

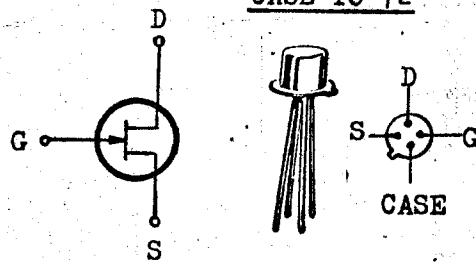
2N3823

N-CHANNEL JUNCTION FIELD EFFECT TRANSISTOR

MICRO ELECTRONICS

THE 2N3823 IS AN N-CHANNEL JFET DESIGNED FOR RF AMPLIFIER AND MIXER APPLICATIONS. IT FEATURES LOW CROSS-MODULATION, LOW NOISE FIGURE AND GOOD POWER GAIN AT FREQUENCY UP TO 450MHz. THE DEVICE IS ALSO SUITABLE FOR ANALOG SWITCHING WHERE LOW JUNCTION CAPACITANCE IS ESSENTIAL.

CASE TO-72



THE S, D, G TERMINALS ARE ELECTRICALLY ISOLATED FROM CASE.

ABSOLUTE MAXIMUM RATINGS

Drain-Gate Voltage	V _{DG}	30V
Drain-Source Voltage	V _{DS}	30V
Gate-Source Voltage	V _{GS}	-30V
Gate Current	I _G	10mA
Total Power Dissipation (T _A ≤ 25°C)	P _{tot}	300mW derate 2mW/°C above 25°C
Operating Junction & Storage Temperature	T _j , T _{stg}	-65 to 175°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

* Common Source

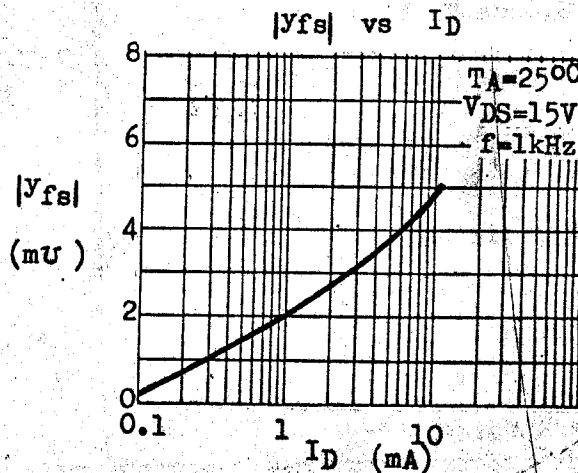
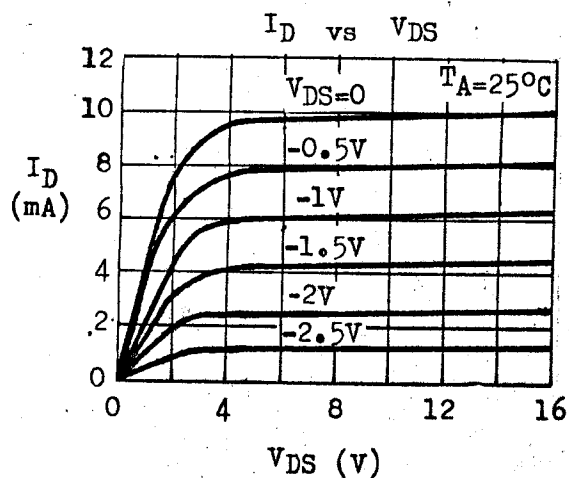
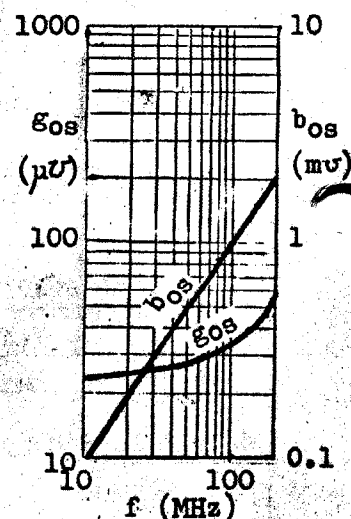
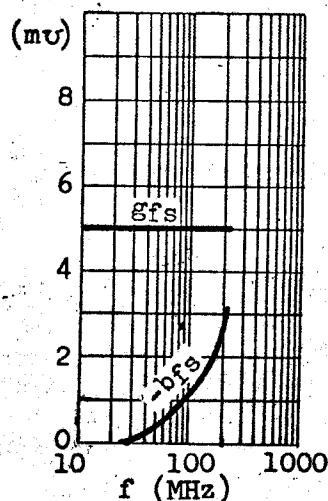
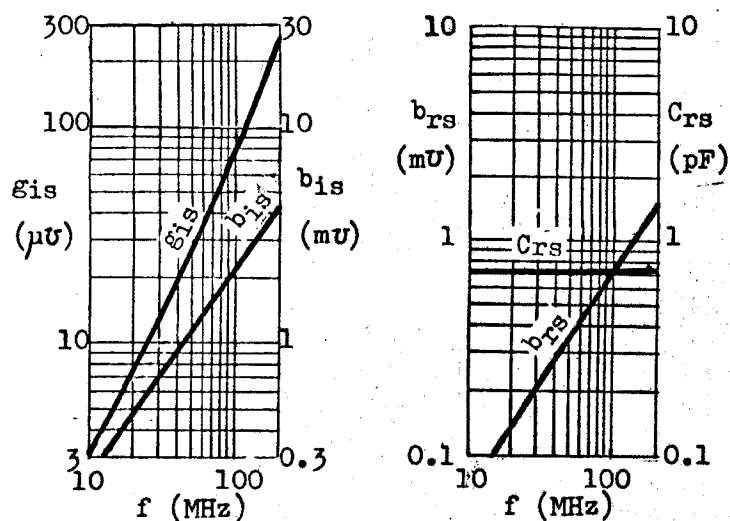
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Gate-Source Breakdown Voltage	-BV _{GSS}	30			V	-I _G =1μA V _{DS} =0
Gate Cutoff Current	-I _{GSS}			0.5 0.5	nA μA	-V _{GS} =20V V _{DS} =0 -V _{GS} =20V V _{DS} =0 T _A =150°C
Zero-Gate-Voltage Drain Current	I _{DSS}	4	10	20	mA	V _{DS} =15V V _{GS} =0
Gate Source Voltage	-V _{GS}	1	3.2	7.5	V	V _{DS} =15V I _D =0.4mA
Gate Source Cutoff Voltage	-V _{GS(off)}		3.5	8	V	V _{DS} =15V I _D =0.5nA
Forward Transfer Admittance	y _{fs} *	3.5	5	6.5	mS	V _{DS} =15V V _{GS} =0 f=1kHz
Output Admittance	y _{os} *		20	35	μS	V _{DS} =15V V _{GS} =0 f=1kHz
Input Capacitance	C _{iss} *		3.5	6	pF	V _{DS} =15V V _{GS} =0 f=1MHz
Feedback Capacitance	C _{rss} *		0.7	2	pF	V _{DS} =15V V _{GS} =0 f=1MHz

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PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Forward Transfer Admittance	$ y_{fs} $ *	3.2	5.5		mU	$V_{DS}=15V$ $V_{GS}=0$ $f=200MHz$
Input Conductance	g_{is} *		250	800	μU	$V_{DS}=15V$ $V_{GS}=0$ $f=200MHz$
Output Conductance	g_{os} *		60	200	μU	$V_{DS}=15V$ $V_{GS}=0$ $f=200MHz$
Spot Noise Figure	NF *		1	2.5	dB	$V_{DS}=15V$ $V_{GS}=0$ $f=100MHz$ $R_G=1K\Omega$
Power Gain	G_{ps} *		12		dB	$V_{DS}=15V$ $I_D=5mA$ $f=400MHz$
Equivalent Noise Input Voltage	\bar{E}_n *		8		nV/\sqrt{Hz}	$V_{DS}=15V$ $I_D=1mA$ $f=100Hz$
"On" Resistance	$r_{ds(on)}$		170		Ω	$V_{DS}=100mV$ $V_{GS}=0$

TYPICAL COMMON SOURCE y-PARAMETER AT $V_{DS}=15V$ $V_{GS}=0$ $T_A=25^\circ C$



3.78.S320/2.5 REV 0