	$V_{DS} = 100 mV, V_{GS} = 0$	100	175	500	$\Omega$
Pinch Off Voltage	$V_{GS(OFF)}$	$V_{DS} = 15V, I_D = 1 nA$	-0.7	-3.5	-6.0	V
Output Conductance	$g_{os}$	$V_{DG} = 15V, I_D = 1 mA, f = 1 kHz$		10		$\mu mhos$
Feedback Capacitance	$C_{rss}$	$V_{DG} = 15V, V_{GS} = 0$		0.7	0.9	pF
Input Capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0$		3.5	4.0	pF
Noise Voltage	$e_n$	$V_{DG} = 15V, I_D = 1 mA, f = 100 Hz$		8.0		$nV/\sqrt{Hz}$
Noise Figure	NF	$V_{DG} = 15V, I_D = 5 mA, R_G = 1 k\Omega, f = 400 MHz$		2.2	4.0	dB
Power Gain	$G_{PS}$	$V_{DG} = 15V, I_D = 5 mA, f = 400 MHz$		12		dB

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

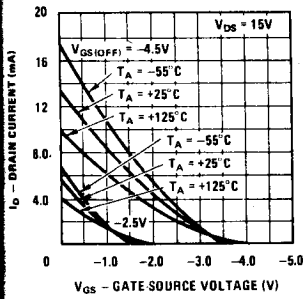
TO-72 (CASE 25)	*2N5486	TO-92 (CASE 94)	BC264C
2N3823	2N5555	2N3819	BC264D
2N3966	2N5668	2N5248	BF245A
2N4223	2N5669	BF244A	BF245B
2N4224	2N5670	BF244B	BF245C
2N4416	*J304	BF244C	BF256A
*2N4416A	*J305	TIS58	BF256B
2N5078	PN4223	TIS59	BF256C
2N5103	PN4224		
2N5104	*PN4416	TO-92 (CASE 97)	
2N5105	PN5163	2N5949	
2N5556	MPF102	2N5950	
2N5557	MPF106	<u>2N5951</u>	
2N5558	MPF107	2N5952	
	MPF110	2N5953	
TO-92 (CASE 92)	MPF111	BC264A	
*2N5484		BC264B	
*2N5485			



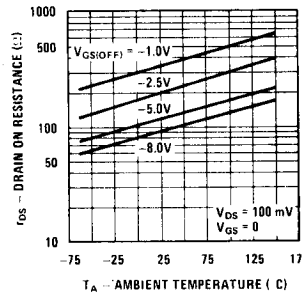
designed primarily for RF amplifier applications. It will operate up to 100 MHz with low noise figure and good power handling. For low noise figure and good power handling, this device offers outstanding performance. For high frequency and communications frequencies, this device offers outstanding performance. The advantage is low crossmodulation and low noise figure and good power handling. This device is also a good choice for analog applications. Its low capacitance is very important.

	TYP	MAX	UNITS
$V_{GS(OFF)}$	-4.0		V
$I_D$	10	20	mA
$g_m$	5.5	7.0	mmhos
$r_{ds(on)}$	1.1		mmhos
$I_{DSS}$	-5.0	-100	$\mu$ A
$r_{DS(on)}$	175	500	$\Omega$
$V_{GS(OFF)}$	-3.5	-6.0	V
$r_{DS(on)}$	10		$\mu$ mhos
$C_{gs}$	0.7	0.9	pF
$C_{ds}$	3.5	4.0	pF
$r_{DS(on)}$	8.0		$nV/\sqrt{Hz}$
$1/f$	2.2	4.0	dB
$1/f$	12		dB

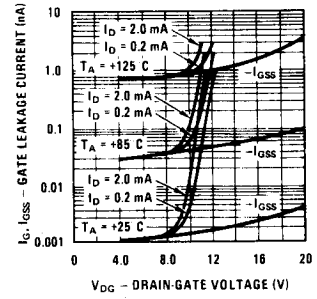
Transfer Characteristics



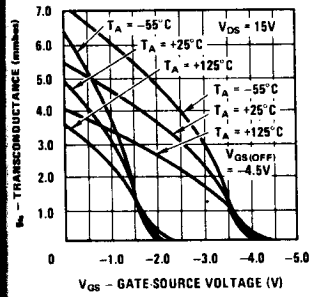
Channel Resistance vs Temperature



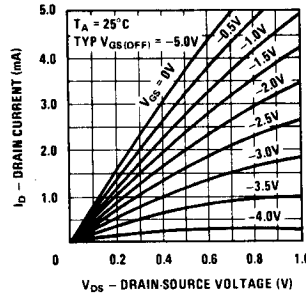
Leakage Current vs Voltage



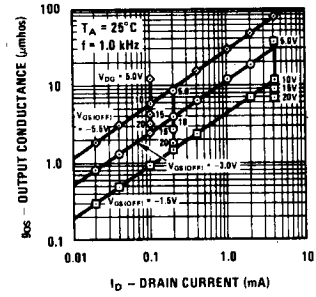
Transconductance Characteristics



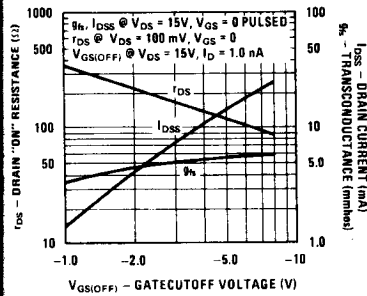
Common Drain-Source Characteristics



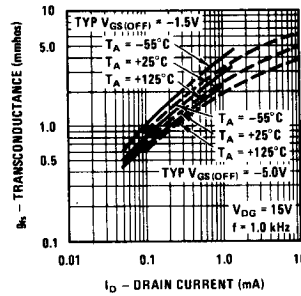
Output Conductance vs Drain Current



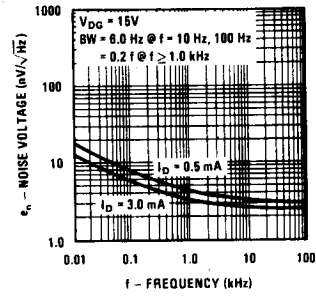
Parameter Interactions



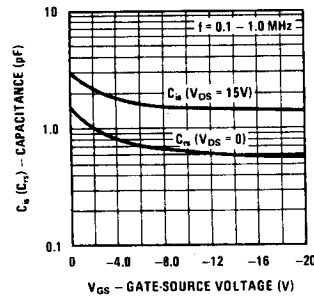
Transconductance vs Drain Current



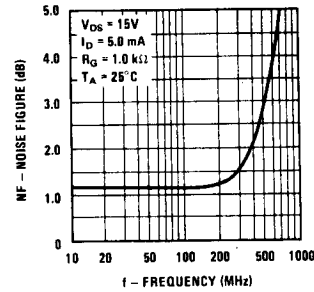
Noise Voltage vs Frequency



Capacitance vs Voltage

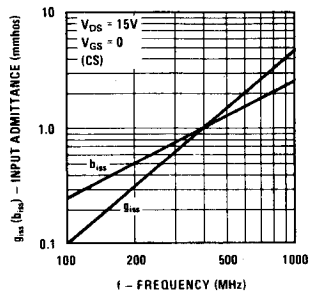


Noise Figure Frequency

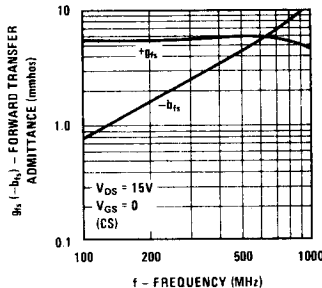


COMMON SOURCE

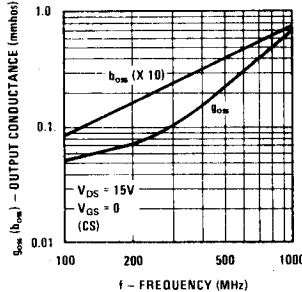
Input Admittance



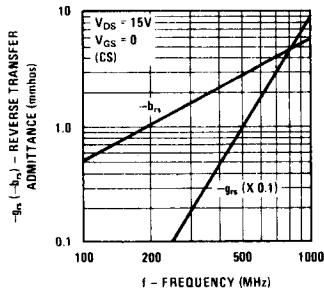
Forward Transadmittance



Output Admittance

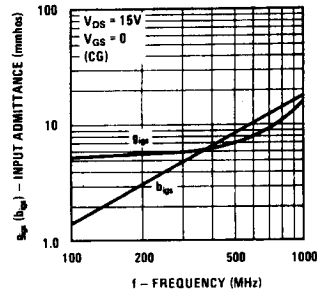


Reverse Transadmittance

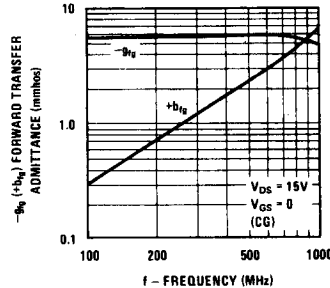


COMMON GATE

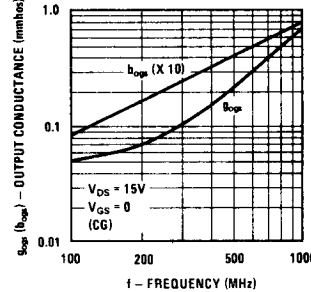
Input Admittance



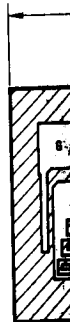
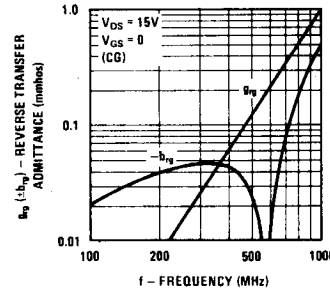
Forward Transadmittance



Output Admittance



Reverse Transadmittance



GATE IS A...

Character

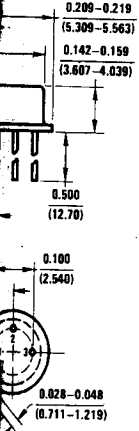
- Gate-Source Breakdown Voltage
- Zero Gate Voltage Drain Current
- Reverse Gate Leakage Current
- ON Resistance
- Forward Transconductance
- Pinch Off Voltage
- Drain OFF Current
- Feedback Capacitance
- Input Capacitance
- Noise Voltage
- Turn-On Time
- Turn-Off Time

this process is av

TO-18 (CASE 02)

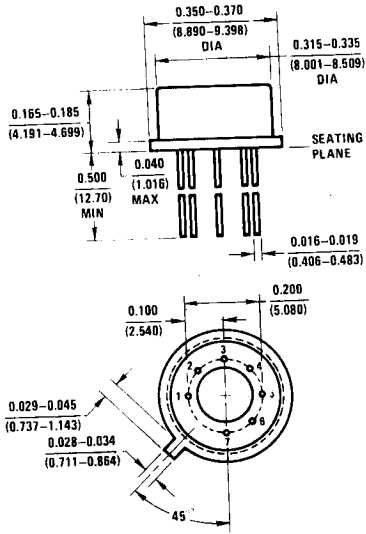
- 2N3970 2N
- 2N3971 2N
- 2N3972 2N
- 2N4091 2N
- 2N4092
- 2N4093
- 2N4391
- 2N4392
- 2N4393
- 2N4856
- 2N4856A
- 2N4857
- 2N4857A
- 2N4858
- 2N4858A
- 2N4859
- 2N4859A

PIN	T (18)	FET (07)
1	E	S
2	B	D
3	C	G



TO-78 (24, 30)

PIN	T (30)	FET (24)
1	E1	S1
2	B1	D1
3	C1	G1
5	E2	S2
6	B2	D2
7	C2	G2



TO-92 (92, 94, 96, 97, 98)

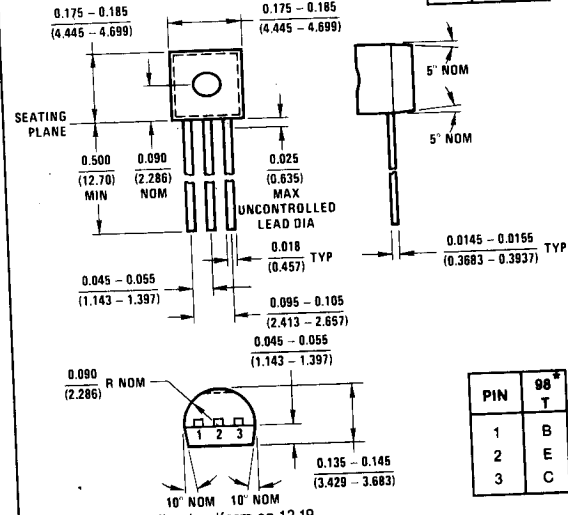
PIN	92 (STD)	
	T	FET
1	C	G
2	B	S
3	E	D

PIN	96	
	T	FET
1	C	G
2	E	D
3	B	S

PIN	94	
	T	FET
1	B	S
2	C	G
3	E	D

Drain-source interchangeable on most JFET devices

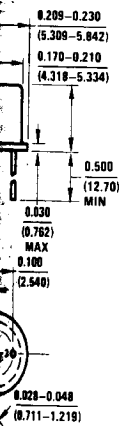
PIN	97*	
	T	FET
1	E	D
2	B	S
3	C	G



PIN	98*	
	T	FET
1	B	S
2	E	D
3	C	G

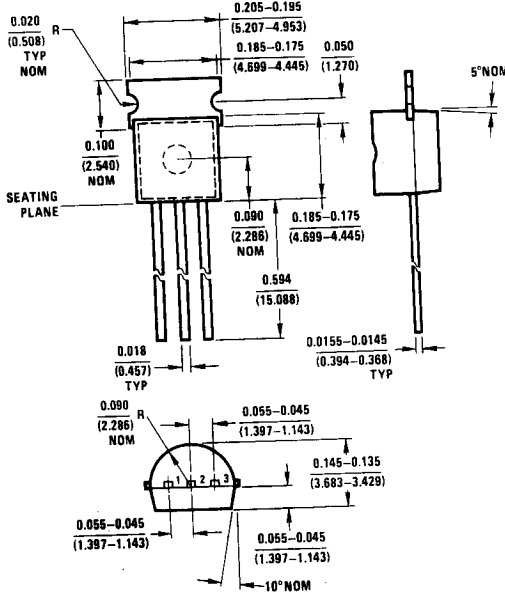
\* See note regarding leadform on 12-19

PIN	T (25)	FET N (25, 29)
1	E	S
2	B	D
3	C	G
4	GND	CASE

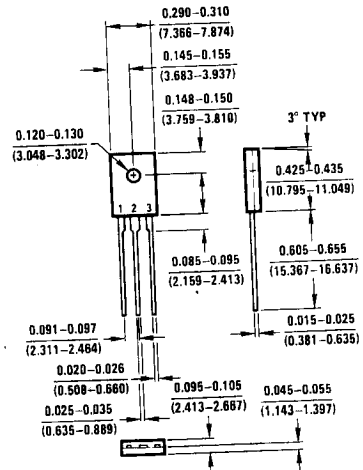


TO-237 (90, 91)

PIN	PACKAGE 90	PACKAGE 91
1	Base	Collector
2	Collector	Base
3	Emitter	Emitter



TO-126 (58)



Pin 1—Emitter  
Pin 2—Collector  
Pin 3—Base  
When mounting the device, torque not to exceed 6.0 in lb.  
If lead bending is required, use suitable clamp or other supports between transistor case and point of bend.